Who are you submitting feedback as (student, teacher, etc.)?	Which is your preferred option?	Why is this your preferred option?	Feedback on Option A	Feedback on Option B	Feedback on Option C	Last Modified Date	ID	Created Date
Industry sector representative	Option A	This closely follows the Curriculum Document.	Grounds learners in Science, part of a science literate population. Needs to know how science works NOT a lot of rote learned science.	Do not like this as it creates a false dichotomy. Physical the "True" science and Natural Science for thee "lesser" students. A dangerous approach.	Certainly meets all criteria but overkill for level 1. We want science literate learners and this starts specialisation too early. Could be very hard to staff.	2020-07-14 14:33:20	ANON-FDGN-6QZ7-Q	2020-07-14 14:33:20

Industry sector representative	Option A	This submission is from Tokona Te Raki - Māori Futures Collective. Our vision is equity for Maori in the Ngāi Tahu takiwā by 2040 in education, employment and income. Through partnerships with Tainui, BERL and the Southern Initiative, we have and continue to gather extensive insights into barriers and enablers to Maori education success and transition to work. One such systemic barrier to success is streaming at every level of the system. The Ngai Tahu tribal magazine recently published an article on this - 'Raising the Gaze' https://ngaitahu.iwi.nz/our_stories/time-to-raise-the-gaze-tk85/. We are currently researching mixed ability maths teaching and its impact on Maori student success. Minister Hipkins is on record stating his opposition to streaming. Streaming is a racist	The responses below have been completed in collaboration with Ihi Research 1. How the subject fits with the policy vision of a broader, foundational NCEA Level 1 with increasing specialisation at Levels 2 and 3. Having just Science available as a single general course at Level 1 supports this policy. Over-specialisation too early can make it more difficult for students to become broadly educated and to choose a field of scientific specialisation best suited to them. Level 2 should be the first opportunity for specialisation, not Level 1 – this is far too early. For example see: Scientist Speaks Out, A: A Personal Perspective On Science, Society And Change; Seaborg Glenn T World Scientific, 29/07/1996	This is 'Streaming' and is systemically racist	This is 'streaming' and is systemically racist	2020-07-15 15:36:18	ANON-FDGN-6QZ9-S	2020-07-15 13:26:01

Industry sector representative	Option C	It gives the most depth for students wanting to go into these, or related fields. Additionally it gives students enough of an introduction to evaluate these subjects for study in years 12 and 13	I feel like this option cannot do any of the subjects enough justice to pique student interests or give them a worthwhile step up into level 2.	This is a good middle ground wherein students get a good introduction to the subjects, but there is a limited number of externals to administer. THis is also how my highschool implemented the NCEA standards when I was there.	It gives the most depth for students wanting to go into these, or related fields. Additionally it gives students enough of an introduction to evaluate these subjects for study in years 12 and 13	2020-07-27 15:43:00	ANON-FDGN-6Q1W-E	2020-07-27 15:43:00

Industry sector representative	Option C	Option C This would give the Students a better grounding in the basics. It is the basics i.e Physics, Biology, Earth & Space and Chemistry that everything in this technical world is built on. We are finding with young people that they could do better with a better understanding of these. The Nature Of Science while a good supplementary subject to study if a Science career is intended the basics is what is required by the general population of New Zealand.	Positives Strong emphasis on Nature of Science. Negatives It would be a strong turn off for the Students who may have an interest in the actual Sciences. Somebody like myself who liked the Sciences and has developed an exporting company here in NZ based on the Sciences would have been turned off from Science at a early stage if all I was doing was Nature of Science in Level 1. At Level 1 you need to be starting to get into the nitty-gritty of each of the basic Sciences and get the Students excited about the subject as this is the foundation for future knowledge. Even if the Student is not going into a Science career this knowledge is required by the general public in this modern World. I have worked with overseas Governments on this very issue of	See answer above for Option A but not quiet as bad.	Negatives It dilutes the Students time a little from the basics with Nature of Sciences. Positives It gives the Students a better grounding in the basic Sciences compared to the other options. As Students being challenged and tested in the individual subjects can give a sense of accomplishment and encouragement to take the subject further in the future. If this was implemented when I was a Student I most probably would have failed as back then my skill set was lacking in certain areas that would have showed up badly if the subject was just Nature of	2020-08-05 15:57:23	ANON-FDGN-6Q3X-H	2020-08-05 15:57:23

Tertiary education representative	Option B	Option B would allow for more depth in areas such as Physics, Biology and Chemistry to occur and give a better base understanding of these subjects which will better prepare them to progress more effectively through those subject in later years. Option A is too broad in that it doesn't ensure enough base level learning in each science subject, while Option C is almost providing too many options, limiting what a student could do outside of sciences.	Positive - it is a single subject meaning students can still take a range of other options. Negative - not enough assurances that students will get a broad base across all sciences as schools and specific teachers could have too much freedom to pick and choose how much of each discipline is included in their teaching. This is possible too broad, and too much choice for schools. We need to ensure that students get a good base knowledge of each discipline and not what suits each school or teacher. This approach could see subjects like physics not be given the attention needed.	Positive - good coverage of each discipline, particularly for students with an obvious talent in sciences. This is a good "Goldilocks" approach in that it allows for students wanting a good base across physical and natural sciences, while leaving a general sciences subject open to those just wanting a very broad option. By providing those two subjects this would allow students wanting to take a science pathway to get a good understanding of Physics, Chemistry, Biology and Earth and Space Science, while still allowing them to take other options such as a language	Positive - broad base of knowledge in each discipline Negative - too much for NCEA Level 1 and would restrict options available to students. While Option A was too broad, Option C is too specific and restrictive on students. As a foundation qualification this would go too far and be heavily restrictive on any other options available to students. This approach would only benefit a select few who were able to take an entire focus on Sciences.	2020-07-06 09:40:15	ANON-FDGN-6QRJ-2	2020-07-06 09:40:15

Tertiary education representative	Option C	Because it is the most focused approach, clearly indicating scope and objective. It would provide students with dedicated options to suit there capabilities and strength.	This would be a one-size-fits-all approach which is an option for many but would not challenge and nurture high achieving students.	This option would combine the disadvantages of option A with those of option C. It is a bad compromise in my opinion and should not be followed.	This option would allow students to have clear subject related objectives, have a concept of the different branches of science and potentially focus on one or two subjects more closely. I am assuming that this approach is flexible and able to cater for the needs and strength of individual students as well as the boundary conditions (smaller) schools may have.	2020-07-06 10:46:33	ANON-FDGN-6QRQ-9	2020-07-06 10:46:33
Tertiary education representative	Option C	Option C allows for the most in-depth study of Chemistry, Biology and Physics.			Option C allows for the most in-depth study of Chemistry, Biology and Physics.	2020-08-03 16:43:36	ANON-FDGN-6QGY-6	2020-08-03 16:43:36

Tertiary education representative	Option C	I think it's important to have choice for both students and teachers to enable them to maintain and motivate students curiosity to want to continue science.	At high school you have teacher specialists teaching science - trying to get a physics teacher to teach biology well or vice versa will require lots of specialised pd/training and support that's currently not on offer.	It will be difficult to put these subjects together to ensure concepts are taught correctly for continuation into year 12/13	Flexibility for students and teachers to create broad based or traditional programmes depending on student needs. Concepts taught for progression to year 12 and fundamental science communication.	2020-08-05 07:34:33	ANON-FDGN-6Q56-H	2020-08-05 07:34:33
Tertiary education representative	Option C	Allowing for a bigger range of flexibility in learning program design	Use qualified facilitators to engage in old across the country to ensure teachers engaged and understand the challenges and changes needed in program design and teaching	Yes there are some more likely combinations, but it requires developing contextual approaches to learning rather than content focused program. This requires focus in old and teachers being up skilled	Again much old and teachers upskilling needed. This takes time and subject expert groups may not have the experience and expertise to deliver the old to their members. Facilitators take time and training to develop as androgogy principles need to be understood	2020-08-10 07:31:07	ANON-FDGN-6XXN-K	2020-08-10 07:31:07

Tertiary education representative	Option C	I would like to see a system that is both suitable for beginners and provides a robust background for advancing students. It turns out that complicated applied systems do neither. They are harder for the beginners and provide a sparse disconnected background for students who advance in science. The new practical standard in Chemistry which involves analysis of organic compounds is an example in point. Students are meant to do tests on real stuff (say from the supermarket shelves). You cannot do realistic tests on most "real" samples because they are complex mixtures. It may sound good, but in practice it is impossible, and teachers are avoiding doing this standard. Knowledge of the fundamentals of science is critical to understanding its	Negatives - it is difficult to appreciate the Nature of Science without some background in science. Students need to have familiarity with the language of the various sciences and how science works before they can step back and see the broader picture. The general topics proposed involve understanding at a much deeper level than would be typical of even the existing specialised science subjects both on the part of the teacher and the student. In a math context, you need to know how to add and subtract, multiply and divide before you do Algebra. You need to have some understanding of the fundamentals of science before you apply them in the complicated ways suggested in the Nature of Science courses. This does not serve as the beginning for a robust pathway to Level 2. It is a social science	The positive of this one is that it has courses where content is emphasized. This means that students get some introduction and background in content before Year 12. It also has the positive in comparison to the five subject course that students are more likely to take the two courses which means that they get exposed to all four sciences in a more meaningful way. The problem with this one is which way should the courses be combined. From a career perspective - with lots of students going into Health Science at some level - Chemistry and Biology are a more natural combination	The positives of this approach is that it offers schools the most flexibility. It offers the most robust pathway to advanced study. It seems to me that the existing Year 11 Science course is already a broad, foundational qualification. The Nature of Science slant can be introduced in the context of content - for example, in chemistry the story of the understanding of atomic structure is a lovely example of how science works. This is done at GCSE level in the UK standards. I am sure that there are equally good ones in the other sciences. The aqueous chemistry in the current course is a good background for acidity etc	2020-08-10 08:55:08	ANON-FDGN-6QWX-N	2020-08-09 10:07:05

Tertiary education representative	Option C	Option C provides students with the most choice and clarity of the subjects being taken. Not only does it include the Nature of Science elements, it also includes discipline specific standards. Although NCEA L1 isn't only about progression to L2 and L3, this is an important aspect for many students. Having some degree of physics-literacy (as well as broader science literacy) is a good aim. With option A it's not at all clear how this literacy will be achieved either in Physics or other specific disciplines. Option C makes it explicit.	As outlined option A was often too broad with insufficient clarity on how standards would be assessed and equitable. It is not clear that it would provide students with adequate preparation for Level 2 and 3. Nor is it clear how any discipline specific subject literacy would be achieved, leaving the risk of some subjects being completely excluded.	This option has some strength in terms of the more discipline specific standards but would still provide students with limited options moving to Levels 2 and 3. The lack of clarity on how different combinations would fit together makes this option less appealing and certain than Option C.	This option seems to have the best balance of including more Nature of Science elements at NCEA level 1 while still giving students clear and guided exposure to discipline specific standards ensuring preparedness for levels 2 and 3. This option also addresses our concerns around options A and B potentially limiting students' access to pathways to the range of tertiary training needed for the future of New Zealand. Option C explicitly allows for students who want to have clear engagement with physics content and to become physics-literate citizens.	2020-08-10 18:35:03	ANON-FDGN-6XX1-P	2020-08-10 18:35:03

Tertiary education representative	Option C	The Geoscience Society of New Zealand encourages Earth and Space Science to be taught in schools as a separate subject at Year 11 and there be the option for a broad array of sciences being taught. Therefore, we prefer Option C over Option B, and definitely both over Option A.	We feel that this option provides too few standards with which to craft an acceptable level of science. While it would provide a simple pathway to future years, we prefer that there are more options. The increasing specialisation at Years 12 and 13 can be dealt with by this but also by all other options.	This option is OK. Certainly better than option 1 but not as effective as option 3. The limiting to three science papers seems arbitrary and we would prefer that teachers have the ability to teach a wider range of science.	This pathway provides teachers with the most choice and is therefore our preferred option. It gives plenty of pathways for future study.	2020-08-10 19:20:26	ANON-FDGN-6Q3Z-K	2020-08-05 22:20:35
Teacher	Option B	More flexible but not to many different options.	To narrow a range of options		To many options and choices	2020-07-01 08:04:26	ANON-FDGN-6Q7P-D	2020-07-01 08:04:26
Teacher	Option B	NOS centered. See all the strands instead of option A Helps make the choices into L7 real and meaningful Creating a breath that A does not offer and not as specialised as C	Positives NOS centered Real connected Science and not siloed subjects Breadth delivered by staff capabilities Negatives Covering all components Assessments? How do they work?	Positives The Physical and Natural divide is superb Negatives Assessments? How do they work? BIOCHEM is a natural connection in higher education	Negatives Too much siloing at a very young age without awareness of what their choices will limit them from experiencing Assessments? How do they work? Positives Prepares specifically for L7 courses	2020-07-01 08:04:33	ANON-FDGN-6Q7N-B	2020-07-01 08:04:33

Teacher	Option B	can still do three sensible externals covering Bio, Physics and Chem and then a choice of a variety of Internals. This helps the students sensibly choose Yr 12 sciences.	way too vague	Student want an external for each of Bio, Physics and Chem, not all mushed together. They can then tell which sciences branches are worth continuing with. We want to get students into Science and keep them choosing those subjects - so they need to know what they are choosing for Yr12 subjects. They also need to be able to pass Externals if they plan to continue at university in these areas. A mixture of Internals is good.		2020-07-01 08:05:31	ANON-FDGN-6Q7S-G	2020-07-01 08:05:31

Teacher	Option C	More options allows for a program that can be tailored to diverse learners.	Way too restrictive.	Still too restricted - doesn't make much sense.	Allows flexibility in school programs. Please provide sufficient support and guidance with plenty of time for schools to make changes. This support should be on-going. You could have local focus groups where school representatives come together to share experiences and ideas.	2020-07-01 08:21:23	ANON-FDGN-6Q7D-1	2020-07-01 08:21:23
Teacher	Option C	More specialised subjects at Level 1 to support Level 2 pure science subjects. More coverage of basic concepts and practical skills is essential in prepararion for higher level studies.	No positives. Overly broad qualification is detrimental for the preparation to face more complex and higher level concepts and skills.	Positive in that it will better prepare students for studies in the pure science subjects.	Positive in that it will better prepare students for studies in the pure science subjects. Students need less time to understand and develop skills needed to perform well in Level 2 pure science subjects, which will lead to the same in Level 3.	2020-07-01 08:42:57	ANON-FDGN-6Q7Y-P	2020-07-01 08:42:57

Teacher	Option C	The more options we have, the more we can tailor our science courses to suit our particular akonga. What suits some schools well will not work well for other schools. We offer 2 science courses at Level 1 - general science (compulsory) and physical science (optional) so going with option A would effectively kill off the physical science option. We tailor that course to suit the needs of akonga and review the content yearly - we sometimes include level 2 standards in there too. The more variety we have to choose from, the better.	These general standards focus almost entirely on nature/approach/skills in science (partially positive), and do not have any compulsory content that needs to be covered (negative). How can we adequately prepare our akonga for the rigour of a level 2 chemistry/physics/biology course when there is no content emphasis at level one? Skills are important, but without content and understanding the skills on their own are rather useless (you have nothing to use your skills on!). This approach should not be finalised, as the vast majority of the science teachers in NZ are not in favour of it.	Better than option A as there is some content requirement and a little more variety. Little variety in standards does not offer schools flexibility which is a negative. It is certainly broader than option A, but I would prefer option C and go as broad as possible. If this option is finalised, I would guess that most schools would use the physics/chem etc standards and not the NOS standards as the better prepare students for level 2 and 3. Some lower ability classes or non-continuing classes might use the NOS standards to give those students some scientific understanding and literacy.	Best option by far. Offers the most variety, which is what a good science course needs to have. Offers good content knowledge and also an emphasis on skills (NOS). It is the broadest and would form a strong foundation for students who continue in Science and those who do not. The ministry and subject expert groups should provide exemplar assessments for each standard, as well as exemplars at each level of achievement. This will be crucial for the implementation of new standards to ensure some form of consistency across the country. Professional Development opportunities	2020-07-01 08:48:37	ANON-FDGN-6Q7U-J	2020-07-01 08:48:37

Teacher	Option C	The only sensible option on offer. The other two have no merit if you are trying to develop Science education in NZ. Considering the distinct lack of science teaching in primary/intermediate schools and that level 3 skills and knowledge is already behind other countries, this is just another way to dumb down Science. We may as well give up now.	There are no positives to this option. there is a large enough jump between level 1 and 2 re subject specific knowledge and skills without doing this. Clearly no teacher, especially a Chemist, was involved in planning this. I am stunned considering other countries have gone down this route and suffered the consequences, such as less students studying the sciences and the dumbing down of the population.	See the response to option A.	This is the only option that has any merit.	2020-07-01 08:50:03	ANON-FDGN-6Q72-F	2020-07-01 08:50:03
Teacher	Option C	To ensure we maintain depth in specialist subject areas leading onto L2 and beyond.	Too broad and lacks depth	Again too broad and lacks depth	It is the best option of the 3 to maintain the depth required in Science looking beyond L1. We run the risk of students in the future who carry on in the Sciences lacking the background knowledge and depth of key scientific concepts.	2020-07-01 09:01:32	ANON-FDGN-6Q73-G	2020-07-01 09:01:32
Teacher	Option C	Because this gives students the best set of options				2020-07-01 09:03:11	ANON-FDGN-6Q7T-H	2020-07-01 09:03:11

Teacher	Option C	This option provides schools with options and flexibility. It will allow us to be more responsive to the needs of our learners, and the resources which the school has available. It will also allow students to observe a broader range of skills and information which will allow them more options if entering the science field in the future.	Positive = very broad Negative = will make the step up into level 2 learning an even bigger task than it already is This does not support coherent and robust pathways into NCEA Level 2 and further study or training. I also believe it does not support the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification.	Positive = very broad Negative = will make the step up into level 2 learning an even bigger task than it already is If this option is to go ahead, Chemistry and Biology fit much more naturally together as do Physics and Earth and Space Science.	This option provides schools with options and flexibility. It will allow us to be more responsive to the needs of our learners, and the resources which the school has available. It will also allow students to observe a broader range of skills and information which will allow them more options if entering the science field in the future. The Ministry should ensure that schools have common resources and are able to access the same material. There should be real life examples of this working in classrooms.	2020-07-01 09:09:19	ANON-FDGN-6Q74-H	2020-07-01 09:09:19

Teacher	Option C	It gives the most freedom to customise courses for the wide variety of students we have in our classes. It also allows teachers to teach a variety of topics from year to year and not become stale with what they are teaching. Currently, we design our courses for the students that are in the class and we give them some ownership of their courses at the start of the year.	This could work but with need a lot of PD and resources to support teachers before it is implemented.		This gives teachers and learners the chance to design their courses to fit their needs.	2020-07-01 09:30:40	ANON-FDGN-6Q7Q-E	2020-07-01 09:30:40
Teacher	Option C	It give us a range to develop a science course based on students abilities and interests.				2020-07-01 09:35:43	ANON-FDGN-6Q76-K	2020-07-01 09:35:43

Teacher	Option C	This gives a greater range and detail of science available for pupils to learn. Pupils wishing to learn 1 or 2 of the sciences at L2 will be disadvantaged in their prerequisite knowledge if they can only do a limited amount of general science. Pupils wishing to be doctors/ engineers etc need to be learning specialised science from at least Y11. In the UK where I have taught for several years most able pupils take triple science where they get 3 separate GCSE's in each of Phy, Chem and Bio. NZ pupils would be but at a large international disadvantage with options A and C. However, I also feel physics should be weighed more towards externals than 50:50 as it is far more	Not nearly enough breath and depth to teach science to prepare pupils for further study industry or teaching Some pupils are bettering suited to a particular science and wouldn't want to have to learn others.	Still not enough breath and depth or choice. would suggest phys / earth science And bio / chem as much more natural combinations for overlap of content and career focus.	I believe this is the best option, and would be the easiest to prepare for as it is the most similar to the current system. However 50% internal does sound too high. Universities prefer rigorous external standards. Science teaching workload would increase (I teach physics and L2 science and Science is far more time consuming with the large number of internals despite being a much smaller class) Externals force pupils to learn content with more long term retention, and make it easier to gauge suitability for future courses.	2020-07-01 09:47:22	ANON-FDGN-6Q77-M	2020-07-01 09:47:22

Teacher	Option C	It at least offers a greater flexibility in the Science field of learning.	This avoids in depth consideration of aspects of Science. Too much emphasis on societal impact as against a strong knowlege base and practical investigational experience. Greater resourcing and opportunity for practical work is essential.	This option reduces the amount of Science knowledge and experience needed as a basis for those wishing to pursue Science based subjects at a more advanced level. Chemistry and Physics mesh well together but too much is going into societal impact as against solid practical scientific experience. Don't turn Science into Social Studies!	The use of a selection of standards gives the opportunity to address the needs of different student groups, abilities and interests. Give teachers a greater say in what they teach.	2020-07-01 09:53:48	ANON-FDGN-6Q7G-4	2020-07-01 09:53:48
Teacher	Option C	best of the worst options				2020-07-01 10:17:35	ANON-FDGN-6Q7V-K	2020-07-01 10:17:35
Teacher	Option A	It will have the flexibility to design courses with Physics, Biology, Chemistry and Earth and Space science in order that students can still choose what to study at L2.	It must have components of all four areas of Physics, Biology, Chemistry and Earth and Space sciences if it is to lead students to choosing these subjects at L2.	I don't think our timetabling will easily allow for Physical and Biological courses as separate entities. I think students may not be able to make those choices at the end of Year 10.	Too many options	2020-07-01 10:45:59	ANON-FDGN-6Q7H-5	2020-07-01 10:45:59

Teacher	Option C	It gives students a better preparation for senior courses (Level 2 or IB) than the other options.				2020-07-01 10:54:29	ANON-FDGN-6Q7X-N	2020-07-01 10:54:29
Teacher	Option C	All science areas covered	Not enough specialised science	Not enough specialised science	Gives students more choice	2020-07-01 11:02:35	ANON-FDGN-6Q7E-2	2020-07-01 11:02:35
Teacher	Option C	The 4 "Nature of Science" topics are very much social science with a science flavour sprinkled on top. They incorporate very little science content and a year in which they are the only assessment is likely to set the students up for failure in the future as they will start further behind than they do at the moment. Being able to take a mix of the the NoS standards and Science Content standards such as the physics, biology, earth science and chemistry would give the students a much more well rounded year in terms of scientific learning. Options B and C are similar, C just have more choice.	Positive Nature of science is being recognised as a legitimate topic. Negatives The standards are currently just social science with a bit of science flavour. The standards seem very unworkable They are all effectively in the style of internal assessments. Exams have drawbacks but they are also something students should be able to cope with.	Positives Courses can be developed that assess and give importance to NoS and also to scientific knowledge. Students will not be disadvantaged in future years.	Positives Courses can be developed that assess and give importance to NoS and also to scientific knowledge. Students will not be disadvantaged in future years. Largest range of options	2020-07-01 11:06:34	ANON-FDGN-6Q7B-Y	2020-07-01 11:06:34

Teacher	Option B	It provides the best balance for students of all capabilities.	Positives - easy to administer negatives - too broad brush. Not enough depth possible, especially fo brighter students. No, it does not. Convince them that it is worth while.	Positives - more scope for challenges for more able students. Negatives - can't think of any. Definitely. Define in detail what is and what is not included in this curriculum. i.e. be specific. Physics and Earth Science, Chemistry and Biology	Positives - it gives the broadest range for student choice for a comprehensive Science education. Negatives - would be a nightmare to administer, manage and design in the absence of definitive guidance by way of content. Yes, definitely. Design not only the framework but also the flesh on the bones.	2020-07-01 11:11:19	ANON-FDGN-6Q7Z-Q	2020-07-01 11:11:19

Teacher	Option B	Gives students choice to specialise if they want to but without too much choice of Option C.	I think that the theoryu behind OPTION A is sound - however this typ of change needs to be led by the Ministry - we need to have community support with this type of change to curriculum that will then feed into pedagogy. The way it is being done seems to be the tail wagging the dog - we are already feeling burn out! An example of being prepared for this change, along with community support, would be PL in Matauranga Maori - this will need to be WELL resourced first.			2020-07-01 11:18:15	ANON-FDGN-6Q7A-X	2020-07-01 11:18:15
Teacher	Option C	Preparation / confidence for level 2 external exams		2.		2020-07-01 11:18:07	ANON-FDGN-6Q7F-3	2020-07-01 11:18:07

Teacher	Option A	Keep things simple and have transformative change. No need to have separate Science subjects being assessed at Level 1 and options B and C just encourage the teaching and assessing of content and concepts again as opposed to Nature of Science ideas.	Positives- Keeping L1 Science assessment simple and focussed. All students doing identical standards. Everyone working to a common goal. Easier to manage fewer standards Negatives- I can't see many. Lower ability students may struggle with literacy demands and NOS concepts require more critical thinking Yes option A does meet need for broader foundational qualification Provide a range of teaching and assessment resources	Don't like it/ No rationale for combining Bio and ESS really	This is too similar to what we have currently and will lead to the continuation of content being assessed as opposed to important NOS ideas	2020-07-01 11:18:41	ANON-FDGN-6Q75-J	2020-07-01 11:18:41
Teacher	Option C	Most flexibility.				2020-07-01 11:24:07	ANON-FDGN-6Q71-E	2020-07-01 11:24:07

Teacher	Option C	Students need to learn the specifics of particular sciences. "Nature of science" courses are often far too vague and lacking in content. They become the "easy" option for students to take, rather than the more rigorous specific subjects. NCEA Level 1 is already far too easy and light on content, which means that students are poorly prepared for Level 2 Physics. If anything, the Level 1 course should have MORE specific content knowledge, rather than less, because by the time they start Level 2, they are already behind which what they should really know, in comparison to international standards.	Nature of Science is far too vague and open ended. Students will end up learning a random selecton of stuff, and will not be properly prepared for NCEA Level 2 & 3. If this is the route that is taken, courses still need to be designed with Level 2 & 3 in mind.	This is better than option A and is similar to what is done at my school at the moment. We have one phys/chem class and one bio/chem class. This is already seen by some parents as limiting student's options and leaves them poorly prepared for Level 2.	Earth & Space science could be a very interesting course and one that might attract students who might otherwise not take a science. The "nature of science" is likely to be chosen by less academic students. The physics, chemistry & biology subjects will continue to be chosen by academic students who are motivated to succeed.	2020-07-01 11:24:46	ANON-FDGN-6Q7C-Z	2020-07-01 11:24:46
Teacher	Option C					2020-07-01 11:26:28	ANON-FDGN-6Q7W-M	2020-07-01 11:26:28

Teacher	Option C			we need subject specialists to teach each of the 3 sciences. I have come across several teachers who are not confident in teaching those sciences in which they haven't specialized as they find the content challenging for themselves.		2020-07-01 11:27:27	ANON-FDGN-6Q7M-A	2020-07-01 11:27:27

Teacher	Option C	Allows for flexibility of course design to suit varying parent and student specialty subjects choices	This is a terrible idea. It will lead to very poor outcomes in Level 2 specialty subjects. It is far too restrictive. Earth Space Science is a waste of time at this stage of Science learning. Focus should be on improving Chem, Phy and Bio knowledge and understanding, not just 'Science' and leave Earth Space content for juniors in Year 9 and 10.	This is a terrible idea. It will lead to very poor outcomes in Level 2 specialty subjects. It is far too restrictive. Earth Space Science is a waste of time at this stage of Science learning. Focus should be on improving Chem, Phy and Bio knowledge and understanding, not just 'Science' and leave Earth Space content for juniors in Year 9 and 10.	It is still not broad enough in my opinion. Focus should be on improving Chem, Phy and Bio knowledge and understanding, not just 'Science' and leave Earth Space content for juniors in Year 9 and 10. Having the 50% internal demand is too constricting. Some students prefer to choose to sit more externals, but this limited set of options does not allow for this. Disappointing for the future of Science education in NZ.	2020-07-01 11:28:26	ANON-FDGN-6Q7R-F	2020-07-01 11:28:26
Teacher	Option C	The jump to L2 is difficult enough for students without decreasing the specialisation which makes the jump to their specialised choice in Y12 even more difficult then currently.				2020-07-01 11:31:14	ANON-FDGN-6QPP-6	2020-07-01 11:31:14

Teacher	Option A	Part of the NCEA review was people wanting to have a clearer idea of what each subject meant. This way all Y11 students would have covered the same ground: Nature of science ideas which you need to be a good citizen. Options B and C provide more support for later specialisation, that is not really needed at Y11. This would mostly be used (like alternative qualifications such as CE or IB) as a way for "grammar" and private schools to differentiate themselves. But I think the reality is that moving to option A would likely see the demise of science at NCEA level 1 at many schools.	The present structure of this course looks like more work and stress for teachers and students. Flexibility offers the possibility of engaging contexts and so on. But the reality of that depends on teacher workload. Preparing completely new units for a whole year group at once will be a massive task, and bedding in new standards that are externally marked will be a very tricky task - stressful for teachers and students. The complete emphasis on NOS suggests that there is no place left for subject knowledge. And yet how can citizens assess the merits of science if they have no base of knowledge to compare it against.			2020-07-01 11:31:46	ANON-FDGN-6QPN-4	2020-07-01 11:31:46

Teacher	Option C	More flexibility for the students. Greater opportunity for diversity of contextual teaching. Science focused students can participate in more than one science and can have the opportunity to cover all sciences.	Pro: Con: Only one context per topic, not easy to apply all sciences to one concept, less diversity of learning Possible that the project-based learning excludes some topics that would be essential for those students carrying on with the sciences and would result in more foundational skills and knowledge falling into the Level 2 course.	Pro: more options Con: although better than option A it does not give as much flexibility as option C The two subject matrices of Physical Sciences and Natural Sciences are a good combination.	Pro: Flexibility, diversity of subject options for the students Con: This is a good option to build foundational science knowledge and cater for the students who want to continue with sciences into L2 and beyond.	2020-07-01 11:31:59	ANON-FDGN-6QPS-9	2020-07-01 11:31:59
Teacher	Option C	Gives the best range for students to trial before choosing separate Science specialist courses. Allows for students who excel in the Sciences to gain more credits than some other options	This is what we do in Year 9 and 10	Students can miss a subject and the background knowledge in a specialist area and then find it too difficult to pick up later. They are also less likely to know what might be required for future careers and study at Year 11. Students will be less likely to choose 2 or 3 Sciences when there are so many other subject options.	Schools are able to select from the seven criteria to build a course that matches their students.	2020-07-01 11:35:49	ANON-FDGN-6QPD-T	2020-07-01 11:35:49

Teacher	Option C	It is the only way to properly prepare our students for specialist science subjects at levels 2 and 3. The draft SEG recommendations removed all external examinations and required content knowledge.	This is a disaster, that our College would not teach. We would make our own course rather than teach this. It ignores all parts of the curriculum outside of the nature of science. There are no positives here. This qualification would become an international joke. This is not a broad qualification for science as the science has been stripped out of it. There is nothing the SEG's or the Ministry could do to fix this option.	This is a ham-fisted attempt at compromise that does not meet the needs of our learners. A foundation needs to teach students content that is useful across all future science subjects that they take. This treats Physics and Chemistry like one subject, when they have too much content to be combined like that. This approach cannot be fixed - schools would have to abandon this and do Cambridge or their own course that prepares students for the rigor of NCEA levels 2 and 3. There are no satisfactory combinations of entirely distinct subjects into one	This is the only approach that makes any sense. There isn't enough information here to figure out if the subjects are grouped into logical standards - which topics would be internals and which would be externals? This meets the 7 criteria far better than the other options as schools can build science courses that meet the needs of their students. The current science subject expert group should be disbanded if you want schools to teach science effectively in NZ - their recommended option A is a disaster in waiting that would not survive very long	2020-07-01 11:36:15	ANON-FDGN-6QPY-F	2020-07-01 11:36:15

Teacher	Option C	Concern with taking specialist subject knowledge out of science. Students need knowledge in order to be able to critically think and at the moment there is a lot of ignorance about science. Over the years there has been a lot of content knowledge removed form Y11 Science which was particularly useful and relevant	Its woolly		Looks like it has more science in it	2020-07-01 11:38:20	ANON-FDGN-6QP2-8	2020-07-01 11:38:20
Teacher	Option C					2020-07-01 11:48:53	ANON-FDGN-6QPT-A	2020-07-01 11:48:53
Teacher	Option C	The step up to single sciences at Level 2 in Chemistry leaves many students feeling totally out of their depth. They have very little knowledge about Chemistry to approach the topics in the Internal and External Standards in Level 2 Thus Chemistry becomes a too hard subject and many will not go on to Level 3, where the challenges are even greater				2020-07-01 11:50:47	ANON-FDGN-6QP4-A	2020-07-01 11:50:47

Teacher	Option C	It matches the current system that allows schools and departments to tailor courses to match the students in front of them.	Too vague. Too open. The specialisation at level 2 will be too dramatic - the students will not have enough "background" to be able to cope with level 2 and 3...meaning they will be less successful. Where does that lead? What is the point of this approach? This just "dumbs down" the system. Level 1 will have no significance...schools will just skip it and move into a 2 year level 2 course. Which will be essentially the same as the current. This is just purely nonsensical. I hope that this approach is never tabled again as it does a disservice to the years of hard work the sector has put in to developing rigorous assessments that give the most information to students. (and employers).	This is a half way point - why bother? Are you just trying to "please" the sector? This still limits students "background" knowledge.	This is most like the current system - it gives the schools the widest range of standards to pick from. Level 1 should be the point that the "basic skills/knowledge/understanding" to function as a NZ citizen should be tested. The reason for this, is that we have the ability to leave school at 16. So the questions should be: "what does a NZ citizen need, so that they can function in our society?" The above proposals (option A and B) fails to address this question in a number of facets.	2020-07-01 11:56:14	ANON-FDGN-6QPJ-Z	2020-07-01 11:56:14

Teacher	Option B	Some new options will be fine, but I think that 4 new ones will be thinly used - better to concentrate on 2 new ones and see how they go. AND - it is essential to maintain a focus on all the current core Science topics/options. Does not 'broaden' the course at all - merely focusses it on philosophical aspects of science.	Neg - Removes the content requirements required for development into Level 2 Pos - some new options on the philosophy of science, etc. Criteria? Broader? I don't think that including more philosophy of science stuff is automatically 'broader'. It actually removes the foundational content, potentially narrowing the concepts covered overall. The new standards MAY broaden the science content if they are ADDED to the existing course. Extra PLD would be required, but I would still concentrate on science content, (with internally generated assessment, and extra work on my part - NOT keen) and only use the new standards with the few capable students with good literacy skills.	Best of both worlds - content plus philosophy AND retains the FLEXIBILITY we currently have in the science course. Easier to tailor/differentiate the course to the group/individuals that we are tasked to prepare for Level 2. Possibly Physics+Earth Science and Bio+Chem would be better options?	A reasonable option - as long we retain the flexibility of the current NCEA system at Level 1. Obviously we would need the PLD for orientation, resourcing & teaching the new General Science stream	2020-07-01 11:57:40	ANON-FDGN-6QPQ-7	2020-07-01 11:57:40

Teacher	Option C	It is the best option to ensure our students get the best education	There are no positives. It will not be possible to teach Science effectively, it even makes it hard for our low ability students as their is far too much emphasis on writing/written reports	It is better, its closer to satisfying the criteria I would suggest Bio/Chem and Physics/EASS	this is the best option It meets the criteria The MOE and expert groups would have to do the least to ensure all schools teach Science effectively	2020-07-01 12:05:05	ANON-FDGN-6Q7K-8	2020-07-01 11:14:39

Teacher	Option B	To be honest, I don't mind C either, but I think B is preferred. I do like the idea of the general science course, as it gives schools the options to make a wide range of courses. However I think it would do a great disservice to students whose pathway involves academic science - I think there still needs to be a pathway for future Scientists, Doctors and Engineers to take a course that prepares them for senior science subjects which , in themselves, I believe need to maintain a high level of prescribed content. While I agree that focusing assessment on NoS doesn't mean you can't teach content, I do think that you also can't analyse and think critically in a subject area without a sound content knowledge. An assessment programme that neglects the need for any specific content				2020-07-01 12:11:24	ANON-FDGN-6QP7-D	2020-07-01 12:11:24
Teacher	Option C	Helps provide structure for teachers and that NoS (nature of science) strands are best taught contextually	Too general			2020-07-01 12:14:05	ANON-FDGN-6QPG-W	2020-07-01 12:14:05

Teacher	Option C	Option C gives the flexibility needed to create courses suitable for a range of students who looking forward may choose a variety of pathways in Year 12 and 13.	I can see no positives in Option A. The huge negative is that it is not preparing students with the wide range of content knowledge needed to go on to higher levels in the specialised Science areas at Level 2 and Level 3. Students do not always have their pathways clearly mapped out by Year 11. This will result in some students not being able to pursue subjects at Level 2 and 3 which will effectively limit their career choices. I see Maori and Pasifika students being disproportionately affected by this "dumbing down" approach. (I am currently a Head of Science at a decile 5 school but spent 15 years teaching in a largely Pasifika decile 3 school)	This is a better option than Option A. Allows the specific content knowledge to facilitate progression to Level 2 and 3 Specialist Science subjects with a base of knowledge. The teaching of Science effectively requires the teaching of the Nature of Science, but in the framework of content knowledge. I believe the vast majority of Science teachers do this in our everyday Science teaching at present as it is the most effective way of teaching Science concepts anyway. In terms of the framework and combination of subjects it is very hard to compartmentalise one as being more suited to another - Astronomy would	This option provides the flexibility for schools to create courses suitable for all students. It allows greater choice for students who have decided to follow a particular pathway while still providing a broad based foundational qualification. The vast majority of teachers would still be teaching the Nature of Science effectively within the various subject areas as this will give students the best learning opportunities and deepen their understanding. The Ministry could be supporting this by communicating with schools and HOD's to reinforce best practice and providing professional development opportunities on	2020-07-01 12:15:44	ANON-FDGN-6QPV-C	2020-07-01 12:15:44

Teacher	Option B	I would value more focus on the NOS strand of the curriculum than where we currently are, but feel a shift to only NOS assessments (as outlined in Option A) will be too hard for teachers/schools to implement effectively in a short period of time. Developing an effective and relevant local curriculum, though important, takes time to implement. For this reason I believe Option B is better than A as it allows teachers/schools time to develop their units/tasks/assessments in a rich and sustainable way. I feel that Option C would not encourage teachers/schools to focus more the the NOS strand of the curriculum. The NOS strand is rich with transferable science skills, that are relevant to all of our learners and should be focusing	Positives: Strong focus on NOS strand. Negatives: Lots of time required to develop effective teaching and learning activities in our local contexts. Not doing this well will have a negative impact on the inclusion of more NOS in all levels of science. Seven Criteria: This Option A has the most potential for meeting the 7 criteria but I feel the magnitude of the task will be too great over a short period of time possible leading to weak outcomes. I especially feel this with regards to the following points: 4. The extent the subject contributes to supporting schools to create well designed and coherent local curricula, which support pathways for individual learners. 5. Demand for a subject and the sector's	Positives: Still has focus on NOS Allows more time to shift focus May make the "coherent and robust pathways into NCEA Level 2" more clear to some teachers (even though I believe a NOS focus should still encourage a high level of contextual understanding) Negatives: Possible for some schools to only focus on context strands (but this would be hard) Seven Criteria: I think it supports these well and I believe will make the transition more manageable and less overwhelming to teachers/schools. See my comment above (positives).	Positives: NOS strand still an option Negatives: It is too easy for teachers/schools to keep doing what they are currently doing Seven Criteria: This options provides teachers/schools a way to not address the seven criteria at all. Ministry and Subject Expert Groups: The same work would be required as in Option A, but it may not be used by all teacher/schools. This may mean this is less investment in developing robust exemplars/templates/resources and lead to poorly implemented NOS programmes and	2020-07-01 12:17:52	ANON-FDGN-6QP6-C	2020-07-01 12:10:32

Teacher	Option C	More options for students in subject specific disciplines with less "dumbing" down of the sciences. Would be easier to tailor courses to student needs as we are required to do.			It is not much of a change from what we currently have, just the 50/50 ratio really. The examinations are important (there is little trust of internal assessment) Students who will progress into the sciences in the senior school need a good science grounding early on.	2020-07-01 12:17:50	ANON-FDGN-6QPH-X	2020-07-01 12:17:50
Teacher	Option A	Greater opportunities due to greater flexibility.	Students who come from a variety of schools will have various experiences studying science so there will be a chance to cater for a variety of needs. Students coming from feeder schools will have had lots of opportunities to study scientific contexts but may not have conducted scientific thought processes.			2020-07-01 12:29:39	ANON-FDGN-6QPE-U	2020-07-01 12:27:43

Teacher	Option B	It gives teachers more flexibility to design courses, while keeping the number of standards to a level where it's possible to give good support and advice for teachers delivering those standards.	The positives are that there are less standards, so schools will get more support to teach the standards and be better able to share resources, reducing teacher workload. Schools will teach the same standards, meaning that teachers who move schools will have a lower workload adapting to their new school. ITEs will be able to give more targeted support to teach student teachers about level 1 science standards. There is less ability for schools to have specialized/streamed science classes at year 11, which is positive as streaming and specializing early has negative outcomes for all students. There is not much chance to assess key concepts in chem and physics	It is a good compromise between options A and C. It allows makes it easier for teachers to include subject-specific content for physics/chem/bio/ESS to support students taking level 2 and 3 sciences. It has a reasonable number of standards (some choice for schools but not too many).	The same problems that we currently have: There are too many standards - they will not all be written well or well-supported by NZQA. There will not be good resources for all of them. There is too much choice for schools, so there will be very little consistency between school science programs. Schools are unlikely to be given good support to make good decisions about which standards to use. Having so many standards may lead schools to go for quantity over quality and increase the number of credits available in their science courses	2020-07-01 12:30:46	ANON-FDGN-6QPB-R	2020-07-01 12:30:46

Teacher	Option C	More standards to choose from when making a course	Too vague. Does not cover enough in depth content of other strands of curriculum	Not much negatives about B but because it is similar to C and has 8 standards less than C my choice will go for the one with most options.	More options	2020-07-01 12:41:23	ANON-FDGN-6QPZ-G	2020-07-01 12:41:23

Teacher	Option C	It provides the most flexibility to adapt courses for students abilities, capabilities and interests.	Negatives: students who struggle with exams are disadvantaged. No flexibility to adapt course. This means criteria four is not met as individual learners may struggle to succeed as there is limited pathways available. Positives: clear cut for one academic science course at level one.	Positives: has flexibility to allow for further courses for students and the potential to design an internal only course for students who struggle with formal examinations / external assessment. It is better aligned to all seven criteria. Negatives: limited range of standards available for an internally assessed science course.	Positives: meets seven criteria, allows for full flexibility on designing an internally assessed course. Enables schools to design courses for student interest (biology, chemistry, physics). Students would enjoy being able to choose the course that best suits them, which increases engagement with the subject and desire to succeed. Negatives: Work for the Ministry & Subject Expert Groups to create standards is increased to a similar level as finding content to support current standards for current teachers. More exemplars to be created.	2020-07-01 12:46:19	ANON-FDGN-6QPK-1	2020-07-01 12:46:19

Teacher	Option C	I am in charge of the science faculty. We offer level 2 and 3 Chemistry Physics and Biology. Option c appears the only option that is focused on preparing students for these courses	Positives are that it attempts to relate science to the real world around us. Negatives is that it does not appear to prepare students for level 2 Sciences. The vision of level 1 science does not have a level 2 or 3 Science to flow into so on its own it appears rather pointless. Levels 2 and 3 need to be developed before this opinion can be adopted	I have not had much detail about this option. Possibly more core skills involved. I am not sure why we need to have a halfway position. This appears to be half a job but without much detail. I cannot support an idea like this without more detail.	This appears to be very similar to the current system. At the present time schools have learnt to use the current system to prepare students for levels 2 and 3. Until we have levels 2 and 3 fully developed I cannot see how we can expect to change level 1	2020-07-01 12:49:35	ANON-FDGN-6QPF-V	2020-07-01 12:49:35
Teacher	Option C	It allows flexibility around designing courses for kids. You can tailor courses to meet student needs. contains all the 4 areas allows teachers to address learning in a specific area by changing the activity or standard.	its way too open and can lead to confusion and mish-mash when designing courses that also need to address UE criteria.	not enough flexibility and does not take student learning needs or interests into account.	It allows flexibility around designing courses for kids. You can tailor courses to meet student needs. contains all the 4 areas allows teachers to address learning in a specific area by changing the activity or standard.	2020-07-01 12:50:49	ANON-FDGN-6QPA-Q	2020-07-01 12:50:49

Teacher	Option C	Greater flexibility for delivering content to support students who are intent on a career in Sciences (one of the goals of our current curriculum). Science is a subject that is increasingly allocated more time overseas, at Level 1 equivalent for the teaching of science content, as it is seen as a vitally important component needed to prepare citizens for a world where exponential growth in technology is a reality. Non science specialists will still need to have a strong grounding in this field in order to participate in an informed way in ethical debates about the implementation of new technologies (e.g. Gene Drive, transgenesis etc). Level 1 could be the last chance to provide this education for many.			See comment above	2020-07-01 12:51:01	ANON-FDGN-6QP5-B	2020-07-01 12:51:01

Teacher	Option C	The most opportunities for differentiation.	Positives: Possibility for flexibility in internals maybe? Negatives: Everyone has to do externals, no horticulture or marine studies, limited opportunities for specialisation. I do not feel that option A meets the 7 criteria. A system where all students must do 50:50 internals and externals is not inclusive of individuals who do not thrive under exam conditions. Cutting down to four standards reduces opportunities for cross-curricula projects. It also limits our ability to align learning with students' interests which is a big part of being culturally responsive. Furthermore, having horticulture and marine studies as options has helped support students to stay in science at year 11, particularly maori students at my school.	Positives: More standards to choose from than option A Negatives: Students cannot choose three internals or three externals to equally cover Bio, Chem and Physics. Some students are already planning at year 11 where they want to be when they finish school. Those high achievers often want to prepare for what universities expect of them, which is often physics, Chemistry and Biology. Students want to prepare for this right from year 10 and could feel disadvantaged by only being allowed to choose 2 externals. Again I don't believe option B meets the 7 criteria. If all students must do 2 internals and 2	Positives: More standards to choose from than options A & B Negatives: Again, students with big goals in science will feel limited in their pathways and students who do not like traditional science will feel forced to study things they aren't interested in. I would think that in the interest of moving in a direction of inclusivity and cultural safety the push would be for more options and not less. More project based internals and pathways focus. Aiming to "support the crown's obligations" is not good enough for kiwi kids.	2020-07-01 12:58:32	ANON-FDGN-6QP1-7	2020-07-01 12:58:32
Teacher	Option C	It gives more detail and allows a variety of different course options in science.				2020-07-01 13:02:07	ANON-FDGN-6QPM-3	2020-07-01 13:02:07

Teacher	Option C	more flexibility to tailor courses to student's needs! Students get to choose which best suits them rather than having one choice forced on them.	Positives - very little assessment - this is also a negative, how do you know a child is prepared for chosen L2 subjects? ie the standards offered at Level 2 Biology etc Is not flexible enough to meet students at very different abilities	Physics and Earth Science would fit better together as would Bio and Chem - still not enough flexibility though	Some schools may be tempted to offer too many standards in one course but the fact that this approach gives schools far more options to tailor their courses to meet the needs of the students at THAT school vastly outweighs this to assist the schools to teach Science effectively, ensure ALL schools have the SAME access to resources and trust the teachers KNOW THEIR OWN LEARNERS well enough to tailor courses to them	2020-07-01 13:04:34	ANON-FDGN-6QPR-8	2020-07-01 13:04:34

Teacher	Option C	To give schools more options for deciding whether they want to internally of externally assess a particular strand. Option be lumps physics and chem together and if I have understood paragraphs - has to be internal, other external...so could end up with course with either no chem or no physics internals. I also like the sanctity of acknowledging the four strands and their content individually.	Too broad, would not prepare students for Level 2. Feels like a dumbing down of science curriculum to a one size fits all. Opens up courses to non specialists teaching subject matter they are unsure of.	Slightly better option.	Most robust of the three. Still allows for planning to avoid overlap, acknowledges the separate fields, which do share contextual links, but need strong curriculum knowledge to be delivered well.	2020-07-01 13:07:38	ANON-FDGN-6QP8-E	2020-07-01 13:07:38

Teacher	Option C	It will give better feel for the science for y12	This opt C is the only one with the positives and will set the prerequisites for more specialties. If we are going with other choices then that is so unfair on the academic students and teachers. Then you do not require science teacher anyone has the basics to deal with this. The students will be better of learning science on their own or with their parents.		This opt C is the only one with the positives and will set the prerequisites for more specialties. If we are going with other choices then that is so unfair on the academic students and teachers. Then you do not require science teacher anyone has the basics to deal with this. The students will be better of learning science on their own or with their parents.	2020-07-01 13:10:00	ANON-FDGN-6QFP-V	2020-07-01 13:10:00

Teacher	Option B	Covers all the areas of science. Overall understanding of Science	Doesn't given in depth knowledge into any of the specialized subjects. they will find Yr 12 course challenging Good for the less passionate students. Not good for students who want to do Engineering and Medicine	to some extent It meets the seven criteria Gives a basic overall understanding of all the Science subjects also gives opportunity to students who want to specialize on certain Science subjects. This will help students planning to do Engineering and Medicine	Do not believe it meets the seven criteria	2020-07-01 13:12:23	ANON-FDGN-6QPC-S	2020-07-01 12:59:16

Teacher	Option C	A comprehensive and in depth education in Science is an important cornerstone for all young people. It is as important as Maths and English in equipping students with the necessary intellectual tools to understand and navigate the world they are growing up in. If we do not attempt to equip students with the scientific knowledge and critical thinking skills, needed in our every changing world, we risk sending young people out into a world, where they have the potential to make ill informed choices. This would be an unfair burden to place on them, particularly when they are facing more global and environmental issues than any other generation. We owe it to them, to provide the opportunity to be scientifically literate. Don't you think??????????	Positives - scientifically literate young people in the world making informed decisions about the world Negative - I am biased, can't think of any Most definitely meets the criteria - this option would provide a robust foundation for those going on to level 2 and the jump would not be so huge. Science is also an incredibly broad subject with a plethora of knowledge and skills. If done well, it can only add to the breadth of the curriculum. To teach effectively - resources - to ensure skills are developed (alongside knowledge), Clear standards and effective schemes of learning that support progress Well trained teachers relevant science		Positives - scientifically literate young people in the world making informed decisions about the world Negative - I am biased, can't think of any Most definitely meets the criteria - this option would provide a robust foundation for those going on to level 2 and the jump would not be so huge. Science is also an incredibly broad subject with a plethora of knowledge and skills. If done well, it can only add to the breadth of the curriculum. To teach effectively - resources - to ensure skills are developed (alongside knowledge), Clear	2020-07-01 13:21:35	ANON-FDGN-6QFN-T	2020-07-01 13:21:35
Teacher	Option C	I believe that option C provides the greatest flexibility to tailor towards the students' capabilities.				2020-07-01 13:27:42	ANON-FDGN-6QFS-Y	2020-07-01 13:27:42

Teacher	Option C	This allows the most flexibility when developing courses based on the needs and interests of our students, giving them the best platform for studying Sciences in the future.				2020-07-01 13:40:35	ANON-FDGN-6QFD-G	2020-07-01 13:40:35

Teacher	Option C	More flexibility and more clarity of focus on science knowledge learning to use as a base for thought and deep learning.	I was very concerned at this proposal when it originally came out and my view has not changed. It does not meet the criteria of making NCEA level 1 more accessible because the empahsis is on the process of science without the simple factual learning that most beginner science learners enjoy. The danger is that bad science is rewarded and that students who aren't good at extended investigation/report writing are penalised.	Without know more about the nature of the standards and the requirements of the assessments it is difficult to comment. Whatever is proposed, I'm sure that, unable to reinvent the wheel, teachers will continue with the same sort of teaching they have done before. There needs to be a development phase - ideally teachers and writers will be seconded to develop relevant learning materials which focus on 21st century science and provide background learning of key areas of science that underpin understanding of contemporary issues.	This remains my favoured option which allows clear student choice and flexibility - more like strong points of the system we have now. As for the other options, I'm sure that, unable to reinvent the wheel, teachers will continue with the same sort of teaching they have done before. There needs to be a development phase - ideally teachers and writers will be seconded to develop relevant learning materials which focus on 21st century science and provide background learning of key areas of science that underpin understanding of contemporary issues.	2020-07-01 13:56:01	ANON-FDGN-6QFY-5	2020-07-01 13:56:01
Teacher	Option C	Provides flexibility for schools to cater to the interests and academic needs of their students.				2020-07-01 13:58:05	ANON-FDGN-6QFU-1	2020-07-01 13:58:05
Teacher	Option B	Just enough standards				2020-07-01 14:13:47	ANON-FDGN-6QF2-X	2020-07-01 14:13:47

Teacher	Option C	Maximum flexibility for creation of courses and meeting of student aspirations.	Would lend itself to generalised knowledge and more skills over content knowlege	Flexibility and maintaining the general nature of the level.	Allows schools to tailor courses. Can allow for students to specialise earlier if community desires it. Better able to meet diverse needs.	2020-07-01 14:30:54	ANON-FDGN-6QF3-Y	2020-07-01 14:30:54

Teacher	Option A	This option gives a standard base across the country for all students before branching into specialist subjects at Level 2. The other two options allow for large enough schools to offer some students enhanced specialist subject learning not available to students in smaller schools.	Negatives I am still concerned that the standards require too high a level of literacy for Level 1 students. Very clever science students who have a good understanding of the concepts in science may be put off continuing in the subject because of the literacy needs. I am not convinced that the assessments suggested will actually measure a students understanding of science and science ideas. Positives Fewer standards to choose from so better able to collaborate with all teachers across the country. Allows for some flexibility of learning programme. Ministry needs to provide a range of exemplars and very clear guidance on how the standards will be graded. There needs to be very clear distinction between levels of			2020-07-01 14:31:59	ANON-FDGN-6QFT-Z	2020-07-01 14:31:59

Teacher	Option B	Students have opportunity to learn Biology, Physics and Chemistry standards- learn the basics -they can make good choices for level 2.	Does not offer students a wide base in level one qualification.	Offers students a wide base in level one qualification. Meets the 7 criteria/ broad foundation qualification- students can use the learning to make informed decision for level 2 choices.		2020-07-01 14:32:27	ANON-FDGN-6QF4-Z	2020-07-01 14:32:27

Teacher	Option C	More robust options leading to senior science courses. Science is sequential learning of core content and skills - not just skills (option A).	Only meets option 1 of the criteria. If this was implemented then our school would not assess NCEA Level 1 in sciences. We would remain focused on delivering foundational content and skills for the senior sciences. Society needs more people to embrace Science for the future and reducing to a set of skills and non relevant essays will reduce criteria 7 - NCEA in Science will not be seen as credible at all.	This meets criteria 2 and 4. It may allow opportunites to meet criterion 6. This option would allow more fundamental concepts in Science to be delivered and assessed. I do not think that Biology and ESS can be lumped together however. Physics and Chem can but Biology is very separate to ESS hence our support of option C instead.	This option meets criteria 2, 3, 4 and 7. It may be able to meet 5 and 6 also depending on the options available within the standard. Again we need scientists and to do this we need to be able to deliver and assess foundational concepts in science to best prepare learners for L2 and L3. This option also allows variety to offer courses in specialist subjects if school timetables allow. We offer half year courses in specialist sciences to give learners a more focused pathway to senior L2 and L3. Past results show that learners in these L1 specialist courses are best prepared and obtain excellences in L2 and L3	2020-07-01 14:45:41	ANON-FDGN-6QFQ-W	2020-07-01 14:45:41
Teacher	Option B	Cover a range of ability of our students Cater to their career options.		Not sure if we can choose individual standards but would like that option.		2020-07-01 14:52:46	ANON-FDGN-6QF6-2	2020-07-01 14:52:46

Teacher	Option C	more flexibility and options				2020-07-01 15:05:43	ANON-FDGN-6QFG-K	2020-07-01 15:05:43
Teacher	Option A	Because it guarantees that no matter what school a student attends they will be assessed on all 4 strands of science with no weighting on any particular science. It promotes earth and space as a science strand, which is often left out of school programmes. This fits well with a general science model. It still includes the 50:50 internal: external model that I think is great. It leaves room for creativity with an open ended nature of science standard. Also 4 standards is a good number to complete within a year.	Ensure that it is very clear that all 4 strands of science are included in the standard. Ensure that there are core skills/ literacy/ knowledge/ big ideas that must be taught. Don't let teachers or HOD's mis interpret this as a model where that can exclude a science if they want.	I don't like this model, I think it leaves gaps in the science that may be taught.	This would be my second choice, because it guarantees that no matter what school a student attends they will be assessed on all 4 strands of science with no weighting on any particular science. It promotes earth and space as a science strand, which is often left out of school programmes. This fits well with a general science model. It still includes the 50:50 internal: external model that I think is great. It leaves room for creativity with an open ended nature of science standard. Also 5 standards is a good number to complete within a year.	2020-07-01 15:10:24	ANON-FDGN-6QFV-2	2020-07-01 15:10:24

Teacher	Option C	This is the best option for teaching science content/skills specific to Y12 & Y13 courses. Option A and B would certainly limit the programs schools can offer.	This option does not support "coherent and robust pathway into NCEA Level 2 and further study or training". A general Science program will not give our school the ability to offer a specific science programs to suit our students differing needs. I feel the overall goal of option A is a good idea (bringing in the SC's and Nature of Science) however, for Year 11 students they need to know basics for each strand of Science.	This option feels like each subject is being forced to work with another subject, but no linking between all subjects. Option C appears to be the best option as it gives each individual school the ability to create their own courses specific to the students in from of them.	Best option for schools to create their own learning programs specific to their learners. This allows for the most flexibility which will mean science can be an option all students can enjoy and achieve success in.	2020-07-01 15:53:17	ANON-FDGN-6QFB-E	2020-07-01 15:53:17

Teacher	Option C	It is not clear what the externally assessed standards would look like but this option would appear to offer the chance of having some standard content. It also provides some specialization that students at my school seem to want - most sign up for specific Physics, Chemistry or Biology courses and few sign up for the general science course.	I cannot think of any real positives. The negative of having NO STANDARD CONTENT is so large a negative that it makes that option unacceptable in my mind. With respect to the seven criteria. I think it fails criteria one as the content covered is not specified so passing level 1 would give no idea of what the students have learned to prepare them for level 2 It fails criteria two as without content specified, you cannot know what overlap there has been. It fails criteria three as without content specified there is not a robust pathway to anything. It can pass criteria four but it becomes meaningless as passing level one would not mean anything. I have no idea what the student who passed level 1 from option A has learned to prepare them for anything. I	Advantage is that it offers a little bit of variety and a possibility of having some standard content. Disadvantage is that our students want to combine biology and chemistry into one class and they couldn't do that. It lacks flexibility. As soon as you pick which ones have to go together, you have not met the needs of a lot of schools.	Advantages of this option is that it is the most flexible. I am assuming that we could select the standards that we want to cover so we could mix Biology with chem and Earth and Space science with Physics or just have Biology, Chemistry and Physics. I would also assume that even though there is no content specified, if a student passed a chemistry standard, they must have seen a periodic table and know element symbols, perhaps what an acid and base were. Specifying one of the five areas gives an indication of what the student has learned. Option A gave no indication at all which made it meaningless. Ministry and	2020-07-01 15:58:42	ANON-FDGN-6QFZ-6	2020-07-01 15:58:42

Teacher	Option C	Having the flexibility to as a school and as a science HOD to select the standards to suit our students best is key and a system that works well for us.				2020-07-01 16:01:53	ANON-FDGN-6QFK-Q	2020-07-01 16:01:53
Teacher	Option C	Provides options for schools to create courses to suit the interests and learning needs of their students.				2020-07-01 16:23:15	ANON-FDGN-6QFF-J	2020-07-01 16:23:15
Teacher	Option C	Option c is the only option which gives a rounded Science Education comparable to other first world countries.	Too narrow No positives	Better than option 1 but still to limited narrow limited positives if any	Student voice and choice is catered for Credible as a first world Science Education Adequately prepares for next step separate Science Education Meets the vision and criteria of NCEA	2020-07-01 16:42:10	ANON-FDGN-6QFA-D	2020-07-01 16:42:10
Teacher	Option C					2020-07-01 16:52:17	ANON-FDGN-6QF1-W	2020-07-01 16:52:17

Teacher	Option C	This option caters for the widest range of students, from those who are looking for some basic understanding of scientific concepts and processes to those who are looking to follow a pathway that requires specialist subject knowledge. There is a strong global focus on the need for STEM based careers and therefore we need to be giving NZ students every opportunity to follow this pathway.	Struggling to think of any positives. Lacks the specialist knowledge that is required by students looking to follow a Science based pathway. The focus on report writing as the main method of assessment really disadvantages those students with excellent scientific skills but not so strong literacy skills. This caters only for academic students who are not really looking to follow a science pathway. This would be a very small proportion of our students. This definitely does not meet point 3 of the 7 criteria for robust pathways into Level 2. It definitely does not meet point 7 in meeting the credibility of an internationally recognised qualification. I firmly believe it would not be taken seriously to allow our students to compete in an international market. As for what the ministry and subject expert	This is an improvement on option A as it does give a more specialist Science option. However, it still essentially gives only 1/2 a year of each of the specialist sciences to prepare students for a full year level 2 course. For those students looking to take 2 or 3 of these specialist subjects at level 2, it still leaves them with a significant gap in key concepts. It comes closer to meeting the 7 criteria than option A. However, there would need to be robust consultation with specialist science bodies as to the content and structure of the standards. Physics/Earth Science and Biology/Chemistry could be an option. Flexibility could further be	This option caters for the greatest range of students within NZ. Being able to offer students a good solid grounding in each of the specialist areas is key to meeting the needs of all students. Again the option to select standards from across the 5 subjects would give even greater flexibility in meeting student needs and given them the best options for future pathways. If this approach is finalised and really hope it is, there will need to be significant thought and discussion about the key content of each standard and the skills that it will help students develop.	2020-07-01 17:02:46	ANON-FDGN-6QCJ-K	2020-06-30 11:11:46

Teacher	Option C	Gives greatest flexibility. Encourages teaching (and assessment) of key concepts as well as NoS. Both are important, but teaching NoS without a decent foundation of conceptual understanding is a grave mistake.	I believe that for many students 'scientific literacy' (as described by the Nature of Science) is the main thing they should take from their science education, HOWEVER, I am convinced that making this the starting (and finishing) point is a mistake. Scientific understanding is based on a huge body of knowledge. We can only hope to scratch the surface at school, but it is too risky to leave a broad coverage of science to chance - the stuff that may be picked up, or used, in order to complete a NoS task. Choice sounds great in principle, but all too often this results in a drift towards 'issues' which frequently end up feeling a bit like social studies. Science teaching gives us the opportunity to instill a sense of awe and wonder, as well as scientific literacy. To do this, we need to explore the big ideas of science	This looks like a compromise, and as such should be avoided. Many students begin to get a real feel for the special character of each science area in year 11, and this proposal would muddy the waters. For those looking to continue with science into year 12 and beyond (which in our school is a very significant part of the year group), it is extremely helpful to start to develop an appreciation and understanding of the different science areas, both in terms of basic content knowledge and conceptual understanding, and the less tangible 'feel'.	This is my preferred option, as it gives the greatest flexibility. Our school currently offers four different Year 11 science courses, to cater for a range of interests and abilities. This structure is extremely effective, and could be further developed using the Option C model. As stated above, our current programme provides an excellent introduction to the study of science in year 12, 13 and beyond, and it is important not to ignore this group, as we try to cater for diverse range of learners. Looking at the 'seven criteria' number 5 sticks out as being more practical than ideological. I hope	2020-07-01 17:37:28	ANON-FDGN-6QFW-3	2020-07-01 17:37:28

Teacher	Option C	New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually arranged around mathematics, physics	Positives: ● Strong emphasis on NOS and relevance of science to the ākonga ● Strong emphasis on mātauranga Māori Negatives ● We do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA ie How the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification. The change to both external standards to be a common assessment activity based on unfamiliar contexts and marked by NZQA , sounds good but there is a wealth of science educational research devoted to the fair assessment of NOS, with an acknowledgement that summative assessment of NOS is very difficult (Aydın et al., 2013	Positives ● A compromise between Options A and C Negatives ● As with many compromises it will probably satisfy neither set of goals	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount	2020-07-01 18:49:53	ANON-FDGN-6QFM-S	2020-07-01 18:49:53

Teacher	Option C	Prefer Option C At Cashmere High School we believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasizes the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): "There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for	Positives: Strong emphasis on NOS and relevance of science to the ākonga Strong emphasis on mātauranga Māori Negatives 1 The main problem with Option A is the risk. It amounts to a giant educational experiment on the tamariki of NZ with no supporting evidence given as to the benefits. Philosophically we agree that teaching with a NOS perspective addresses many of the objectives of the curriculum and a modern science-based society. However, to offer this as the only course for all New Zealanders is a huge risk, especially as NOS is the only thing being assessed. The impact of high-stakes assessment on students is considerable, and although the aims of the course may be laudable, the effect of the assessments can be	Positives A compromise between Options A and C Negatives As with many compromises, it will probably satisfy neither set of goals	Positives 1 Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science-related careers as well as those that need the NOS skills we wish all our citizens to have. 2 Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order to adequately	2020-07-01 20:42:51	ANON-FDGN-6QFR-X	2020-07-01 20:42:51

Teacher	Option C	More specialised sujects in Level to prepare for Level 2 and beyond.	Negative: Too general to be reaxy for Level 2 pure science subjects.	Negatve: combination of specialised subjects into one is confusing.	Positive. Level one science students more ready with knowledge and skills in basic cocepts in each specilaised subject to understand Level 2 subjects the following year.	2020-07-02 08:20:16	ANON-FDGN-6QF8-4	2020-07-02 08:20:16
Teacher	Option C	Because its NOT option A	Hate it!			2020-07-02 08:28:05	ANON-FDGN-6Q6P-C	2020-07-02 08:28:05
Teacher	Option C	Maximum flexibility for student opportunities. A core Nature of Science course is an excellent proposal, but individual students needs and interests would be best served by having a range of opportunities in addition to the core, to cater for the range of students abilities and interests .	A Nature of Science foundational /core curriculum element is a clear positive. Although it broadly addresses the requirements of the 7 criteria, it will not support the more specialised demands of level 2 and 3 science subjects, as they are presented at this time.	This is better in terms of providing more variety of opportunity to follow optional interests.	This the best option if the core science (option A) is compulsory, then it gives greater flexibility for student choice.	2020-07-02 09:09:27	ANON-FDGN-6Q6N-A	2020-07-02 09:09:27

Teacher	Option C	Gives a lot more flexibility to students and teachers. Caters for a wide range of abilities and interest.			Positives: Can plan a well-balanced course to meet the needs of all students and allows for choice. Negatives: teachers who teach the course need to ensure that the standards introduce all of the strands and not just focused on their own subject preference. Meets criteria and good PLD will assist teachers to plan effectively.	2020-07-02 09:43:04	ANON-FDGN-6Q6S-F	2020-07-02 09:43:04
Teacher	Option C	So much choice to cater for all students and teachers abilities.	Poor option. Will lead to less science being done later on in school. No positives. Strange that this option is given then you are asking how can you ensure it is done properly.			2020-07-02 10:03:42	ANON-FDGN-6Q6D-Z	2020-07-02 10:03:42
Teacher	Option A	I feel there is a risk that if the other options are presented, the general science course will be viewed as a 'dumbed down' option.				2020-07-02 10:13:34	ANON-FDGN-6Q6Y-N	2020-07-02 10:13:34

Teacher	Option C	This seems the simplest way of providing specialist subject knowledge and skills in the core Physics, Chemistry and Biology strands whilst still teaching and assessing 'nature of science'. Without the background knowledge the jump into Level 2, 3 and beyond is huge and difficult to overcome for some students.	Some nature of science is necessary. It meets many of the seven criteria but does not provide robust pathways for further study in science. It also limits the qualifications credibility due to this. Students need scientific knowledge as well as skills in order to progress in science. It provides a framework of what is deemed to be 'true' to build on and to be able to apply critical thinking around.	This is better. It will provide more structure and knowledge whilst still delivering the nature of science. This will help students as they move on in their scientific studies. It will also provide them with the background information required to evaluate and analyse. Some compartmentalisation of subjects is useful for students as it helps them arrange knowledge and skills in their minds which, in turn, helps them know when and how to apply them. We currently offer the science course, with students who want to take the separate subjects the following year encouraged to take	As I teach in a small school, this is unlikely to work as it offers too many options. However if students are planning on taking science in level 2 and beyond, this gives them the best possible head start into taking the separate sciences. Provisions would have to be made for students who are not planning on taking science further.	2020-07-02 10:15:28	ANON-FDGN-6Q6U-H	2020-07-02 10:15:28

Teacher	Option B	It maintains the flexibility in course design but reduces the total number of standards. It allows for a wide range of learners and styles and allows schools to develop a broad range of courses to suit a diverse group of students. Note: option C also does this but is probably just too many standards	I fail to see how "less" increases breadth. "What gets measured gets done" and this will lead to courses that don't have the necessary understanding of Science and focus solely on process. Whether it is what we plan what will happen is schools will create courses that maximise the number of credits a student gains and so this will lead to a course where Science is a series of "boxes to be ticked" rather than a nuanced process of iterative knowledge creation. This is not a broad foundational course. We need to be very aware of the "Law of Unintended Consequences" that caused all the problems we are trying to fix	It maintains the flexibility in course design but reduces the total number of standards. It allows for a wide range of learners and styles and allows schools to develop a broad range of courses to suit a diverse group of students. Note: option C also does this but is probably just too many standards. The suggestion that there has to be "two " in each is narrowing of options for example there could be an energy standard that encompasses aspects of Chem, Phys and Bio so why are we bound by old thinking, This can still be innovative, let the SEG get together and do what they did before and come up with ideas and standards from outside the box	All I have written for option B applies here as well I just think there is a danger that "if we do what we've always done we will get what we've always got"	2020-07-02 10:36:21	ANON-FDGN-6QFE-H	2020-07-01 15:32:21

Teacher	Option C	More options giving greater flexibility around student interests. Can have more IEP's for specific students within the same class.			Option C maintains a degree of diversity not so evident in Option A. but still allows for the diversity being sought under the review. Option A is too factory like in it's restrictions. To support this option : Develop quality exemplars linked to each standard with suggestions for contexts that could be substituted, or at least means of identifying new contexts. so that it is opening options rather than restricting them. Implement attended or digital familiarization sessions where the intent of the new standards are expanded on and specific exemplars are analysed/discussed	2020-07-02 11:04:11	ANON-FDGN-6Q63-F	2020-07-02 11:04:11

Teacher	Option C	At Cashmere High School we believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually	Positives: Strong emphasis on NOS and relevance of science to the ākonga Strong emphasis on mātauranga Māori Negatives The main problem with Option A is the risk. It amounts to a giant educational experiment on the tamariki of NZ with no supporting evidence given as to the benefits. Philosophically we agree that teaching with a NOS perspective addresses many of the objectives of the curriculum and a modern science based society. However, to offer this as the only course for all New Zealanders is a huge risk, especially as NOS is the only thing being assessed. The impact of high-stakes assessment on students is considerable, and although the aims of the course may be laudable, the effect of the	Positives A compromise between Options A and C Negatives As with many compromises it will probably satisfy neither set of goals	Positives Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order to adequately	2020-07-02 11:28:32	ANON-FDGN-6Q6T-G	2020-07-02 11:28:32
Teacher	Option C	Provides flexibility in course design an robust pathways for senior science subjects.	No positives - would destroy science.	Negatives - artificially and unnecessarily compartmentalises science.	Provides flexibility in course design an robust pathways for senior science subjects.	2020-07-02 11:30:29	ANON-FDGN-6Q64-G	2020-07-02 11:30:29

Teacher	Option A	This allows a broader range of subjects to be taken at Level 1. Option C could result in a student taking 3 science based courses and thus specializing at a relatively early stage in their life.	Broad range but little depth	More depth but range of other subject areas reduced.	Greatest depth but the least breadth so doesn't meet all criteria. There may be a need for more Science graduates in education.	2020-07-02 11:35:20	ANON-FDGN-6Q6J-6	2020-07-02 11:35:20
Teacher	Option C					2020-07-02 11:37:04	ANON-FDGN-6Q6Q-D	2020-07-02 11:37:04

Teacher	Option B	This would allow a more collaborative approach in which all aspects of Science are included within a particular standard but also allow for some specialisation. The generic standards might not give the detail required within them to allow for a positive knowledge base for those students who are moving into Level 2 specialisation courses. The panel needs to also work backwards and show the overall approach - are universities on board and will the entry criteria be amended to reflect these new standards and courses. If they are accepting generic standards that are contextually based for entry then Option A could work - howver maybe offer 4 internal and 2 external. Why does the course need to be 50% internal and 50% external. There are many science	The generic broad standards could end up being too open ended and vague. Resources must be provided for Teachers to ensure that they are robust, and that exemplars are written. It is unreasonable to expect all teachers in all schools to reinvent the same wheel.	Remove the subject matrix - just have the standards listed. This only creates problems and means that a course can not be created.	Creating 20 standards and exemplars is a huge amount of work. Look at the current data - what standards are used in Level 1 - it is the generic science ones or are some specific subject ones also being usedd. Use the data to determine what is the best option going forward.	2020-07-02 12:01:44	ANON-FDGN-6Q6G-3	2020-07-02 12:01:44

Teacher	Option B	Option B is well balanced with students' workload and enough knowledge to carry on for their further study.	Positive: We might get more students to pass level 1 Science. Negatives: When those students move up to level 2 they may not have enough background knowledge to learn level 2 Physics, Biology or Chemistry. This means we will put a lot of pressure on level 2.	Positive : Well balanced workload and enough foundation knowledge for level 2.	Positive: Students will fully prepared when they move up to level 2 and they have more options when they grow up. Negative: they workload for students.	2020-07-02 12:11:11	ANON-FDGN-6Q6V-J	2020-07-02 12:11:11
Teacher	Option C					2020-07-02 12:33:57	ANON-FDGN-6Q69-N	2020-07-02 12:33:57
Teacher	Option A	This keep it very simple and easy to the administrator. The simplification gives scope to general learning across science and will setup students well for the specialities into year 12 and beyond				2020-07-02 12:35:24	ANON-FDGN-6Q6X-M	2020-07-02 12:35:24
Teacher	Option C	Schools have more choice of learning programmes and courses that they can offer and provide to a wide range of learners.	This is much too restricted and I feel would have the potential to move away from being knowledge rich	Better than option A but I feel the mixture of chem/phys and then bio/earth and space science is still to restrictive	This is the best option to provide diverse learning programmes for ranges of students at different schools	2020-07-02 12:37:27	ANON-FDGN-6Q6E-1	2020-07-02 12:37:27

Teacher	Option C	More option to choose from. Opportunity to specialise earlier if you choose to. Scope will be narrower per subject but deeper understanding may be pursued. This will move the NZ curriculum to match up with other international curriculum like IBDP (International Baccalaureate Diploma Program) or A Level and Cambridge Examinations and the American Advanced Placement curriculum. General Science is still an option if broader knowledge is needed.	They will need to do a lot as this will be very difficult to control the quality and standard of work. There will be too wide of range of interpretation of the standard. More confused teachers and students	This should not be an option. Either Option 1 or 3.	Easier to control the deliver of standards as the scope will be narrower. Easier to control quality of work/assessments Availability of the General Science option allows for broader knowledge Ministry need more groups of experts to oversee the operation, may cost more but it will be tidier, easier to deliver and assess. Teachers and students will not be confused as standards will be narrower.	2020-07-02 12:40:00	ANON-FDGN-6Q6B-X	2020-07-02 12:40:00

Teacher	Option C	Broader range of options. We never wish to box all students into one pathway. To offer a broader pathway, gives all individuals choice, which I feel all subjects in NCEA should offer.	Far too narrow range. Boxing students into one pathway.	Starting to give a range of options. But doesn't go far enough. We never wish to box all students into one pathway. To offer a broader pathway, gives all individuals choice, which I feel all subjects in NCEA should offer.	An acceptable range of options. We never wish to box all students into one pathway. To offer a broader pathway, gives all individuals choice, which I feel all subjects in NCEA should offer.	2020-07-02 12:45:54	ANON-FDGN-6Q6Z-P	2020-07-02 12:45:54

Teacher	Option C	Elements of NOS should already be taught as part of a well rounded Junior Science programme. Having the focus shift too heavily toward NOS seems an over reaction. Also for students to think well about Science there should be explicit content that students are taught and tested on. This is less likely to happen in the other two options. Developing students ability to think creatively and critically is dependent on them understanding knowledge and concepts with which to think about. If we are to develop students who can confidently either understand and think about the world around them or carry on in STEM fields we need to ensure that teachers in NZ have a shared understanding of the concepts and content that students should understand to develop their subject expertise	There is nothing inherently wrong with the standards. There are good ideas here. However in excluding other standards that have a focus on developing students Science understanding as they relate to building subject expertise, we will be dumbing down our students. I dont see this as teaching science effectively. Cognitive science teaches us that in order for anyone to think about anything well, they need to know content. This is heading in the opposite direction. If this finalised, then I would think we would end up with more variety than ever in terms of how internals are taught, the support students are given by teachers, the variety of assessments. The actual learning that takes place will be highly variable. This could be reduced by being very prescriptive in the assessments and guidance	The negative about this option is that it is a compromise that is being made around the 50% internal guideline. I am not sure why this magical number is in play. If one of the issues was too many schools having too many internals. Surely we can have it the course design can be no more than 50% internal, so can be more external. It was my understanding that there was nothing stopping the consultation group from having more externals. However a Physics , Chemistry option would go together better.	This is better in that it can give greater clarity about what students are expected to understand in terms of content. So that students going into other schools, we would have some shared understanding of what is the important knowledge for our students to understand.	2020-07-02 12:51:05	ANON-FDGN-6Q6K-7	2020-07-02 12:51:05

Teacher	Option B	Option A does not allow enough scope and Option C offers too much. It is important to consider the impact of allowing too many options for Science at Year 11 on other subject areas. There needs to be an holistic approach and balance among curriculum areas. Option C would tip this balance.	There is not enough scope within the the limited four standards to teach all of the subject areas within the Science. No. I don't think it supports criteria 3. It is TOO broad.	This is an acceptable middle ground. Yes it meets the 7 criteria. Yes that combination makes sense.	This is too much and too specialised for Year 11's. It is not broad at all. Criteria 1 and 5 are not being met in this option.	2020-07-02 13:01:30	ANON-FDGN-6Q6A-W	2020-07-02 13:01:30

Teacher	Option C	Allows greater flexibility and pathways for students.	Positive : Good coverage of NoS, streamlined. Negatives: Too narrow, insufficient science content for those intending to take science further.	Positives : Broader and a better preparation for level 2 science courses but still muddies the waters regarding the three science disciplines offered at L2. Criteria : Yes it provides a broader, foundational NCEA Level 1 with increasing specialisation at Levels 2 and 3. Yes it does support learning from the National Curriculum, with little overlap. The subject only partially supports coherent and robust pathways into NCEA Level 2 and further study or training. The subject could partially support pathways for individual learners. Demand for the subject is unknown as we have never offered this version. Likewise	Positives : Broad and a suitable preparation for level 2 science courses. Fits well with progression to L2 whilst still catering for students not taking science further. Negatives: More different standards to implement so more resources required. Criteria : Yes it provides a broad, foundational NCEA Level 1 with increasing specialisation at Levels 2 and 3. Yes it supports learning from the National Curriculum. There may be overlap but this can be avoided with sensible standard/course selection. The subject supports coherent and robust pathways into NCEA Level 2 and further study or	2020-07-02 13:09:20	ANON-FDGN-6Q65-H	2020-07-02 13:09:20
Teacher	Option C				More options, separate Biology	2020-07-02 13:09:25	ANON-FDGN-6Q61-D	2020-07-02 13:09:25

Teacher	Option C	This gives the broadest possible range of standards, without narrowing down the subject matter. In year 9 and 10 students already get a very broad selection of science and year 11 is a time when students can chose to start digging in deeper into some of the topics they are interested in.	It is difficult to say, as I do not know what the wording and content of each standard is. There are only a few standards, so likely too much subject matter will be crammed into each standard, and there will be a huge pressure on students to do well in each, which is unfair to them. It does not meet the criteria, as it does not support pathways for individual learners.	Again, difficult to say, as I do not know what the wording and content of each standard is. There are only a few standards, so likely too much subject matter will be crammed into each standard, and there will be a huge pressure on students to do well in each, which is unfair to them. It does not meet the criteria, as it does not support pathways for individual learners. Biology and chemistry go together best, Earth and space goes well with physics.	I think this option does meet the criteria, as it provides enough options for individual learners.	2020-07-02 13:31:21	ANON-FDGN-6Q6C-Y	2020-07-02 13:31:21
Teacher	Option C					2020-07-02 13:47:38	ANON-FDGN-6Q6W-K	2020-07-02 13:47:38

Teacher	Option B	best of both options gives opportunities for students that would otherwise not select general Science (i/e/ really dislikes biology or physics), yet doe snot require too much specialisation - as in a whole course of just Physics can also help the schools prepare students who are going onto senior subjects at L2/3				2020-07-02 13:57:13	ANON-FDGN-6Q6M-9	2020-07-02 13:57:13
Teacher	Option A	I like that it means all students at Y11 in NZ get taught the same content. I would like it to ensure there is enough content to then flow on in to the senior specialised subjects and on to tertiary pathways.	Positive: All students get the same opportunity It is more realistic about how science works in real life (not in discreet subjects) Negative: Loss of content for subject areas that lead to senior subjects and require a certain amount of prior knowledge.	Positives Some subjects can be taught in more depth Negatives It won't be applied the same at different schools	Positives Some subjects can be taught in more depth Negatives It won't be applied the same at different schools	2020-07-02 14:09:58	ANON-FDGN-6Q6R-E	2020-07-02 14:09:58
Teacher	Option B					2020-07-02 14:22:10	ANON-FDGN-6QVP-C	2020-07-02 14:22:10

Teacher	Option C	It allows most flexibility and allows for students who love science to be able to count it at as separate subjects.	I do not see how this would give students enough grounding for continuing with separate subjects at Level 2.	This option could be okay. It would certainly allow for some deeper learning and grounding for Level 2.	Gives most flexibility to cater for different students. Could give the best preparation for Level 2.	2020-07-02 14:23:47	ANON-FDGN-6QVN-A	2020-07-02 14:23:47
Teacher	Option C	allows for more flexibility to suit the students and the teachers better preparation for the senior sciences better resourced so that if ever there is another teach from home, there are resources and platforms such as Ed perfect that the students can access	NO This is too broad based and does not provide the skills needed for future success and understanding of science concepts.	chemistry and biology fit together better than Bio and earth sciences. its a better option than A but lacks the variety and skill base of C	Is much easier and offers better range so that schools can design progammes to suit their schools students and communities	2020-07-02 14:25:12	ANON-FDGN-6QVS-F	2020-07-02 14:25:12

Teacher	Option C	To enable students who have a passion in a particular area or Science can follow that passion. This will also give them adequate knowledge for entering specific university degree programmes. Students are still able to gain general Science skills in Option C Option A does not do this and is inadequate while Option B only partially allows students to follow their passion.	Positive its 'general' and you get a bit of everything skill wise Negative it doesn't adequately prepare students for university they would be severely lacking in knowledge. It doesn't allow students to gain a broad knowledge in the specific area of Science that they are passionate about.			2020-07-02 14:34:52	ANON-FDGN-6QVY-N	2020-07-02 14:34:52

Teacher	Option C	Student interact with all the Sciences in an explicit way.	Option A would be much more broad and less focused on the fundamentals of Science principles. Option A would allow students to very briefly explore some simple Science ideas and would not allow them to effectively choose the science they enjoy the most - if not all of them for the next year in Level 2.	The same as option A but this could be more beneficial in finding the link between sciences. Although again, students can not learn both Biology and Chemistry when they have such a vague knowledge of both. Students need a foundation of knowledge before they can start to link these things together and start deeper level thinking. Chemistry and Biology would be very interesting as this would ideally include a lot of body processes and organic topics although, at level one being introduced to both Bio and Chem at the same time before learning each individually seems wild.	This approach seems to be the most logical. Introducing kids explicitly to either chemistry, biology or physics one at a time. This will allow students to build their knowledge and fundamental skills to be applied to a higher order the following year in Level 2.	2020-07-02 14:39:53	ANON-FDGN-6QVU-H	2020-07-02 14:39:53

Teacher	Option B	This allows for schools to offer a general science Year 11 option, but also a Physical Science and a Natural Science option. This is good to free up students option choices to get a broad range of subjects across the school. Can then move into specific Chem, Phys, Bio and Earth Sciences in Year 12 and/or Year 13				2020-07-02 14:40:00	ANON-FDGN-6QV2-E	2020-07-02 14:40:00
Teacher	Option A					2020-07-02 14:52:50	ANON-FDGN-6QV3-F	2020-07-02 14:52:50
Teacher	Option B	Provides more breadth and the scope to extend students with an interest in the sciences without having too many standards to choose from	Not broad enough	meets the even criteria but with 20 different standards no real change from current model	Provides flexibility in terms of being able to offer on science subject or for those with a passion for science greater breadth and therefore the opportunity to prepare the ground work more for continue study at level 2. meets the seven criteria	2020-07-02 14:52:55	ANON-FDGN-6QVT-G	2020-07-02 14:52:55

Teacher	Option C	There is a range of abilities, interests, capabilities, facilities, motivations, motivators and expertise available at each school, for each student, for each family and for various towns. The interests of students can best be served when a range of options is available and the widest range of options occurs in option C. That is why I support it. Thank you for asking my views.	It is broad but it does not contain the interest-stimulating content that some students seek. If this approach is finalised, there would not be much needed for the Ministry and SEAs to do to ensure schools are able to teach this effectively; most schools already have this capacity. With regard to criterion 7, this option might be seen as further watering-down of the rigour that our national qualification needs to maintain its mana on the international stage. E pa ana ki te wahanga ono, tino tuai te huarahi mo nga tauira i roto i nga tini kura o nga motu. Na reira, kihai au e tautoko ki tenei take.	This option is a nice middle ground for schools to offer and that might be its strength. However, I do not support it because it does not offer the full range of content that is available with the third option. This option might be supported by those who want to aim between the two extremes. This option has some similarities with options available in international qualifications like IGCSE and that might help some schools streamline their offerings. It might help mitigate some of the loss of mana that our qualifications can be perceived to struggle with. E pa ana ki te wahanga ono, ka whakaaro ahau ko	This option offers the biggest range to schools and it is particularly useful to schools that have either a large cohort that can be catered for and it also offers the ability for schools to attract and retain both students and staff who wish to aim towards specific skill sets earlier than might be preferred by some others. This option is the one I prefer because it offers schools, parents, students and HODs the most flexibility. It also offers the most mana of the three options and this will help preserve NZ's integrity on the world stage of education. E pa ana ki te wahanga ono, ki	2020-07-02 15:16:39	ANON-FDGN-6QV4-G	2020-07-02 15:16:39

Teacher	Option C	It offers the greatest flexibility in terms of offering courses for different students who have different requirements	Positive - relating students learning to real life issues and situations Negative - either diluting content knowledge or being too complicated for weaker learners I don't think it meets the seven criteria as it does not guarantee a robust pathway into Level 2 Science	Offers potential for a good foundation of Science knowledge for students to build on with further study or to take into their lives in the future. I think it meets the seven criteria.	Positive - wider choice for schools to build robust courses that suit their students Negatives - possibly too much choice! It does meet the seven criteria	2020-07-02 15:25:58	ANON-FDGN-6QVJ-6	2020-07-02 15:25:58
Teacher	Option C	Purely because it has the most flexibility when designing courses to fit the needs of our students. It incorporates both Options A and B.	I would like to see a working draft of Option A. Then I can compare new apples with old apples.	Option B is trying to please everyone but ends up pleasing no one. You either have to go with Option A or Option C.	Purely because it has the most flexibility when designing courses to fit the needs of our students. It incorporates both Options A and B.	2020-07-02 15:28:45	ANON-FDGN-6QVQ-D	2020-07-02 15:28:45
Teacher	Option C	We need to broaden Science; not dumb it down	An unacceptable option which would see Science dumped in favour of Chem Phys Bio, or alternate exam systems (IB for example)	A middle ground option devoid of merit	I can think of a better plan, but this would suit 'middle of the road students who don't want to specialise	2020-07-02 15:29:29	ANON-FDGN-6QV6-J	2020-07-02 15:29:29

Teacher	Option A	I believe that this option gives a school the greatest flexibility to build course material around a context that best suits what is available in the community. It also best aligns with the parameters of making science more broad and foundational.	Positive - there would be a greater focus on NOS rather than content Negative - Hard to fit some foundational knowledge from strands into a context that isn't contrived. Danger of some important concepts not being addressed. Lots of organisation around distributing resources unpacking them and ensuring that students have the content knowledge to engage with the material. This would be huge in large schools.The burden of organizing the completion of External examination falls on Teachers it seems really onerous and most schools will be under resourced to carry it out. Sounds like teachers getting dumped on again. Internal assessment is already huge burden on teachers this feels like another layer of assessment obligation which having experienced the huge	What is in the matrix? Why cant schools chose standards from all 4 matrix to make up courses as they do now.	Doesnt fit vision of NCEA as broader NOS focused subject but does ensure that students are getting a good foundation of knowledge	2020-07-02 15:42:23	ANON-FDGN-6QV7-K	2020-07-02 15:42:23

Teacher	Option C	This allows us to use the Nature of Science strand and incorporate it into the knowledge based standards of the Specialised Sciences. Our school caters for high academic achievement in the Science and Mathematics with many of our students going onto study Medicine, Engineering and Architecture. This option will cater best for our cohort.	Positives: Science applied to every day experiences. More accessible to the majority og Y11 students. Negatives: Lack of in-depth understanding/knowledge of content. It could lead to a more social studies applications (i.e. climate change)	I am not in favour of this option. Either A or C. Forcing Physics and Chemistry into one subject matrix would not give enough choice to students interested in having a "taste" of all 3 Sciences (Biology, Physics and Chemistry)	Positives: This allows us to use the Nature of Science strand and incorporate it into the knowledge based standards of the Specialised Sciences. It gives us the content knowledge on which to "hang" the Nature of Science Negatives: Less academic students would probably not favour this option.	2020-07-02 15:43:47	ANON-FDGN-6QVG-3	2020-07-02 15:43:47

Teacher	Option B	It is important to create structures that support the development of specialist scientist skills. It is also a benefit to students to cluster specialist (general, physical and natural vs general, physics, chem, bio, ess) classes because it makes it easier to take a broader range of science.	Does not provide enough foundational learning to support students moving in to Level 2 and Level 3 courses.	It is important to create structures that support the development of specialist scientist skills. It is also a benefit to students to cluster specialist (general, physical and natural vs general, physics, chem, bio, ess) classes because it makes it easier to take a broader range of science.		2020-07-02 16:15:44	ANON-FDGN-6QV9-N	2020-07-02 16:15:44
Teacher	Option B	Will main stream the science fields in preparing for UE. More balanced way of inroducing science as a whole.	Too general! Not a lot of options for growth in science and detailed learning. Not enough structure. Does not provide enough fundamental scientific basics for future studies.	Better structure which is beneficial to students. More stream lined and develop more specialists scientific skills.	A lot like the structure we have now.	2020-07-02 16:16:01	ANON-FDGN-6QVV-J	2020-07-02 16:11:53
Teacher	Option B	A better option, gives students better choices and direction				2020-07-02 16:18:23	ANON-FDGN-6QVH-4	2020-07-02 16:18:23

Teacher	Option C	I think option A and B reduce the capacity for schools to develop courses that best suit their community. This is crucial to student engagement. It would be a mistake to remove this flexibility. Also, option A relies heavily on report writing. This is a skill that some students have not yet developed. It is appalling to think this demographic of young person would be shut out of the science curriculum at NCEA level 1.			MOE needs to create all resources before expecting schools to make them all. As a teacher we often feel like the MOE has no idea about what they expect schools to do. How do think this makes us feel? More input from the MOE in terms of guidance before we roll this out is very important. You cannot rely on all ready over worked teachers to do all the work for you. This has definitely happened in the passed.	2020-07-02 18:01:51	ANON-FDGN-6QVB-X	2020-07-02 18:01:51
Teacher	Option A	Keeps students able to get a broad education at level one. I fear students could feel pressure to study multiple science courses leading them to narrow their education too early.	This allows a broad education at Year 11.	Does not give students a broad qualification. Damaging to other learning areas if students choose multiple science courses.	Does not give students a broad qualification. Damaging to other learning areas if students choose multiple science courses.	2020-07-02 18:02:41	ANON-FDGN-6QVZ-P	2020-07-02 18:02:41

Teacher	Option A	General coverage at level 1 awesome!	Perfected option.	His would just roll back to what we are doing now.	Same as option b	2020-07-02 18:07:57	ANON-FDGN-6QVK-7	2020-07-02 18:07:57
Teacher	Option C	This option allows students and teachers to select specific areas of science to explore in greater depth if they want to, whether that's through a single standard or taking general science and a specific science class	Positive: broad overview of science Negative: potential to be too broad and not adequately prepare students for more in-depth study at level 2	Allows students to explore a variety of science subjects on more detail without taking up their options. However, students may be interested in only 1 out of a combination of science subjects. Chemistry and biology/physics and earth and space might fit together well, but some students are more interested in the relationship between physics and chemistry than biology and chemistry.		2020-07-02 19:56:03	ANON-FDGN-6QVA-W	2020-07-02 19:56:03

Teacher	Option C	Choice for students. Many students want to focus on a particular area.	Why limit schools . Please explain how the Ministry and subject experts (already in short supply to actually teach science in schools) would be able to assist, ensure, provide realistic help to already overworked teachers who in science departments often have non-science trained teachers in their departments.	Why limit schools.	Education is about choice for the learner. Effective teaching is about passion Teachers teaching a subject they are passionate about ensures better teaching and therefore better learning. Allowing teachers and students the chance to teach and be taught a subject they are passionate about and where teachers feel they are qualified and trained to teach will ensure confidence and be a positive outcome for both parties. We need to keep quality teachers in science.	2020-07-02 21:29:17	ANON-FDGN-6QV5-H	2020-07-02 21:29:17

Teacher	Option C	We need the largest scope and available options so we can set up differentiated learning courses for all students. I am still not a fan of the changes because it is not going to suit boys educations with the report writing aspect and no practical assessments. I am still hugely concerned about Level 2 preparation.	No No No We have no scope or chance to tailor courses. We run accelerate classes in Level 1 and we wouldn't be able to do this with this option. I understand the reasoning behind the broader foundation but Level 2 is challenging enough without less specific content. DO NOT like the idea of report based assessments especially for boys education.	This would not allow our school to run our current science programme, Level 1 physics and Level 1 Biochemistry (mixture of chemistry and biology).	this option allows us a bit more flexibility but the forms of assessment and the consistency with marking especially with internal externals is very concerning.	2020-07-03 07:56:08	ANON-FDGN-6QV1-D	2020-07-03 07:56:08

Teacher	Option C	I think there are diverse skills related to each branch of the sciences, and I think we stand most chance of delivering those skills if we recognise each of the branches. There are such different approaches to understanding a physical phenomena, where precise measurements can be made, compared to biology, where sometimes we rely on observations and few measurements.	Positives - simplicity will probably lead to consistency. Negatives - specialised skills will be diminished. It emphasises one area of the curriculum (NOS) above the others. 7 criteria - well, it is broad and general, so yes to #1, but it is not providing good pathways into level 2 or beyond, so no to #3. The last question is hard to answer - I really don't have a clear vision of what those in charge are thinking that science education might / should look like. The thing I would really like to see happen is for engagement with our subject associations take place - it seems this has not yet effectively happened.	Well, it's the middle ground, a goldilocks solution I guess? I think it's a compromise between the other two? The thing I would really like to see happen is for engagement with our subject associations take place - it seems this has not yet effectively happened.	I think this is the most similar to the current position, and perhaps that's appealing just because we all hate change being forces upon us. It certainly allows clarity in the delivery of all of the curriculum contents, whereas option 1 a student could easily avoid learning about 3/5 of the content. The thing I would really like to see happen is for engagement with our subject associations take place - it seems this has not yet effectively happened.	2020-07-03 08:53:52	ANON-FDGN-6QVC-Y	2020-07-03 08:53:52
Teacher	Option C					2020-07-03 09:03:57	ANON-FDGN-6QVW-K	2020-07-03 09:03:57

Teacher	Option C	The ability to be flexible in the options you present is paramount. The current model allows all schools to cater for the students they have in front of them. It also enables the abilities of teachers and school resources to be flexible so that each school can maintain its unique aspects.	The seven criteria are arbitrary based on change being needed. In fact, the underlying issues with the current format are more structural NCEA issues across all curricular not particular to science issues. Issues such as a lack of deep understanding by science teachers are what causes some of the issues particular to science. Secondly, the loss of autonomy as a subject being eroded away by the drive to make literacy the all-important factor is a significant turn off to many potentially very good science students. We should embrace science for the independent subject that it should be and relieve the pressures asserted by making it a covert operation to improve literacy at the cost of the actual science.	The seven criteria are arbitrary based on change being needed. In fact, the underlying issues with the current format are more structural NCEA issues across all curricular not particular to science issues. Issues such as a lack of deep understanding by science teachers are what causes some of the issues particular to science. Secondly, the loss of autonomy as a subject being eroded away by the drive to make literacy the all-important factor is a significant turn off to many potentially very good science students. We should embrace science for the independent subject that it should be and	The seven criteria are arbitrary based on change being needed. In fact, the underlying issues with the current format are more structural NCEA issues across all curricular not particular to science issues. Issues such as a lack of deep understanding by science teachers are what causes some of the issues particular to science. Secondly, the loss of autonomy as a subject being eroded away by the drive to make literacy the all-important factor is a significant turn off to many potentially very good science students. We should embrace science for the independent subject that it should be and	2020-07-03 09:21:12	ANON-FDGN-6QVR-E	2020-07-03 09:21:12

Teacher	Option C	Option C gives greater flexibility to tailor courses to students interests and abilities. It also allows for developing the understanding and skills needed for Chemistry/Physics/Biology/Science courses at levels 2 and 3. Level 1 Science has a two objectives. 1) prepared NZ citizens in order that they may understand many of the complex issues facing the world and 2) prepare them for careers and education pathways that require Science. In this area the skill of learning content is one important skill that is assessed by recall of content knowledge. (We do not want our doctors etc of the future to have look up everything because they cannot remember it) This skill needs to be developed early in Science as it is not developed in many other subjects	Option A does not provide sufficient choice to meet the diverse needs of learners. The proposed standards a have a high literacy requirement which disadvantages some learners. It does not provide options for students who are committed to pursuing a Science career and wish to be rewarded for this. The success and high regard for New Zealand Scientists worldwide is due to the high level of Science Education that occurs in our Schools and Universities. This requires building a foundation of understanding of key concepts not just the Nature of Science. This may be lost if Option A is the only option.	This is a compromise option and does not offer the breadth of choice of Option C	Option C allows for greater flexibility to respond to the needs and interest of learners. It would allow courses to be changed to meet the needs of the learners in your classroom which may be different from year to year. In schools where several Science options are already offered at Level One this option would allow that choice to be maintained. Option C would help ensure that where there is a high uptake of Science options at Level two and three. Students who have mastered key skills and developed understanding of key concepts at level one allow students to start level 2 courses with confidence	2020-07-03 09:41:19	ANON-FDGN-6QH1-Y	2020-06-30 08:59:50

Teacher	Option B	While the connections among sciences are varied, this option provides the balance between understanding science in general (the process of objective investigation of evidence and curiousity about the world or universe) and the most direct and key connections between the subjects - Physics/Chemistry and Biology/Earth/Space. Option A leaves too little space to prepare base knowledge of the various later specialty subjects, and this will force courses (and teachers and students) to spend more time building that baseline instead of extending into higher concepts and developing more experience with the ideas (versus just the facts they need to know). Option C is effectively what we have now, and means that students				2020-07-03 09:55:23	ANON-FDGN-6QV8-M	2020-07-03 09:55:23

Teacher	Option C	This is my preferred option because it allows for a more specific set of teaching which will set students up with skills to continue through to level 2 and 3. It still has the option of a broader course under the nature of science strand but allows for educators to focus on specific learning areas within the level 1 curriculum.	Positives: - It allows for a broad range of teaching and crossing over of science ideas - Gives students a chance to take more subjects. Negatives: - It doesn't set up the students moving through to level 2 to have specific skills required for those learning areas they choose. I believe it doesn't fit all of the aspects of the criteria. Their would place a high demand on the educators and students to deliver a vastly different curriculum structure which places high stress and workload for students (who would have zero past material to go off) and educators. There would need to be a lot of PD and guidance within the science sector to make sure that it is delivered in a way that best supports students and educators.	Positives: - It allows for more specific teaching of certain curriculum areas. Negatives: - With only 2 standards of each subject it still doesn't fully prepare students for level 2. - I feel the earth and space science is a waste when most educators don't offer a full course moving through to level 2 and 3. so wasting it in conjunction with another strand is a waste of time. The better option for grouping the 4 strands would be: Chemistry and Biology Physics and Earth and Space Science. If this was to be the finalized systems you should be able t group the strands how you feel best fit as an educator that is going to	Positives: - Allows students the chance to specialize early and take advantage of the teachings in level 1 to prepare them for 2 and 3. - Their is more chance as an educator to be specific with their courses. Negatives: - Cuts off students chance to access the other subject areas. I think using this format and being able to pick and choose different standards for the course you want to do. E.g. having 2 material world strands, one physical and one living world. This gives them the chance to experience a wide range of the sciences and be more specific to each strand to	2020-07-03 10:02:01	ANON-FDGN-6Q9N-D	2020-07-03 10:02:01

Teacher	Option C	1. It offers maximum flexibility: - You can choose from a greater range of achievement standards so more flexible. - You can respond to the current cohort and change the course during the year if there is more choice. Also can respond to new opportunities that arise (eg local curriculum) during the year. - You can alter the course if we have to teach remotely again as again, more choice. 2. More choice of standards means it will be easier to cater for a diverse range of learner and therefore will provide equity across all learners. 3. It ensures all aspects of the National Curriculum are represented. Making the course more robust 3. It will be easier to tailor Level 2 senior Science courses.	Does it meet the 7 criteria? 1. How the subject fits with the policy vision of a broader, foundational NCEA Level 1 with increasing specialisation at Levels 2 and 3. - It may seem as if this option offers a broader foundational qualification, but really it will narrow it because it will depend on the preference of the teacher, year on year the contexts, strands, achievement objectives will change, and it will not be cohesive across the country. It will not give all students an experiences of the 4 strands (bio, chem, phys, ESS) so how will they know what they want to specialise in? 2. The extent to which the subject supports the inclusion of important and rich learning from the National Curriculum, with as little overlap as possible. This is the purpose of	This option is a nonsense middle ground that does not immediately satisfy either Option A or C. I would suggest the Bio-chemistry would be a better fit and Physics and ESS.	Does it meet the 7 criteria? 1. How the subject fits with the policy vision of a broader, foundational NCEA Level 1 with increasing specialisation at Levels 2 and 3. - This option allows schools to design courses from Option A and B, this would satisfy all schools and contexts as it offers the most choice. Schools that have a large cohort taking science at level 2/3 and going on to studying science based careers can specialise. Schools that have a smaller cohort moving onto further science study can focus on Citizen Science courses to equip students for the world. 2. The extent to which the subject supports the	2020-07-03 10:01:56	ANON-FDGN-6Q9P-F	2020-07-03 10:01:56
Teacher	Option C	Allows for more choice so that we can respond to student interest and need			The broader range allows for more options for teachers and students	2020-07-03 10:17:34	ANON-FDGN-6Q9S-J	2020-07-03 10:17:34

Teacher	Option C	students have the option to engage in more science learning rather than less student access to subject specific language earlier rather than later will lessen the jump required between Level 1 to Level 2 and therefore may increase student retention in science NZ NEEDS young people interested in science NZ HAS subject specific teachers ready to inspire these rangatahi many schools begin the current Level 1 internal science standards in term 4 of Year 10	this option is completely unacceptable, it is decidedly anti STEM this is the "dumbed down" option that negatively impacts students who have chosen sciences as their study pathway this option negatively impacts well trained science educators to consider quitting teaching science in NZ due to the waffly content free standards NZ needs to retain all the science educators it has this option would be seen as an embarrassment to NZ education internationally	this option is tolerable this option allows students the CHOICE to study more than general science and therefore does not negatively impact those learners who have identified their career as science the matrix does not need to decide on whether chemistry blends with physics better than it blends with biology, this decision should best be left to the school to tailor its courses to best fit its students from a range of standards, also the school is able to better able to utilize the expertise of the science educators it has	this is the preferred option, it is seen as pro STEM this option allows the student to have MAXIMUM CHOICE in their decision to study science this option allows for the most robust science education of NZ students the matrix does not need to decide on what standards need to be taught, a choice of standards can allow schools to tailor the science education they offer to best meet the needs of their students, ANY subject specific learning will better prepare students for future learning pathways rather than NONE	2020-07-03 10:17:52	ANON-FDGN-6Q9D-3	2020-07-03 10:17:52

Teacher	Option A	more in keeping with the overall intent of the NCEA review, and more in line with what is happening for other subject areas. Option 3 particularly would only result in the proliferation of science courses at level 1, which mean that students potentially can become too specialised too early. this is up to schools to manage however.				2020-07-03 10:28:58	ANON-FDGN-6Q9U-M	2020-07-03 10:28:58

Teacher	Option C	NZ needs trained scientists for the coming century. They need to be inspired whilst young and start the specialist track into academia. Equity is one thing, and an important issue. However, the overriding threat of climate change and the changes this will necessitate are going to fall onto the next generation. To leave them inadequately prepared to a) understand the scientific issues correctly and b) understand why social changes need to be made in order to tackle this threat would be very wrong. C provides the broadest and deepest science education for those that want it, and address equity issues as well.	Far too shallow.	A compromise. Will not adequately address the scientific needs for the next century.	However, the overriding threat of climate change and the changes this will necessitate are going to fall onto the next generation. To leave them inadequately prepared to a) understand the scientific issues correctly and b) understand why social changes need to be made in order to tackle this threat would be very wrong. C provides the broadest and deepest science education for those that want it, and address equity issues as well.	2020-07-03 10:34:38	ANON-FDGN-6Q92-H	2020-07-03 10:34:38

Teacher	Option C	Like the ideas for across the subject- cross pollination			The positive part of the option C is that students who aiming for deep learning and especially for those who really want to make their future in science field. Yes, I definitely believe that this option will meet the seven criteria. Teaching science shouldn't be a problem for schools as it can be taught with a different approach and we don't need expensive equipment and Labs.	2020-07-03 10:46:44	ANON-FDGN-6Q93-J	2020-07-03 10:35:10

Teacher	Option C	I think that giving schools/teachers more flexibility with how and what they teach is a good idea. NOT all classes or students are the same and therefore having this flexibility means we can cater to the divers needs of ALL students.	positives : teaching NOS criteria is important if this is the last year of science for students. Negatives: no flexibility; No understanding (for teachers at the moment) of how this is going to feed into level 2 or level 3 senior subjects. Students moving up to these levels do need to have content knowledge if they are going to be successful. The current proposed NOS tasks are very literacy heavy, not all students will be able to cope with this.	why not one of each? 1 NOS, 1 biology, 1 physics, 1 chemistry ?	I believe that this approach gives students and teachers the most flexibility with teaching and learning.	2020-07-03 10:53:01	ANON-FDGN-6Q9T-K	2020-07-03 10:53:01
Teacher	Option C	this is the only option where you are not "dumb downing" Science	nil positives	nil positives	caters for a wide range of abilities.	2020-07-03 10:54:41	ANON-FDGN-6Q9J-9	2020-07-03 10:54:41

Teacher	Option B	Gives a greater exposure to the various disciplines without giving too much specialization.	Does not prepare students for our IB program Limited exposure to the various disciplines Too much focus on the nature of Science	Greater exposure to content knowledge Would be good to give students access to all the permutations, i.e. Phys/Chem, Phys/Bio, Phys/E&SS, Chem/Bio, Chem/E&SS, Bio/E&SS, i.e students can choose two OR four disciplines in any combination	Too specialised	2020-07-03 10:53:39	ANON-FDGN-6Q94-K	2020-07-03 10:53:39
Teacher	Option C	Students get to choose based on their interests and strength of different Sciences.	Negatives: Not too many options available for the students to choose from.	Negatives: An again too small selection of options.	Many options available and it is great for students to have wide range of standards to choose from.	2020-07-03 11:03:29	ANON-FDGN-6Q9Q-G	2020-07-03 11:03:29
Teacher	Option C	It was shocking that the sciences were all being bunched into one big course. Assessment methods for externals was not catering for students that are not language strong.	Shocking that the sciences were all being bunched into one big course. Assessment methods for externals was not catering for students that are not language strong.	Shocking that the sciences were all being bunched into one big course. Assessment methods for externals was not catering for students that are not language strong.	All four strands of Science clearly defined and optional. Flexibility for building course for entry into L2 Sciences. Assessment methods for externals was not catering for students that are not language strong.	2020-07-03 11:39:46	ANON-FDGN-6Q96-N	2020-07-03 11:39:46
Teacher	Option C					2020-07-03 11:59:54	ANON-FDGN-6Q97-P	2020-07-03 11:59:54

Teacher	Option C	This allows flexibility to design courses for a range of diverse learners and courses. The current suggestion is restrictive and lacks content. This limits the type and range of assessment, including the ability to prepare for external examinations. There is lots of evidence based research that confirms that preparation for summative tests enables students to apply retrieval practice. A skill that will not be developed if you remove content. Removing the ability to provide a high stakes summative assessment reduces the range of skills and assessment opportunities. My school works with the Pūhoro STEM Academy who help our Māori students learn the skills to prepare for the rigor of summative assessments within school, starting at level one. A focus on preparing for the	To be honest, I can't really see any. It is narrow and will require faculties to re-plan their curriculum. We are too time poor.	I don't think it gives enough flexibility.	I think my discussion early discusses this already.	2020-07-03 12:23:15	ANON-FDGN-6Q9G-6	2020-07-03 12:23:15
Teacher	Option C	This makes sense.			yes	2020-07-03 12:25:45	ANON-FDGN-6Q99-R	2020-07-03 12:25:45

Teacher	Option C	Prefer Option C At Cashmere High School we believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for	Positives: Strong emphasis on NOS and relevance of science to the ākonga Strong emphasis on mātauranga Māori Negatives The main problem with Option A is the risk. It amounts to a giant educational experiment on the tamariki of NZ with no supporting evidence given as to the benefits. Philosophically we agree that teaching with a NOS perspective addresses many of the objectives of the curriculum and a modern science based society. However, to offer this as the only course for all New Zealanders is a huge risk, especially as NOS is the only thing being assessed. The impact of high-stakes assessment on students is considerable, and although the aims of the course may be laudable, the effect of the	Positives A compromise between Options A and C Negatives As with many compromises it will probably satisfy neither set of goals	Positives Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order to adequately	2020-07-03 12:40:10	ANON-FDGN-6Q9H-7	2020-07-03 12:40:10

Teacher	Option C	At Cashmere High School we believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually	Positives: Strong emphasis on NOS and relevance of science to the ākonga Strong emphasis on mātauranga Māori Negatives The main problem with Option A is the risk. It amounts to a giant educational experiment on the tamariki of NZ with no supporting evidence given as to the benefits. Philosophically we agree that teaching with a NOS perspective addresses many of the objectives of the curriculum and a modern science based society. However, to offer this as the only course for all New Zealanders is a huge risk, especially as NOS is the only thing being assessed. The impact of high-stakes assessment on students is considerable, and although the aims of the course may be laudable, the effect of the	Positives A compromise between Options A and C Negatives As with many compromises it will probably satisfy neither set of goals	Positives Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order to adequately	2020-07-03 12:41:30	ANON-FDGN-6Q9X-Q	2020-07-03 12:41:30

Teacher	Option A	sets up a strong experimental and research based foundation without having to also learn specialised language and conventions.	That you can work on getting the students research and experimentation skills up to a level where they can work independently, allowing you to teach specialised content at 12 and 13 .	They do not need this at level One must focus on basic scientific skills specialise in 12 and 13. Elitist teaching not equitable, students then fall into trap where they cannot do 12 and 13 because they have not done 11. Absolute rubbish.	They do not need this at level One must focus on basic scientific skills specialise in 12 and 13. Elitist teaching not equitable, students then fall into trap where they cannot do 12 and 13 because they have not done 11. Absolute rubbish.	2020-07-03 13:19:03	ANON-FDGN-6Q9Z-S	2020-07-03 13:19:03

Teacher	Option C	Option C allows for a more balanced approach to Science and incorporates all 5 strands of Science we are required to teach under the New Zealand Curriculum. It offers a wider variety of courses to be created so schools (who know their students best!) can adequately prepare ALL students with their future goals. Content specific standards in each of the 4 content strands allows us to adequately prepare students for the rigors of academic studies while the others also provide a more general approach for students who will utilise the every day aspects of science - the evaluating of sources, the critical thinking, the investigation of claims and use of evidence-based opinions. Even better, the Science subject matrix will be able to be streamlined and	If this option is finalised you can expect a wide range of schools choosing to not offer Level 1 Science and to create their own courses that will adequately prepare students for Level 2. I do not believe the Ministry could impact this as the issue is under Option A as it has been proposed will not be teaching Science content at all - why should we listen to you about how to teach Science effectively when Science has been stripped from its own subject? Rest assured I would not welcome advice from you if this is the direction you wish to take Science. The only positive is the increase in NOS, something teachers in general do want from those I've spoken with, but not at the expense of the content and underlying foundational concepts of Science.	Having spoken to my students, they believe the combination currently chosen for the two specialist sciences is the best choice for Level 1. However Option C would allow students to craft course exactly like this with greater flexibility so I fail to see the purpose of developing Option B over it.	This is, I believe, the best option. It streamlines the current Science Matrix while providing a combination of NOS and content standards. This will allow schools to tailor courses for more students to provide them all with a broad, foundational course in Science that will allow them to develop regardless of whether or not they are planning to continue with the academic side of the sciences. Again I support this option over the others and would like to say (again) I feel there is no problem with assessing content by exams.	2020-07-03 13:47:26	ANON-FDGN-6Q9F-5	2020-07-03 13:47:26

Teacher	Option C	More flexibility to design courses based on students needs and ability	Little scope for content knowledge to be assessed. MoE and SEG need to provide LOTS of PD and opportunities for schools to work together to develop resources and assessment tasks. It's restrictive - makes it tough for schools with a wide range of students (ability and interest) to develop courses suitable for all.	Bio/Chem and ESS/Physics Why offer some flexibility when option C gives more?	Options all round. The possibility of doing more nature of science stuff explicitly is good, but also having the option to create courses that enables knowledge to be assessed and more importantly, spiraled into y12/13. Y11 will become a meaningless year without the subject specific options, as much as we'd all like to teach more nature of science, the kids and families still want "facts". Success and Y12/13 in subjects like chem and physics doesn't come without scaffolding through the first 3 years of secondary school.	2020-07-03 14:04:59	ANON-FDGN-6Q95-M	2020-07-03 14:04:59

Teacher	Option B	Students rarely come to senior physical science course as well prepared as they do for other senior coutrses. In my 40+ years of teaching experience I have noted a paucity of understanding amongst the teachers of Science themselves. They did not understand chemistry and pgysics well at school themselves by their own admission often. We have to address this and the best way to do it is to start as early as possible with sound teaching of the physical sciences and expose students to as much as possible. The recognition of the need for STEM from the highest national levels surely supports what I am saying.		The only negative is that some students may not choose an option that includes natural sciences which is a loss but not insurmountable. This choice supports all citeria but particularly citeria 3 and 7. These are the best options		2020-07-03 14:13:12	ANON-FDGN-6Q91-G	2020-07-03 14:13:12
Teacher	Option C		Far too vague and wishy-washy.	Pretty good! I do like the option of combining two specialist subjects in one course to do a (for example) Bio/ESS course.	If our intention is to keep Level 1 as broad as possible, then Option C gives us this choice.	2020-07-03 14:24:43	ANON-FDGN-6Q9C-2	2020-07-03 14:24:43

Teacher	Option C	It gives more choice and courses can be designed to meet the needs of a wide range of students and their abilities.	1) positive and negative: limited choice 2) No 3) Ministry needs to provide all the resources and assessment tasks, marking and moderating groups, funding to purchase appropriate resources, PLD's for the teaching staff, advisers/subject specialists.	1) More choices then option A but no information on the standards to be covered. 2) Not clear because the content for each standard has not been released. 3) Ministry needs to provide all the resources and assessment tasks, marking and moderating groups, funding to purchase appropriate resources, PLD's for the teaching staff, advisers/subject specialists. In addition, the ministry needs to make all the tasks password safe for the teachers to stop public viewing. It is too much work for the teachers if they have to design new tasks for each standard. 4) Any combinations will be fine as long as	1) Wider options to choose from. 2) Not sure 3) Ministry needs to provide all the resources and assessment tasks, marking and moderating groups, funding to purchase appropriate resources, PLD's for the teaching staff, advisers/subject specialists. In addition, the ministry needs to make all the tasks password safe for the teachers to stop public viewing. It is too much work for the teachers if they have to design new tasks for each standard. Ministry should look into incorporating Human Biology and Applied Sciences standards (Biochemistry, Microbiology, Biotechnology) to	2020-07-03 14:28:56	ANON-FDGN-6Q9W-P	2020-07-03 14:28:56
Teacher	Option C		There is a lot of prior knowledge required for Level 2. Removing the strands from level 1 minimises the importance of this content	I like the combinations of ESS + Bio and Phys + Chem		2020-07-03 14:38:42	ANON-FDGN-6Q9M-C	2020-07-03 14:38:42

Teacher	Option C	More options & flexibility to cater for our diverse range of students. Students can choose what they are interested in. Nature of Science can & should still be taught across all Science programs.	Negatives- One size fits all approach does not best serve needs of the students. Lack of flexibility in curriculum development. Too social sci-ency.... Standards would be too big & students would lose focus. Limited options to assess- inequitable	Negative - as above. -lack of flexibility in curriculum design& delivery	Positives- - allows for more flexibility	2020-07-03 14:48:40	ANON-FDGN-6Q9R-H	2020-07-03 14:48:40
Teacher	Option C	It will give the best opportunity for students to achieve credits.	This puts students in a box of having to learn all strands, even if they're not taking science after secondary school.	This is a good middle ground, and allows for a bit of individualization, but not the best for the highest student achievement.	This is the best solution, so that all students have the opportunity to achieve as many standards as possible.	2020-07-03 17:34:35	ANON-FDGN-6Q98-Q	2020-07-03 17:34:35
Teacher	Option C	greater flexibility in course design and differentiation for needs of students	teachers know exactly what is required in terms of the 4 standards. Decision is made for them. Lack of flexibility in selection for students to meet needs of different ability students.	more flexibility for course design/ assessment to fit the teachers strengths/ students interests. More ability to select standards to build differentiated courses by content/context rather than all students on same (option 1)	more flexibility for course design/ assessment to fit the teachers strengths/ students interests. More ability to select standards to build differentiated courses by content/context rather than all students on same (option 1)	2020-07-04 08:52:44	ANON-FDGN-6QRN-6	2020-07-04 08:52:44

Teacher	Option C	This is the option that seems to provide the greatest flexibility to teach and assess knowledge that is required for success in the sciences. It is the only one that I can imagine would provide the opportunities to design courses that work for the range of learning needs in New Zealand. I have many questions, still, though. Why does a course need to be 50:50 internal and external? For some of our learners the ability to time assessment for mastery (as is possible with internals) is a good tool for building confidence and having successful outcomes - thus we run all internally assessed options for these students. For others an opportunity to demonstrate mastery of a set of fundamental concepts in unfamiliar and unexpected contexts, as provided	Criterion 4 is going to be a big issue. While it is conceivable that courses could be designed to teach all students the required fundamental science knowledge required for L2 and L3 and beyond through a course assessed with these standards, designing such courses will be very complex. A major mindset shift would be needed from building courses around the requirements of assessment, to assessing only those parts of our teaching that match the requirements of the assessment. I suspect that this will not happen - typically departments design courses starting with the assessment and working backwards - i.e. what learning objectives, activities, formative assessment, will allow students to progress towards the desired outcomes in the assessment. If all we are assessing in a course is the nature of science, then a likely	My concern here is - what will the standards include? With two physics standards available at level 1, what will be prioritised? What will be left out? If NZQA will design the standards, how will these decisions be made? If the standards are broad and open - i.e. the standards set out approaches only and does not prescribe what concepts/content are to be assessed, how will differences in assessed content (and quality of different schools' programmes/assessments) be managed and moderated? To what degree will schools be left to interpret the standards and design assessments themselves?	See my comment under "Preferred option" above.	2020-07-04 12:52:44	ANON-FDGN-6QRS-B	2020-07-04 12:52:44

Teacher	Option C	Option A could lead to inexperienced teachers adopting a very 'social science' approach with essential concepts and content (for further study in Chemistry, Physics, Biology etc) glossed over or completely overlooked.	I would be concerned that adoption of this model could lead to Science becoming a 'social science' with watered down contexts. The real push towards the 'Nature of Science' strand has been at the expense of the contextual strands. My background is 14 years teaching in primary education, 10 years lecturing at a College of Education (in Science and Mathematics) and currently HOD Chemistry - teaching Chemistry and Science. I am really concerned that unless sufficient detail is provided the curriculum will become a very watered down soft option - and NZ students will be well behind the rest of the world. While I appreciate that the Ministry and Subject expert groups have a vision that Level 1 be a "broader, foundational qualification" - I suspect that Option A would definitively be "broader"	The over emphasis on the 'Nature of Science' strand is risky and open to much interpretation. This is a more subjective strand and very much open to interpretation. I think the contextual strands should be given greater credence and then the NOS strand 'woven through' rather than the NOS strand being the 'driver'. I have little confidence in some of the 'experts' producing the new standards. Some of the Specialist science subject committees are staffed by teachers who have not even taught the subject - I would have thought that 'having taught a subject' would be an essential	I support this model mainly because, while giving flexibility to schools, it maintains the contextual strands as separate areas. Each area has essential content and skills that are fundamental to studying Chemistry, Physics, Biology at advanced levels. NZ curriculum needs to ensure that the content, concepts and skills taught are among the best in the world.	2020-07-04 15:20:01	ANON-FDGN-6Q62-E	2020-07-02 10:23:58

Teacher	Option C	To be blunt, Option A is the worst solution by any measure and should never have been considered as a "stand-alone" option. Option C allows the most flexibility and choice for any school to adapt and meet the multiple needs of any part of the Yr11 cohort in that community. While option B could work, option C would be preferable as more choice and more variation could manifest in Yr11 programs to help students throughout NZ.	There are no positives to Option A. It is flawed in its very nature and misses the mark on what Yr11 needs to include. The workload issues in the 4 standards are shocking. The draft standards and draft assessments in Option A show a lack of understanding on how students learn and what will be required if they continue studying science at Level 2 and 3 or tertiary. Added to this, many aspects of the Option A standards are not assessing what they claim to assess. Thus success in any of these would not be any indicator of future success at Level 2 or 3. Option A should never have been written as a stand-alone pathway for any Yr11 program. It requires other specific subject content and targeted assessment to fulfill the multiple needs of Yr11, and the 7 criteria MoE claim to have used	Option B is the "compromise" between what should never be considered in any circumstance (Option A) and the best option (Option C). Parts of option B may work... but parts may not. There is less freedom of choice for pathways than option C, but it is far, far better than the horrific option A. Option A fails at almost each and every of the 7 criteria the MoE supposedly used, while Option B and C easily meet those demands. As explained below, to ensure success, the MoE will have to commit to funding the subject associations to help support NZ	As explained above: Option C allows for schools to adapt multiple courses that fit the needs of various portions of the Yr11 cohort in that school. This will also allow schools that only offer a "general science" course to decide which critical parts are needed and possibly include 1 (or even 2) of the NoS standards that are workable, assuming those are fixed by that SEG in the next year or so. To assume students in NZ should all take the same exact course with the same exact assessments is deeply flawed. Option C allows for schools to meet the various requirements and also meets each and every one of the 7 criteria	2020-07-05 09:55:39	ANON-FDGN-6QRY-H	2020-07-05 09:55:39

Teacher	Option C	The beauty of the NZC is a school's ability to implement a programme that is relevant for students and provides authentic learning opportunities. While option A provides flexibility in a school to choose the context in which the NoS standards are taught, it does not allow a large school such as ours, with 300+ in each year level, to consider individual student learning needs and alter the context among our cohort. Option C provides the choice that NCEA is embedded in and the relevance that it was intended to have.				2020-07-05 16:30:35	ANON-FDGN-6QRU-D	2020-07-05 16:30:35

Teacher	Option B	It would be out of A or B because I like the freedom to explore where we could go academically as learners rather than assessors. Science should be fun early on not all about content.	+ is not being so focused on content but rather learning. Freedom to go where teachers want. - is going too broad can offer too much differentiation between schools and/or teachers in regards to quality. I liked this when first looking at it but know some of the forums are highly against. Then it becomes a "excrement up hill" type resistance situation. How does this help the kids?	Like above, it avoids specialisation too early in a kid's pathway when they should still be being exposed to as much of the curriculum as possible. In some places where religion is a compulsory subject, allowing a bio/chem or phy/chem course could still expose kids to more areas of the curriculum. Personally I think they should just have general Science at 15 years of age covering all 4 Worlds over arched by the NOS. But it would be handy to still offer schools this option	Nothing different. Do we value content over context/skills?	2020-07-05 18:49:35	ANON-FDGN-6QFC-F	2020-07-01 17:21:02

Teacher	Option C	This is meant to be 'science'. Sure, NOS has its place, but on its own it does not lead to the scientific literacy that is necessary for NZ society. Many students will not study science beyond Y11 - the original proposals are far too 'woolly' to allow for a true understanding, even of NOS.	No positives There is scope for too much overlap between the standards - and seemingly no check of this overlap, so students/ their teachers could game the system. Yes, probably does meet the criteria, but it is the criteria that are flawed at the outset Teaching effectively - a joke, right? By creating so much extra work for teachers then despite their best efforts they will be doing a worse job than currently Far too much internal assessment - even of the so-called external standards	No positives Again, flawed criteria, so whether chemistry links more appropriately to physics or to biology is irrelevant Effective science teaching? Less internal assessment or, at the very least, no requirement for resubmissions or reassessment - in fact the latter should be prohibited Provision of quality resources More time before implementation - so that any new system is actually ready beforehand	There is no doubt but that this is the only acceptable option Yes it does meet the criteria - and by definition is a broader, foundational qualification. Students/ schools/ teachers should be trusted to choose appropriate standards to ensure that L1 science for each individual student does provide suitable breadth. Effective science teaching? Less internal assessment or, at the very least, no requirement for resubmissions or reassessment - in fact the latter should be prohibited Provision of quality resources More time before implementation - so that any new system is actually	2020-07-05 20:45:09	ANON-FDGN-6QR3-B	2020-07-05 20:45:09

Teacher	Option C	NCEA was always meant to offer choice for students and option C offers the most choice. It is also the best option for allowing the construction of imaginative courses, like our current Space and Rocket science course. We offer three Year 11 specialist science courses (Biology, Physics and Space and rocket science) and want to continue to have this option. Option 1 is by far the least desirable.	Too narrow in its focus. Too few standards to choose from.	A better option than A - offers more flexiblility.	It is also the best option for allowing the construction of imaginative courses, like our current Space and Rocket science course. We offer three Year 11 specialist science courses (Biology, Physics and Space and rocket science) and want to continue to have this option.	2020-07-06 09:00:48	ANON-FDGN-6QR4-C	2020-07-06 09:00:48
Teacher	Option C	More choice to meet the specific needs of students				2020-07-06 11:00:21	ANON-FDGN-6QR6-E	2020-07-06 11:00:21
Teacher	Option C	The most sensible option. It provides students with a wide range of skills and it prepares them for higher level options etc.	Limited option and I don't think it prepares students well for their future studies.	No. I don't think it offers what what our students need.	It expands their knowledge in all the 3 sciences.	2020-07-06 12:13:15	ANON-FDGN-6QR7-F	2020-07-06 12:13:15

Teacher	Option C	We cater to a broad level of capabilities and interests. We are endeavouring to provide courses that are authentic and meaningful to our diverse students. The more flexibility we have to develop courses that cater for the needs of our students the better it is for them. We really want to encourage students to have an interest in Science and a very prescriptive course is not going to cut it for many of our students.	From the little I can see of this option, it looks like it will be a one size fits all approach. Simple, but not allowing for variation in needs / interests. The Ministry needs to be realistic in that a vast number of students do not care about or have any interest in Science. It needs to be able to be delivered in a manner that is meaningful and authentic to the groups who access it. A bland, general course is going to be a killer to deliver.	I think it is silly to try and group different aspects together in an arbitrary way. All Science is connected in one way or another. Either you allow the whole lot to be incorporated together so you can explain the links and relationships or you teach them separately. It is just a stupid idea to say chemistry is more like bio or physics or what ever.	This option I believe gives the best opportunity to use NCEA as it was intended in that you can design courses for your learners that reflect their diverse needs. Within and between schools there are a range of interests and needs and if teachers are able to create authentic and meaningful courses to engage learners this would be great.	2020-07-06 15:27:12	ANON-FDGN-6QRG-Y	2020-07-06 15:27:12
Teacher	Option C	just a better range of options so that we can tailor courses to all our science students	Negatives are I cant see me being able to prepare the students effectively for level 2 specialist science subjects	Negatives, Chemistry and Physics are too different to be lumped together as 1. if we put them together then we dont do either of them well.	this one enables our school to pick and choose what topics will suit each group of students best. as we currently have science skills, science studies and science A bands. Though having externals for those less academically able students will not benefit them.	2020-07-06 15:30:35	ANON-FDGN-6QRV-E	2020-07-06 15:30:35

Teacher	Option B	Enables students to have a more in depth exploration of 2 science subjects whilst still having an introduction to the Nature of Science and the scientific method.	Many schools will not spend much or any time on Planet Earth and Beyond strand of teh curriculum.	This gives students the best introduction to science whilst being able to specialise in either physical or natural sciences.	I think this is too broad	2020-07-07 11:54:51	ANON-FDGN-6QR9-H	2020-07-07 11:54:51

Teacher	Option C	I think at this stage it is better to give all science departments as many options as possible and for those schools to test drive their selected option for delivering the science curriculum. I think Option C will give reachers the most flexibility.	POSITIVES ---------- 1. Basically, less marking for teachers. Only having to mark two internals should (in theory) reduce marking load. 2. It will helpful for schools operating in MLE's and are trying to integrate curricula, as the standards are so open-ended, it makes for easier linkage between subjects. NEGATIVES ---------- 1. Huge increase workload for teachers to create assessment tasks, adjust them, carryout PLD with their science teachers etc. 2. A major change for kids, many won't handle the increased demand to write reports. 3. We know there won't be enough PLD given to teachers, so they will end up sacrificing their own personal time (and not get paid for it). It basically does meet	POSITIVES ---------- Same benefits as Q1. But not more flexibility to cover subject-specific content. NEGATIVES ---------- Similar negatives as Q2. It basically does meet the 7 criteria yes. Same comment as above.	Positives: Enough flexibility to allow schools to do some integrated curricula but also offer specialised subjects with specific content (Physics, Bio etc).	2020-07-08 09:08:48	ANON-FDGN-6QRE-W	2020-07-08 09:08:48

Teacher	Option C	This option prepares the students for Level 2 Physics, Biology and Chemistry. Students are better prepared for STEM subjects with a choice and range of Internals and externals. Helpful for students who want to go to University for Core Science, Eng, Medicine Makes logical sense to offer subject-specific standards.	NA	NA	Yes, it meets the 7 criteria for NCEA. SEG's may have to look at the present resources available and assess if some addition or deletion of certain standards may help create a robust qualification. The ITO's, Polytechs, University need their input too. Alignment across the teaching institutions is vital.	2020-07-08 11:10:45	ANON-FDGN-6QRB-T	2020-07-08 11:10:45

Teacher	Option B	Provides the best combination of balancing between keeping things broad but preparing students well for specialising in the Level 2 Sciences (Biology, Chemistry, Physics, Earth/Astro Sciences).	Although it would provide students with a broad taste of all the sciences, it would poorly prepare them for continuing onto the Level 2 Science specializations (Biology, Chemistry, Physics, Earth/Astro Sciences) because there wouldn't be enough of a foundation. This is the current set up that my school is using and we have found that Physics and Chemistry really suffer because it is such a huge jump. We then find a lot of students then choose not to continue it to Level 3 because they were so put off from struggling with Level 2. So long term, this model will not prepare students to continue into the science profession and/or will lose interest.	I find this is the best option to balance between the two factors, keeping things broad but still preparing them for the senior sciences. It's hard to say what would be the best combination. Combining Chemistry/Biology and then Physics/Earth-Space Science would provide a good balance. Each science option would have the same level of difficulty, as I have found that Chemistry and Physics tend to be harder for students to get, whereas Earth-Space Science and Biology tend to be easier for students. It also means that students that are interested in health sciences could take the	I don't like this option because I see the problems that we have at Level 2 will then come down into Level 1. My school only allows students to pick 6 subjects. Some students at Level 2 then picked three sciences, and since they have to do English, that only gives them two choices. It also really narrows their pathways, but granted students that do this are already keen on sciences and want to do something like health care or engineering. If we applied this same model at Level 1, which my school requires them to take English and Math, taking the four science on offer s means that they have no other	2020-07-08 12:10:46	ANON-FDGN-6QRZ-J	2020-07-08 12:10:46

Teacher	Option C	>Schools have the option to offer broad based science standards or specilalised science, hence a personalised learning geared towards students' career path whether be it a strong science foundation or a single science foundation or a broad science foundation. >Provides a greater number of choices for students to decide what course to take based on their interests/strengths. >Provides a more comprehensive learning in specific areas to prepare students for senior high. >Students may choose more sciences to support their science based career. >Students' learning may be facilitated by specialist teachers or general science teachers	Positives: General focus on all four contextual strands means that students will have basic understanding of science and they will be able to make an informed decision on which strand suit their interest, strength and career path. Negatives: >This option is not very different from existing curriculum in many schools where L1 science course comprises of 3 standards; biology, chemistry and physics. Most schools choose standards that supposedly provide a broader, foundational science which unfortunately is focussing on a very narrow area in either biology, chemistry or physics. This sampling of sciences does not provide robustness to the learning of science that students can successfuly carry over to	This is the weakest link. This is for Option A side and Option C side to make concessions to come to a mutual agreement. Although convenient and practical, I find this unacceptable as the middle ground compromises on the desired outcomes. My recommended combination of contextual strands would be Biology and Chemistry make up one subject matrix, and Physics and ESS the other subject matrix. If this approach is finalised, I would recommend for MSEG to: 1. Get the support of all science teachers such as what it is being done now	Positives > introduces more science subjects compared to currently only one general science or the most 2 science subjects in majority of high schools. All high school students should be encourage to take science because it is a necessary precursor to all their other learning. > schools can tailor courses to meet the seven criteria including the vision of NCEA > students have more options; a broader, foundational science learning or a more in-depth learning in a branch of science or both. > allows a highly personalised learning experience where students may choose more science subjects. > more time may	2020-07-08 15:30:10	ANON-FDGN-6Q9E-4	2020-07-03 12:52:53

Teacher	Option C	Science is not one subject but several. Option c allows for variety and exposes pupils to a more representative view of the range of subjects that come under the umbrella of science			Positives: Wider range/more choice Teachers able to teach to specialism More realistic view of what we mean by “science “ Negatives: Too much for non - science students	2020-07-08 18:47:33	ANON-FDGN-6QRK-3	2020-07-08 18:47:33
Teacher	Option C	more flexible for providing a variety of contexts with emphasis on different disciplines to match student interests and strengths. More specialised subject options allow students to make clearer and more informed choices when selecting Science options at level 2 - better aligned to their interests and strengths.	doesn't even come close to the goal of a broader qualification	the desire of the ministry to try to ensure its version of effective is implemented just gets in the way of student choice and limits teacher options to deliver a student centred program. Lets the schools decide the blend of subjects based on student voice - more options not fewer so option C is better	schools are able to teach science effectively - they have been doing so for years despite ministry interventions	2020-07-08 20:24:50	ANON-FDGN-6QRF-X	2020-07-08 20:24:50

Teacher	Option A	Option A holds truer to the change package suggested for NCEA - particularly at NCEA Level 1, of fewer larger standards, and removes the clutter. The 'content' knowledge of Science (other 4 traditional strands) will still be taught and used as a vehicle for the Nature of Science learning and assessment. The 'content' itself does not need to be separately assessed to be valued, and this is a shift we need to make as a sector and help bring the community along with us. To go with either Option B or C is a backwards step of what this change package is trying to achieve. Teachers who don't think they'll know what to teach their students need to understand that the NZ Curriculum, should and always has, guided us, and we should need standards to tell us what to teach.	- Positives: removes clutter, focuses on NOS (so important!) - Very much meets the 7 criteria - less is more! - Support Science teachers to understand the NewZealand Curriculum to guide teaching and learning.	Negatives - if schools are given the option, they will ignore the NOS standards and focus on the content ones, or worse, try to do all of them, and we're back to over assessing students. I don't think groups the content strands together in one rigid way would work - different combinations work for different contexts, and this would not be flexible enough.	I don't think this meets the criteria for a broader foundational qualification, and is just what we are currently doing,	2020-07-09 10:38:01	ANON-FDGN-6QR1-9	2020-07-09 10:38:01

Teacher	Option C	General Science is restrictive for students choosing to take more specialist courses at Uni. It's better to start specialising while at High School. Students won't come up through secondary with an I depth grasp of the specialist courses as teacher selection will narrow by school when hiring science teachers. Stem workers are in short supply already and this will further limit availability of suitable workers if you you choose Options A and B.	As I have said above, this Option will least prepare students for STEM employment and job opportunities. This choice will result in Postcode Education because rural schools especially won't be able to attract more specialised teachers of general science and thereby limiting educational opportunity for students to get broad science education. Option A is a dumb and short-sighted idea!!!	So there is a need for more Phyics teachers and workers that require Phyics for employment and your big idea is to limit science taught in schools to three specialist subjects. It doesn't take a genius to workout which subject is going to dropped. Rather than restrict a most necessary subject, how about help schools to create more Phyics enthused students. You pick this one, will show the public that you are doing this for money-saving purposes, not for the educational integrity.	Option C is the preferred option as it gives equal withing to specialisations that are being required in the workforce. There is not enough Science being taught to students from the point of view of producing scientists. The world is short of Physics. Radiologists, microbiologist etc. Rather than narrow what's on offer, open up the fields to students and provide them with more access.	2020-07-09 11:20:58	ANON-FDGN-6QRC-U	2020-07-09 11:20:58

Teacher	Option C	It is the only option that allows for the robust development of knowledge in the specialist Sciences, which is the key to success in the senior school when Sciences specialise.	Education needs to be to a standard. This option removes the need to learn set content. NCEA has already had a large revamp where a large amount of content was removed from the general Bio, Phy, and Chem externals. This lead to a decline in our PISA results. Option A would destroy NZ in an international comparison.	For aspects of this I do see potential. However, without the detail of what the set content would be in each standard, it is hard to have faith in how the SEG would develop this after looking at their previous work.	This is clearly the only option that will develop knowledge to a higher level, as such it will be the most robust approach.	2020-07-09 20:55:59	ANON-FDGN-6QRW-F	2020-07-09 20:55:59

Teacher	Option C	I believe this will suit the wide range of students that we have, enable a high percentage of students to be able to choose and be successful in Science	Positives are that it covers NoS well. Negatives are that it seems very waffly I would like to see a lot more time given to teachers before this goes to the students, with the professional development required to know exactly what it is the students need to know so we can confidently facilitate the students' learning. Resources that we can actually use would be amazing	It's a bit of a compromise on both so doesn't really hit any aspect well. I don't think Bio/ESS and Phys/Chem should have to be pigeon holed together. All four should be interlinked with each other so we should have the ability to organise it however we want.	I love this option. To me, this reflects the NCEA vision. The students have a wide range of choices that fit them individually. Schools and teachers have a wider range of possibilities depending on their students and their school. Again, for any change, I think we need to learn from when we changed to NCEA and ensure there is plenty of time and resources for teachers to feel confident in what they are teaching and what the students need to learn to ensure it is a successful change	2020-07-10 09:24:41	ANON-FDGN-6QRM-5	2020-07-10 09:24:41

Teacher	Option C	Required to produce the range of courses that meet the needs of our students.	Contexts/standards remain broadband open to interpretation. To hard to choose this subject without it having being developed. Would prefer to go back to a general level 1 exam (school C model) 50%. With optional internals (choose from 2? Modifiable to meet student interest) 50%. Or at least go to phys chem bio geo astro from the first ncea science matrix (before realignment).	Worst of both worlds see comment above.	Too specialized. But without some conformation of a syllabus in option A. (See comment in A). This is what is needed to make a range of meaningful courses that cater to all levels of academic ability.	2020-07-10 09:51:54	ANON-FDGN-6QRR-A	2020-07-10 09:51:54
Teacher	Option C	Required to produce the range of courses that meet the needs of our students.	Contexts/standards remain broadband open to interpretation. To hard to choose this subject without it having being developed. Would prefer to go back to a general level 1 exam (school C model) 50%. With optional internals (choose from 2? Modifiable to meet student interest) 50%. Or at least go to phys chem bio geo astro from the first ncea science matrix (before realignment).	Worst of both worlds see comment above.	Too specialized. But without some conformation of a syllabus in option A. (See comment in A). This is what is needed to make a range of meaningful courses that cater to all levels of academic ability.	2020-07-10 09:52:34	ANON-FDGN-6QR8-G	2020-07-10 09:52:34

Teacher	Option B	Because we can provide a deeper level of specialist knowledge to students needed for future studies (Chemistry and Physics in particular).	I think it would be hard to make everything fit into the 4 standards proposed.	I like the combination of Chemistry & Physics as they are the 2 subjects where more specialist knowledge is needed. It is what we currently do and it is well received at school. Yes Chem and Bio could fit - but it is up to a school to make any combination of the given standards work. Working parties/subject groups: please support us with a range of tested and usable internal assessment options. The work load associated with all of this change is immense.	Flexible, closer to what we have now. A big change from what was originally proposed to schools a few months ago.	2020-07-10 13:12:44	ANON-FDGN-6QZP-G	2020-07-10 13:09:23

Teacher	Option B	It streamlines the mass of current standards into more sensible packages. I think most schools would be able to offer a range of science options for year 10 students from this list.	The intention of the standards is good but I suspect the implementation of them will be a nightmare. Common assessment tasks for level 1 maths have been very problematic so far (to the point that our school has dropped the MCAT enitrely) and if any of these are still intended to be assessed via CAT I expect the same problems. Assessing the other standards via written reports will mean that literacy will be the main determinant of how well a student can do, rather than their science ability. I appreciate that NZQA are open to alternate assessment methods but can imagine these will create major headaches when it comes to external moderation. In most cases the proposed standards lend themselves to being mostly biology centered	Physical and natural world divisions make a fair bit of sense and other combinations could possibly be explored in the core science standards. The core science standards would probably suffer from the same issues described earlier regarding assessment methods. There are many ways schools could package these standards (2-3 different courses could be offered and students choose their interests, or students build their own course from the list of standards). Overall, it streamlines the huge web of current standards	It isn't really changing much from what we currently have. The 4 standards within each strand would be quite specialised and this means that the breadth of the qualification is limited. We would be able to work with this structure, but B is better.	2020-07-10 13:20:50	ANON-FDGN-6QZN-E	2020-07-10 13:20:48

Teacher	Option B	It gives the students enough of an option to get a feel for the individualised subject strands that they may be interested in, without over specialising at too early an age.	Too broad. Difficult to ensure that all students nationwide are being exposed to the same foundational content knowledge.	Yes I think it does meet the seven criteria, and does fit with the idea of level 1 being a broader qualification - whilst also allowing for some sort of specialisation if a student is particularly interested in two of the strands of Science. It also means that students can be well prepared for the senior sciences, assuming that these are not changing also. A negative about this option is deciding which of the science strands should line up - how is this meant to be done in such a way that all choices are catered for?	I also like this option - it was difficult to choose between B and C. Ultimately I went with B as I feel that it does not force students at a young an age to potentially select a specialised Science subject too early. In terms of school timetables, it might be difficult for students to choose two of the specialised strands at Yr 11, as it 'takes up' 2 of their option choices.	2020-07-10 13:58:23	ANON-FDGN-6QZS-K	2020-07-10 13:58:23

Teacher	Option C	Having read the outline of the standards for an all Nature of Science based course I have no faith that any option that does not include fully specialised sciences will prepare our students for Level 2, 3, and university.	Positives: Nature of science standards address many issues that our society has by ensuring all those who graduate high school have a grasp of scientific reasoning and the ability to sort through information themselves as well as think critically. It is broader and more foundational than the current science by meeting criteria 1, 2, 5, and 6. Negatives: Too broad and too writing based (from the standards we saw earlier this year), this will hinder out low achievers and favour girls over boys more so than they already are. Doesn't meet criteria 3, 4, and 7 as it appears so vague and wishy washy that it does not provide a clear path into level 2 and beyond, does not provide pathways for individual learners as it removes specialist sciences, does not support the credibility as it is too vague. People	Positives: Most of the stuff from previous comment, because of the inclusion of nature of science specific standards. Has more flexibility than A so would satisfy criteria 3 a bit better. Negatives: Still doesn't fully satisfy criteria 3. Without seeing the standards also can't comment on how this would be an improvement over the current set up, combination of subjects is weird, would probably be better to have them individual. Still doesn't meet criteria 4 and 7 for the above reasons.	Positives: Keeping specialised sciences allows us to meet all criteria except 6 which would depend on how the standards are structured. Minimal change from current set up reduces teacher workload. Negatives: Still not much better than our current system, none of these options seem to fix that and feel more like change for changes sake.	2020-07-13 13:25:33	ANON-FDGN-6QZY-S	2020-07-13 13:25:33

Teacher	Option B	Having a large pool of different options to choose from (option C) will substantially increase teacher workload. Option A has the potential to inadequately prepare students for the specialist science subjects at Levels 2 & 3. Option B gives more choice, but not an overwhelming amount of choice.	Students may really want to specialise at Level 1 and if they attend a school that is large enough to offer specialist science courses, I believe they should have that option. The assessment, particularly the external assessment, then needs to align to the specialist courses.	I believe this option meets the seven criteria. I think Biology and Chemistry go together better, and so do Physics and Earth and Space Science.	While this option gives a lot of choice and could be designed to fit the seven criteria, it does not seem like much of a change to the current NCEA L1 system.	2020-07-13 14:19:20	ANON-FDGN-6QZU-N	2020-07-13 14:19:20
Teacher	Option C	Allows students to have a broad range of science options. Builds foundation knowledge. Allows good progression from the junior years 9-10.			Provide curriculum progressions from L4 to L6. Showing what success in each subject should like for students.	2020-07-13 15:46:52	ANON-FDGN-6QZ2-J	2020-07-13 15:46:52

Teacher	Option C	It is more specific to meet students' interests. More easily understandable by the general public.	Far too general. Hard for public to understand what it might entail. I do not believe it meets the criteria as a foundational qualification.	Better than A, though prefer C, as it makes use of people's understanding of what Science involves.	More obvious what is entails. More easily understandable by others, parents, students, general public, overseas people. I like the 50/50 split, which is common to all. I think it would be more easily used to give a foundational Science course at L1.	2020-07-13 17:26:31	ANON-FDGN-6QZ3-K	2020-07-13 17:26:31

Teacher	Option B	I have chosen Option B as I feel that more choice on which standards can be taught. I feel that option C could lead to no changes being made in the educational system as standards will start to match up to what they have been already. I would have selected A as the preferred option as I think that if the standards are made flexible and wide enough, they should be able to be done in any of the strands of science, however, to make it more clear for some teachers I think some specific laid out standards with a biology focus, or chemistry/physics may be helpful.	Every school would be doing the same standards (yes they will all look very different because of context etc) but schools will be able to be more connected. It would also benefit students moving between schools during level 1 as they already know what standards have been done/are to come. I believe this does meet the seven criteria, as it is robust and coherent. To ensure all schools can teach science effectively the Ministry and Subject Expert Groups will need to give clear examples of what is acceptable for each standard, give out resources which can be used so that a school does not have to start from scratch if they do not have resources to match the new standards (or at least a starting block that can be adapted). and clear training on the expectations of the	There is more choice in standards which can give better direction for a school, some schools may want to take a single science route. However I think that if the option A standards are laid out correctly and are wide enough to encompass all the strands of science should a teacher choose to use a biological etc example then they should be able to. More choice given to teachers in the standards can, in my opinion, remove the choice of students if we are not careful. I say this because from what I have read of option A, there is a broadness into choices and scope that a class can look into and	I believe that this option is not enough change from previous NCEA standards. It will be good for teachers as it would mean that resources that have been used and created in the past are more likely to be able to be used again somehow, but I think school programmes for science will start to look almost identical to what they have been in the past. I think that fewer new standards being created will give the Ministry a better chance of making the standards easier to understand and better laid out to start.	2020-07-13 23:08:54	ANON-FDGN-6QZT-M	2020-07-13 23:08:54

Teacher	Option C	This gives all the students basic understanding of all four areas of science, Biology, Physics, Chemistry and space science. This allows students to select their specialised areas in L-2 and L-3 while having a basic understanding of the areas that they haven't selected to specialised at higher level. Also it helps other students who have decided not to do any science subjects at all in L-1 and L-2. It is important that this group of students have some basic knowledge of science as it helps in day to day life when they become adults. Those students who would select to do one or two areas to specialise will always need a basic knowledge of other areas as different areas are always linked in someway. So it is important that MOE provide resources			*Positives are less work for students and teachers and less resources to be supplied by MOE. *Negatives are -Students would not get a basic knowledge of different areas of sciences, which will affect their ability to learn their selected subjects inL-2 and L-3 and beyond. -Those students who would not take any science subjects will end up with no science knowledge at all, and this will affect thier future lives. For example they do not understand the importance of personal hygine or do not know the importance of selecting a power saving electrical appliances? -The country will not find suitable	2020-07-14 11:27:12	ANON-FDGN-6QZ4-M	2020-07-14 11:27:12

Teacher	Option C	Under Option C, this allows the flexibility to design different courses that suit the needs of our students, creating solid foundations and preparing them for level 2/3 and tertiary study.	Negative: NOS focused standards will inadequately prepare students for the Level 2 and 3 sciences. With the assessment totally focused on NOS the incentives to thoroughly learn the basics of the separate sciences, and the skills needed to do this, will be lost. Positive: Strong emphasis on NOS, relevance & mātauranga Māori. However, this is still a positive and consistent for option B & C. This will require significant investment by the government in professional development, resource development and support, laboratories, equipment and support for teachers in the form of science technicians.	Compromise between A & C, which could allow for enough flexibility. Not opposed to this option as it is similar to what we currently run at level 1 with the flexibility of mixing standards to make 2 courses at level 1. Better than option A. EG: Chemistry works well with all Sciences - those that want to take Chemistry at Level 2 & 3 would take double Science at level 1. NOS & earth and space standards could be offered at year 10. Course one: PHY IN, NOS IN, PHY EXT, CHEM EXT Course two: BIO IN, CHEM IN, BIO EXT, NOS EXT	Positives: Allows schools to use the great strength and current advantage of the NCEA system. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order to adequately prepare for careers in science	2020-07-14 11:27:57	ANON-FDGN-6QZJ-A	2020-07-14 11:27:57

Teacher	Option C	It offers greater flexibility for schools to design programmes of learning which suit their students.	It is wishy-washy.....Primary school Science. Students are ready for some real learning from expert teachers. It is nonsense to suggest that most students will remember content from Year 9 and 10 and then be able to use this knowledge in their Level 1 assessments. It's just too vague - perhaps foisted upon schools by experts who have not been in the classroom for a while??	Our school currently teaches a Bio / Chem subject and a Physics subject, in addition to a Science option which currently teaches Genetic Variation, Acids and Bases and Mechanics. This gives students great choices. Let's not change what isn't busted!	We can continue to deliver programmes which meet our students' needs and prepares them more appropriately for higher level study in the separate disciplines.	2020-07-14 13:26:40	ANON-FDGN-6QZQ-H	2020-07-14 13:26:40

Teacher	Option B	I like to have the option of some standards that are specialised subjects which could mean there could be the development of different Science courses to be offered at Level 1. This would accommodate those students who wish to continue their learning in Science to Level 2 and Beyond, or a course for those who are less likely to continue on with the Sciences.	Positives are the way learning would be able to be transferred should students move schools throughout the year. It is a broader foundational qualification, however, I am still concerned over the level of literacy that will be required of students for all options. Teaching at a school with many ESOL students and generally low literacy levels with very limited home-based learning support I see these changes will significantly disadvantage this group of students. There will need to be significant support for teaching resources to build the required capability of teachers to teach across such a broad range of contexts. This is particularly relevant for schools with a small number of teachers of whom many themselves may be non-kiwi and therefore unfamiliar with many of the suggested contexts	I like the broader range of standards and the inclusion of specialised subjects as this will encompass the skills of specialised subject teachers more. It will, therefore, lead to improved engagement in the whole process from these teachers who are always also expected to teach General Science at Level 1. I also think it would provide schools with opportunities around course options to allow students who intend to study specialised science subjects in year 12 and 13 to have causes designed for them as well as a More generalised course for those who will not be continuing in Science. I'm not sure that is matters which	I think this option starts to get too messy with too many options. This would cause more issue for students who move between schools. It probably starts to head away from the vision for Level 1 to be a broader foundational qualification. It would require many more resources from the Ministry and Subject Expert Groups to provide resources required to teach effectively. I think this would would lead to a lack of resources which would be damaging for the implementation of these new standards. The energies need to be focused on fewer standards than offered here so that there is a range of high-	2020-07-14 13:45:20	ANON-FDGN-6QZ6-P	2020-07-14 13:45:20

Teacher	Option B	Option A is too limiting. Although most students will still do a general science course at level 1, there are many schools that will utilise the additional split that option B provides. I have not seen much need for option C at the schools I have taught at. (decile 5-7)	Most schools will have a general science course as their main level 1 course. I think that is does satisfy the vision of level 1 being a broad foundational level, that said it is so broad at the moment that teachers are finding it hard to see how it will look in practice.	I think that this is a good happy medium between options A and C. It provides scope for schools and students that still want some differentiation between the subjects. Accelerate programs etc.	This option does not really differ from what is on offer in the current system and certainly does not streamline the qualification into a broader foundation.	2020-07-15 09:55:45	ANON-FDGN-6QZV-P	2020-07-15 09:55:45

Teacher	Option C	I run a Health Science Academy and we use all the different specific science standards to build up this wonderful course. The standards enable me to teach the students in a vocational context (of Health Science) which the year 12/13 specialized science subjects dont allow me to do. Some of our graduates who are now at University say that the content they learnt in year 11 Health Science Academy has been the most useful learning and relevant content throughout all their time at high school. We can only do this with the help of the separate science standards.	This will be in my opinion the worst option and will reduce the numbers of students that will be feeding on to senior sciences. Lower level students love content based learning and at year 11 find some of the more abstract, deeper thinking concepts of Nature of science very difficult to get their heads around. Positive: Students enjoy the practical work involved in nature of science Negative: Favours those students who excel with report writing, disadvantages those who excel with traditional exam/test work.	Better than Option A. Chemistry and Biology would be a good fit for the Health Science Academy OR Physics and Biology. This would enable us to weave in concepts such as Ultrasound and Wave work in relation to human anatomy.	All positives for this option as it enables teachers to create the most diverse courses to marry up to student interest.	2020-07-15 13:29:24	ANON-FDGN-6QZH-8	2020-07-15 13:29:24

Teacher	Option C	For Option C, from the 16 context standards, 4 of them are Physical World (Physics) which would give Level 1 Science students more concrete foundation about Physics concepts.	For Option C, from the 16 context standards, 4 of them are Physical World (Physics) , and these 4 standards (2 external and 2 internal) can be as follow: Mechanics (external standard) Optics or Electricity (external standard) Practical Investigation to find a linear relationship between 2 variables (internal standard) Research project on a device or phenomenon e.g Nuclear Fission and Fusion, Radioactivity (internal standard	Nil	No negatives, just positive because it allows Level1 Science students more opportunities tto prepare them to face the long term challenges of Leve 2 Physics and later Level 3 Physics.	2020-07-15 14:18:29	ANON-FDGN-6QZX-R	2020-07-15 14:18:29
Teacher	Option C	Flexability in course design. Better addresses the contextual strands.				2020-07-15 19:17:44	ANON-FDGN-6QZB-2	2020-07-15 19:17:44

Teacher	Option C	More choice = more flexibility in setting up courses that meet student needs, interests and abilities. At our school (Kapiti College) we have both Science 101 (done by approximately 70% of Year 11s which is designed to prepare students thinking of going on to Level 2 Bio / Chem / Phys), and Science 102 (more practical based and with topics of more everyday interest and relevance which leads to Science 201 (easier Level 2 internals from across Bio / Chem / Phys / ESS). The limited numbers of standards from A and B will make tailored courses far less viable. However, we also have Health Science 101 designed to increase the success and numbers of students looking at careers in Health industries. Students do this as well as Science 101 so for it to run extra standards	Concentrates on the nature of Science to the exclusion of everything else. With only 4 standards it reduces the emphasis on coverage of content needed for Level 2 specialist Sciences. We will end up with students deciding to go into Level 2 Bio / Chem / Phys without realistic ideas of difficulties of those courses or the content that they need to know. While we can still teach content we will have the difficulty of teaching content students will not be assessed on and the consequent lack of student motivation that brings. Also, if a student comes in from another school we will be able to see their transcript and success of the given 4 NoS standards but will have no idea of what contexts and content they have covered. It only gives us 4 standards with which to devise courses to engage the entire	Better than A in that it provides more choice so gives the chance to provide more tailored courses but still restrictive. In terms of combination of strands any combination will have strengths and weaknesses. For students interested in medicine - Chem and Bio. For engineers - Phys and Chem. Would schools have the option to mix and match? I don't see that ESS will be that interesting to most students looking to go on in specialist Sciences at level 2 as it simply isn't as popular and most schools don't have Level 2 ESS courses. (We have a Level 3 Science course that is mostly ESS and it does OK but most students doing it are those who found specialist Bio	I have copied this from the box as to why Option C is my favoured option. All I would add is what I added to the feedback about option B - the need for the standards to be as clear as possible so moderation feedback is consistent over multiple years. More choice = more flexibility in setting up courses that meet student needs, interests and abilities. At our school (Kapiti College) we have both Science 101 (done by approximately 70% of Year 11s which is designed to prepare students thinking of going on to Level 2 Bio / Chem / Phys), and Science 102 (more practical based and with topics of more everyday interest and relevance	2020-07-16 09:20:59	ANON-FDGN-6QZZ-T	2020-07-16 09:20:59

Teacher	Option C	I believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. It is important for schools to have choice - for example, whether they offer the broad Nature of Science standards being proposed, or choose to offer the more specialized Physics, Chemistry, Biology or Earth & Science standards, or to choose whether they offer a blend of these	Positives: ● Strong emphasis on NOS and relevance of science to the ākonga ● Strong emphasis on mātauranga Māori Negatives ● I do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA ie How the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification. The change to both external standards to be a common assessment activity based on unfamiliar contexts and marked by NZQA , sounds good but there is a wealth of science educational research devoted to the fair assessment of NOS, with an acknowledgement that summative assessment of NOS is very difficult. The challenges required to	Positives ● A compromise between Options A and C Negatives ● As with many compromises it will probably satisfy neither set of goals	Positives ● Allows schools to use the great strength and current advantage of the NCEA system,i.e tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order to adequately	2020-07-16 15:56:22	ANON-FDGN-6QZF-6	2020-07-16 15:56:22

Teacher	Option C	It provides more flexibility for students and teachers, which is one of the core ideals of NCEA.	Too restrictive	Okay, but seems like a backwards step to the old pure science.	Allows for better pathways through to level 2. Allows schools who teach level 1 biology, chemistry etc. to do so. Provides more options for students and teachers.	2020-07-16 16:30:51	ANON-FDGN-6QZA-1	2020-07-16 16:30:51
Teacher	Option C	It gives schools more flexibility so that it can help customize the teaching program that best fits the students. I am very concerned that the "nature of science" proposal will make the gap between Level 2 Bio/Chem/Phys too much and would have a large impact on our more able students who want to progress in Science.	I like the concepts, however the workload associated with this large shift is too great. It would make more sense to try to introduce these concepts in year 9 and develop this from there. There is a concerning view that this option will have a large impact on our more able students and would weaken the academic ability in Science. If this option is pursued, our school will probably look at not assessing at Level 1, and develop their knowledge for L2 Sciences.	More options allow for some flexibility required, and the courses will hopefully help bridge the gap between Level 1 and Level 2. I do not think Earth science and Biology go together. Would Bio and Chemistry not go together better (bio chemistry is a big area for the future), and physics/earth science go together better.	This is my preferred option. Lots of possibilities for flexible learning programs that suit the abilities of students. It will help bridge the gap between L1 and L2.	2020-07-16 21:10:14	ANON-FDGN-6QZ5-N	2020-07-16 21:10:14

Teacher	Option A	I have recently returned to the NZ education system after 15 years teaching in Cambridge IGCSE and IB international schools in Turkey, Japan & China. My general opinion of the current system for science education in NZ is poor. My main criticisms are that the science curriculum has been dispersed too widely into discreet standards, most of which never get taught. Further, those that do get taught often don't get learnt as students are actively rewarded for opting out of standards that require more effort, as they can make up credits with softer options. I find ridiculous, the notion that schools are providing greater pathways for student success by offering different combinations of multiple standards. What success is avoiding learning? Either the curriculum is worth teaching, or it	This option allows best for the focussing of all local and national resources into a robust curriculum where resources and ideas can be created and shared. While there is the potential for poor vertical alignment into level 2 & 3, I believe this already exists with the current "pick and choose" system, and that this alignment will actually be easier to achieve within a more focussed approach. All that is really needed is resources for possible learning and assessment activities, and models / alternatives for achieving good vertical alignment over the four standards. The MoE should require schools to create vertical alignment documents, but also provide multiple exemplars for this. The potential for local adaptations is excellent with these standards	No thanks. This option just heads back in the direction of keeping things as they currently are. This will make many teachers happy, but schools don't actually exist to serve the needs of teachers. All you will get here is avoidance of change.	As for option B, further amplified.	2020-07-17 13:38:05	ANON-FDGN-6QZ1-H	2020-07-17 13:38:05

Teacher	Option C	Option C is my preferred option. It provides the teachers the potential to create a range of science courses which will best suit the needs and pathways that the students are wishing to follow in Year 12 and 13 and university. If they don't intend to follow a science route then they have the option to do the Science NoS route. However, in many schools there will be a lot of students who wish to follow the level 2 and 3 sciences pathways right into university. Therefore those schools which have the whole range of abilities of students will be able to provide a wider choice of science courses at level 1 which will provide an appropriate foundation. However I resent the 50:50 internal /external split. If students are wanting to carry on with three sciences they should have the opportunity to do "real"	My question is" "Why the insistence to condense down all five areas to just one subject whilst no other curriculum is having such a drastic approach put upon them?". The skills required for biology are very different from those of Physics so why are you trying to put them in the same category? It doesn't make sense. Also, by shrinking us down to such a limited number of standards - all of which are assessing NoS, how are we going to suitably prepare our students for Level 2 subjects? For all of the sciences we need to provide them with a solid foundation from which they can build more concept ideas in level 2. The provision of only ONE standard in which recall/knowledge is being assessed is not enough for the majority of students. Also, The removal of traditional examinations at the end of the year is a	Although better than the previous options I don't like the fact that the teachers are not able to create courses which best suit their students. This forces our arm to merge chem and physics and bio and ESS which might not work in all schools. Its too restrictive.	Option C meets the 7 criteria. The greater number of standards in specialized areas provides the teachers/schools the flexibility to support all students in an appropriate way- determined by the pathways/interests that they are wishing to follow after year 11. The provision of a wide range of choice of subject specific standards is good and essential because teachers will be able to create courses which will provide a sound foundation for students. ie the students will have an appropriate basic level of knowledge and understanding for level 2. I would prefer their to be more external assessment in the courses	2020-07-17 17:42:17	ANON-FDGN-6QZC-3	2020-07-17 17:30:38

Teacher	Option C	Offers the greatest flexibility, socio-economically, culturally and academically, allowing schools to continue to tailor courses that suit their cohorts, and will best prepare the students' for their future option pathways.	While Option A does not preclude the delivery of an academic course, the assessment options have the potential to distract learners away from the essential content learning and focus them on passing a skills test. Based on evidence of a similar approach used with year 10s, the absence of a content based assessment at the end, resulted in few students committing the facts to memory and resulting in poor progress along a spiral curricula pathway. Evidence shows that children's' ability to process abstract concepts develops over the ages 11 - 16, making the consideration of abstract scientific ideas at this stage an essential practice ground for sharpening these skills. This places a degree of importance on the NOS but Option A feels like it focuses on thinking skills at the expense of	Option B has potential but places limits on the content that can be offered in areas with specific socio-economic, cultural or academic requirements. However, if we are to limit the options, a possible upside would be a shift away from separate sciences and have external exams that integrate specified science content from all areas. Paper 1 could be made up of short answer questions from all four areas and then Paper 2 could be an options paper from which students choose two long answer questions. This would allow for a range of questions that will connect with local issues.	This is the most similar option to the current offering providing teachers and students with confidence about what is expected. It provides enough options to tailor courses to suit learners travelling along a variety of pathways through school. Assessment would be limited to content that is specific to the standards covered by the students and maintains the false segregation of the disciplines. It would allow for greater depth of exploration and development of core knowledge. The requirement of 50/50 Internal vs External is arbitrary and unsubstantiated and should not be enforced. Stress related issues for students have	2020-07-17 17:59:12	ANON-FDGN-6QZW-Q	2020-07-17 17:59:12

Teacher	Option C	Flexibility is key... I suspect most Colleges will consider dropping L1 and moving to a L2 course over 2 years. Thanks HOD Science	Very hard to judge without the standards and tasks... Seems limiting	Dont like the idea of chosing 2 specialist areas	Love the idea of specialising in all four areas. Then students are exposed and chose @ L2	2020-07-17 20:35:12	ANON-FDGN-6QZM-D	2020-07-17 20:35:12

Teacher	Option C	Maximises opportunities for differentiation in student interests, abilities and capabilities. eg. we currently offer 5 science programmes .. EPIC science/math for least able (5Int), Science (2Ext/3Int), Chem (3Ext/2Int), Physics (3Ext/2Int), Human Biology (1Ext, 4 Int) Many of our students chose 2 sciences (eg. Physics and Chem, Science and Physics) Maximises opportunities specialisation enhances student achievement and retention The step up to Level 2 science is BIG .. the opportunity to develop specialist knowledge and skills aids student success and hence they continue. 70% of our Y13 students do at least one science with 40% doing chem and 30% doing physics .. I believe it is	I am opposed to Option 1 .. I do not think it could be applied in such a way as to ensure a 'broader, foundational qualification' for all students .. it would disadvantage, in particular, the weak students who would not manage the externals .. and would disadvantage the better students as it would lack the rigor and foundational elements for level 2	I prefer Option 3 .. however Option 2 would be a compromise between Option 1 and 3 .. it would be workable .. as there are more opportunities for specialisation and differentiation. Students could take 2 science options to cover foundational concepts needed for all Level 2 sciences.	As stated already .. Option 3 Maximises opportunities for differentiation in student interests, abilities and capabilities. eg. we currently offer 5 science programmes .. EPIC science/math for least able (5Int), Science (2Ext/3Int), Chem (3Ext/2Int), Physics (3Ext/2Int), Human Biology (1Ext, 4 Int) Many of our students chose 2 sciences (eg. Physics and Chem, Science and Physics) Maximises opportunities specialisation enhances student achievement and retention The step up to Level 2 science is BIG .. the opportunity to develop specialist knowledge and	2020-07-18 09:32:31	ANON-FDGN-6QZR-J	2020-07-18 09:32:31

Teacher	Option C	Science covers a huge range of topics and we would lose the chance to teach many of these with your other options. We must continue offering the single-science strand in Level 1 to allow for differentiation. This will give us more flexibility with our programmes and allow us to cater to our more able students. We will also be able to develop programmes for groups of students that are geared to their interests rather than a one-size-fits-all approach. More specific standards and tasks will also make moderation fairer.	Positives - Possibly a more defined relationship with te ao Maori; Based on 'Big Ideas'; Ties in with the our junior curriculum programme – e.g. NOS assessments; Assess externals when ready and not at the end of the year?; possibly better for weaker Science students Negatives - Activities are too general and simplistic – especially for more able students; Huge increase in teacher workload due to extra marking, moderation and re-planning; Decrease in authenticity for all of these standards will be an issue - assessment unfit for purpose; The assessments don't flow into Level 2 and 3 specialised subjects; May discourage students from studying Science at a higher level and entering Scientific professions; May discourage people from entering and encourage	Positives - Merging subjects together could allow us to demonstrate more links between them. Negatives - Many the same as before. Fewer standards offered than current curriculum; What will the standards look like?; Increase in teacher workload; Decrease in authenticity for all of these standards will be an issue; How will these assessment modes flow into Level 2 and 3 specialised subjects?; May discourage people from entering and encourage people to leave the teaching profession; Will more schools opt not to offer Level 1 Science?; Decreased focus on a set of consistent Knowledge /Content when it is	Positives - More standards offered - more choice developing programmes; Fits with the model of 50/50 internal/external nicely; Keeps the single strand focus for schools who wish to maintain this; Allow us to differentiate and cater to more able students; Offers flexibility in programmes we can offer across the cohort; Can be more inclusive for reasons stated above; Takes the grey-area out of teaching certain standards that are too broad and general; Depending on how the tasks are structured, this may not greatly increase teacher workload; Will not affect authenticity of the tasks; Will enable us to cover of depth and	2020-07-18 12:02:49	ANON-FDGN-6QJP-Z	2020-07-18 12:02:49
Teacher	Option C					2020-07-18 13:40:01	ANON-FDGN-6QJN-X	2020-07-18 13:40:01

Teacher	Option B	Greater flexibility in choice to design courses that offers specialised contextual standards without the need to develop new units and assessments for each of the standrads e.g. it allows some common standards to be done in different Year 11 courses as well as specific ones. The most important improvement over option A is that it provides a much better balance between the Nature of Science and Contextual strands. Knowledge recall in Option A was too dismissed.	Option A provides less assurance of credibility given the greater variation in tasks between schools and hence accuracy of marking to the 'standard'. I think its big focus on 'local issues/contexts' can mean that students miss out on developing the broader curriculum base needed for Level 2 and 3. Teachers will inherently focus more on the issue, the assessment etc. It makes a massive increase in workload too to develop four new standards that incorporate the local area as well as incorporating the range of contextual strand concepts to provide the pathway to Level 2 and 3. If this option was taken up, the guidance through NZQA with exemplars etc would be a huge undertaking, especially the externally based standards.	Positives - ability to provide a broader range of contextual concepts in the externals that could be made relevant to local curricula where appropriate. This would provide a better pathway foundation to Level 2. Negatives - not sure given I haven't seen the external standards Combinations - Biology and Chemistry fit together more cohesively e.g. environmental science, human biology. Chemistry and Physics combination	Positives - allows a lot of subject flexbility, greater focus on contextual strands explicitly as opposed to option A where Nature of Science seems to dominate. Negatives - hard to know when we haven't see the standards. If the objective is to have a broader knowledge of Bio/Chem/Phy at Level 1 then having very specialised standards could get away from this. Currently at Level 1, most schools offer the three main standards as opposed to a whole lot of specific standards.	2020-07-18 15:17:31	ANON-FDGN-6QJS-3	2020-07-18 15:17:31
Teacher	Option B	Provides opportunity to run two to three science courses.				2020-07-18 15:37:01	ANON-FDGN-6QJD-M	2020-07-18 15:37:01

Teacher	Option C	This option provides the most flexibility and content to meet our school's needs. Students will be able to take double Science and prepare adequately for levels 2 and 3. (This is a presumption as we have not been given any hint of what material the new proposed standards may contain but having seen exemplars of standards for option A anything has to be better than that)	Positives: This course or parts of it could easily be completed by year 10 students. This would allow schools to design their own year 11 Science courses to better lead into levels 2 and 3. Negatives: The course lacks content and direction. It covers skills that are taught to students in years 7-10 and appears to be a "dumbing down" of Science. There would be no consistency of content covered from one school to another for each standard. This option would disinterest the majority of our students and turn them off Science. Boys love clarity and this course has none. Consequently we would find it difficult to maintain our high retention rate of students into senior Science. This course offers 4 internals, two of which are masquerading as externals. The 7 criteria. Criteria 1 - yes, the opportunity for	Positives: Probably has more specific content (hard to know, no details provided). Allows students to take double Science. Presumably there would still be a 50/50 split regarding internals and externals although this option does not explicitly state this as option C does. It is not option A. Negatives: Not enough content for each of the disciplines but probably workable. Criteria 1. Yes depending on the content. 2. Yes- less chance of overlapping material 3. Yes - better than A, less than C. 4.Yes as for A 5.Yes - depending on content 6. Yes- as for A 7. Potentially yes, as long as externals are proper exams	Positives: Probably has more specific content (hard to know, no details provided). Hopefully this option will allow a proper foundation for levels 2 and 3. Allows students to take double Science. It is not option A. Negatives: Best of the three options but there are still too many credits attached to internals with all the problems, work and inconsistencies between schools that that brings. Criteria 1. Yes depending on the content. 2. Yes- less chance of overlapping material 3. Yes 4.Yes as for A 5.Yes - depending on content 6. Yes- as for A 7. Potentially yes, as long as externals are proper exams	2020-07-18 15:45:12	ANON-FDGN-6QJY-9	2020-07-18 15:45:12
Teacher	Option A	Simpler less pressure and assessment				2020-07-18 19:07:27	ANON-FDGN-6QJU-5	2020-07-18 19:07:27

Teacher	Option C	I am an ex-tertiary lecturer and my husband is a professional scientist. Science knowledge and understanding is important for the future.	It is a broader foundational qualification and the sector should find itself more capable of delivering the subject. However it may push the content knowledge issue further down the road.	Essentially all science is interlinked but the difficulty is teachers working across sciences where they may have little or no back ground. However this may be a suitable compromise option.	Put simply more subject teachers would need to be trained possibly requiring the return of a training bursary.	2020-07-18 20:41:50	ANON-FDGN-6QJ2-2	2020-07-18 20:41:50
Teacher	Option C	Gives students the chance to try each of the subjects we offer in level 2 so that they can gain an understanding of which one(s) will be best for them.	Far too broad and I'm concerned for the massive disparity in how schools will teach and assess to the point where grades are not comparable	Why are we forcing a square peg into a round hole by saying chemistry and physics are the same subject - why not let them be different ways of looking at science. Just seems confusing for the sake of it. No harm in just keeping them separate.	There needs to be set contexts and ideas that all schools can teach to like there currently is with the standards.	2020-07-18 22:03:44	ANON-FDGN-6QJ3-3	2020-07-18 22:03:44

Teacher	Option C	It provides our school, teachers and learners more flexibility to develop a variety of courses to meet the variety of needs/demands from/for students. As an example, we currently offer 9 half year (semester) year 11 science courses that cater to the variety of demands from students.	This option does not meet the first 5 criteria for the vision of NCEA level 1. The standards are too broad to the point where they give little direction to the learning community. Students may have a better understanding of what being a scientist involves however, they would be limited in their ability to understand science concepts that are fundamental to being a capable scientist at NCEA level 2 and 3. Under this option a full re-development of courses would be required with limited support and internal time. This would unnecessarily increase teacher workload and well-being leading to a short term decrease in effective teacher delivery (if we are planning units, this time has to come from somewhere- we are only humans and deserve our weekends and 8 hours of sleep every night). If this approach was	Positives ● A compromise between Options A and C Negatives ● As with many compromises it will probably satisfy neither set of goals	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount	2020-07-19 09:59:28	ANON-FDGN-6QJ4-4	2020-07-19 09:59:28

Teacher	Option C	Kavanagh offers 4 subject choices at Year 12/13 and only general sci at Year 11. There is scope for even more options at Year 11 (bio, human bio as well as many other variations that could be possible). We believe that students should have choice. This allows for students with diverse needs and backgrounds to engage in science which, obviously leads to future study, jobs, and careers - the reason why we all teach - to prepare students for being global citizens. Students should be prepared to contribute to society and also understand the science information in the media, even if they do not end up in a career that specifically incorporates science. They need a sound understanding of process to make informed choices. The NZC mostly gives a well	Positives: This gives an opportunity for cultural relevance and more of a focus on NOS so hopefully a move away from mostly literacy-based assessments? NCEA is far too literacy-based, and needs more skills-based learning, particularly for boys. Clearly there is less assessment throughout the year, so therefore, there is a reduction in workload both externally and internally - which clearly reduces costs to the ministry. Negatives: A very narrow course - not a lot of scope for specialists almost too NOS based - there needs to be a balance between skills-based learning and robust academic processes that provide choices to build towards further study and career options I don't think it meets any of the criteria. It simply	Positives: It is a compromise between the two options and therefore has similar positives to above. Negatives: It simply does not go far enough. We need to aim high from the beginning and ensure that we have a first-class education system to meet needs at all levels of society both culturally and academically. I cant see how it meets many needs of the 7 criteria. Physics and Earth and Space Science seem to go better together? Bio and Chem have some overlap with cells/enzyme (catalysts), rates of reaction (of transport for bio)	discussed above - strongly in favour of this option!	2020-07-19 11:45:48	ANON-FDGN-6QJJ-T	2020-07-19 11:45:48

Teacher	Option B	Blend of NoS and contextual	Positive: - flexibility for schools - broad standards (fitting the criteria) - less focus on prescribing what content needs to be learnt Negatives: - relies on schools designing / planning courses and standards - this may not be consistent across schools, some teachers/schools may need upskilling in this way of thinking.	Positives: - blend of the NoS with the key ideas/contextual - still meets the 'broad' criteria I like the suggested combinations - they fit together well. Would schools be able to combine standards across the areas in courses e.g. a physical + natural + NoS in one course (general science)?	Positives: - Similar to current structure - less change for schools - is this a positive? Negatives: - siloed/separate context strands - this is not what science/the real world is like, we should be integrating more	2020-07-19 13:33:46	ANON-FDGN-6QJ6-6	2020-07-19 13:33:46

Teacher	Option B	For students: Still allows for the blended thematic approach with a focus on nature of science - providing science for all - but recognises the need for some content specific understanding to aid students with more specific science-based goals. A more balanced approach that allows for the development (by specialists and enthusiasts) of physical science and material science options which are traditionally more difficult for non-specialists/beginning teachers to develop for students with these interests. This option allows for more avoidance and opting out. For teachers: This means that standards can be developed that give support to any non-specialist (particularly for teachers early in their career) and help develop confidence in less familiar areas	Positives: - The more contextual approach should make science more accessible to students - Flexible in terms of contexts -emphasises Nature of Science Negatives: - Having been an science teacher for thirty years and and HOD for much of that time I have witnessed an ongoing trend where teachers simply avoid teaching contexts they are not specialists in or have no particular interests/confidence in. This has, in my experience meant that chemistry and particularly physics contexts are often avoided, narrowing options for students and reducing exposure to wider contexts that students don't get a chance to experience in order to find out if they like them. Support for effective	Positives: -Still allows for highly contextual approach keeping science more accessible to more people. - still emphasises Nature of Science - allows for more robust (and wider range of) pathways to Level 2 -Flexible. Allowing for development of robust localised curriculum including Te Tiriti o Waitangi considerations in conjunction with local iwi. Supporting Teaching and Learning: -Gives a wider range of prepared standards, resources and exemplars to draw from, increasing confidence to use unfamiliar contexts in teaching and learning, so more likely to provide a	Positives: Still gives Nature of science equal footing with contextual strands Robust pathways to Level 2 Negatives: Might give the opportunity to ignore the Nature of Science Strand Might give the opportunity for very narrowly focussed science programs (I see more value in general sciences at Y11 with some allowance for preferences) so could lead to less rich, broad learning programs. Supporting Teaching and learning: Probably easier for teachers in the beginning to build programs but could lead to 'same old, same old' approach.	2020-07-19 13:57:23	ANON-FDGN-6QJ7-7	2020-07-19 13:57:23

Teacher	Option C	Our Year 11 students have a wide range of abilities and interests and as educators we'd know how important it is to develop different courses to meet their academic needs. This can then deal with those students who find Science interesting and interesting and those that find science interested and more challenging. Some students do find externals assessments extremely stressful and struggle to achieve at their best and so standards should give educators a choice to mix any combination of standards, NOT prescribed with 50% external and 50% internal weighting.	This is extremely restrictive for the diversity of students in schools across NZ.	Again this is very restrictive across each individual Science. Chemistry, Physics, Biology and Earth Sciences are individual subjects in their own right and should be given the respect they deserve. There should be are range of options schools have to make up their own courses and therefore the matrix should include all strands. Subjects (eg Physics & Chemistry) cannot be lumped together into one matrix because it may fit for some schools to have a different combination depending on the student's strengths and interests.	This is definitely the best option. It give a good range of options across all the Science strands. It enables schools to develop their own courses according to their strengths and individual character. Chemistry, Physics, Biology and Earth Sciences are individual subjects in their own right and this option maintains the individual uniqueness of each strand. Within this option schools need to have the flexibility to develop their science courses by mixing and matching across subjects. Having a 50:50 split for internals and	2020-07-19 14:56:43	ANON-FDGN-6QJG-Q	2020-07-19 14:56:43
Teacher	Option C					2020-07-19 18:36:25	ANON-FDGN-6QJV-6	2020-07-19 18:36:25

Teacher	Option C	Option C provides schools with the most flexibility to design and implement robust Science courses that are culturally responsive to local contexts. For schools with a large percentage of leavers in Year 12, it also offers the advantage of delivering specialised science concepts at Level 1 NCEA that are relevant to trades, e.g. electricity and magnetism. Option A is simply too generic. Additionally, Option C provides a more rigorous framework with respect to qualifications. Option A lacks credibility and is likely to turn kids off Science with the socio-scientific focus. As proposed, Option A has drifted too close to Social Studies.	One positive - cheap to administer. Too many negatives to list. The proposed course, as currently designed, will not result in equitable outcomes for students at the National level. It's unclear as to which cohort the course is actually aimed at and will provide little opportunity for students to work out if their strengths (and interests) are in physics, chemistry or biology. Although designed to be broad and foundational, individual school course design will lead to very narrow courses that maximise pass rates at the expense of student knowledge and understanding. Pressure from senior management for ever improving pass rates will ultimately influence what is taught as there is no set course/achievement standard prescription with respect to actual	As above, Option B is likely to have similar weaknesses to Option A and will be vulnerable to gaming by schools if not carefully designed. However, if a core of prescribed knowledge is included in the developed achievement standards then it offers a credible pathway forward. This option will result in a much broader base of scientific knowledge, than Option A. Giving schools the ability to create their own combination of subjects would result in the best outcomes with respect to cultural contexts and local needs. I.e. A physics and chemistry	This option provides maximum flexibility for NZ schools to provide robust Science courses that meet the needs of their student body. This is the only option proposed, that provides a robust framework that is internationally competitive and fit for Science education in the 21st century. It is the most expensive to deliver, but will provide the best outcomes for NZ in the long run.	2020-07-19 21:06:40	ANON-FDGN-6QJ9-9	2020-07-19 21:06:40

Teacher	Option C	This provides students with choice! They are able to follow their interests and not be put in a single class with a single focus. This also allows for specific teaching and learning that is needed for students entering L2 senior science subjects.	+: it caters for students who may have a general interest but are not needing or don't want to specialise in a specific strand. Good to keep doors open -: it is restrictive and will not be as broad as it is intended. To cater for the diverse range of students in a single class through the proposed standards will be next to impossible and teachers will resort to the same tests/assessments with no breadth of knowledge being delivered. NO! I do not believe it fits with the seven criteria as I cannot see how very specific information required at level 2 science (specialist subjects) can be taught under the proposed standard headings. DON'T FINALISE THIS OPTION	+: gives students direction in their goals and pathways without faff! But still offers other students a science option. It also allows for combinations of sciences so teaching could become better under a theme or single focus topic. -: still doesn't cater for those students who want to pursue separate sciences in level two. NO! I do not believe it fits with the seven criteria as I cannot see how very specific information required at level 2 science (specialist subjects) can be taught under the proposed standard headings. Specifically criteria 5.	+: This is my preferred option and the positives are simply that it caters for provides options for all students to engage in science and level one with no restriction. It allows for the freedom to choose specialist pathways and the ongoing general interest pathways for all students! -: This may not be a viable option for some schools due to staffing YES! this meets the seven criteria! The ministry needs to ensure that exemplars of potential student work are available so teachers can make appropriate judgements as well as providing physical best practice workshops	2020-07-19 21:41:40	ANON-FDGN-6QNR-6	2020-06-28 01:46:38

Teacher	Option C	This provides schools with the chance to offer a second line of science to those students who have a particular passion for the subject. Many schools already do this. It also means that schools / teachers with particular specialisms will be able to focus on those. It should mean less focus on vast amounts of writing in order for students to meet the standards.	Negatives: Not flexible enough, far too vague in terms of what will actually be assessed. Only the investigation standard looks like it could actually work. Some of the other standards demand too much science knowledge - eg analysing a scientific article as to how genuine it is. This would be more appropriate for a level 2 or 3 students. Students at Level 1 just do not have the background knowledge to tackle this. It has the potential to grind them into the ground and turn them off the subject.	This is better than option A as it is beginning to allow schools some flexibility in what they teach and how they assess students. Still not as flexible as option C though.	This is the best option. Positives: Students with a particular passion for Science will be able to take 2 lines of Science. Schools or teachers with particular specialities will be able to tailor their courses to their locality / and / or student strengths. Students will be able to be assessed on content as happens currently, which will enable a broad grounding of concepts required for Levels 2 and 3 in the Sciences. Equally, the new standards will be able to be used for those schools / teachers keen to engage with them; provided they are clearly explained. (currently they're not, apart from the investigation standard, which looks ok, the other	2020-07-19 21:55:25	ANON-FDGN-6QJH-R	2020-07-19 21:55:25
Teacher	Option C					2020-07-20 07:23:57	ANON-FDGN-6QJX-8	2020-07-20 07:23:57
Teacher	Option C	this is the only option to allow us to prepare them for the different Science strands.				2020-07-20 13:11:39	ANON-FDGN-6QJZ-A	2020-07-20 13:11:39

Teacher	Option C	it provides more options to customise your teaching. this is the only option which provides options from all of the science disciplines.	this option is content empty and will 'kill' science. Too wishy-washy.	better than option A, but still not adequate.	This option is the most comprehensive choice.	2020-07-20 13:16:30	ANON-FDGN-6QJF-P	2020-07-20 13:16:30
Teacher	Option C	I feel that this is the only option that allows us to definitely be able to select standards from all the different disciplines/curriculum strands to adequately prepare students for specialist subjects in Y12-13. The other options are not concrete enough to assure us that this will be possible.	Negatives - inconsistency between schools, very vague at present, difficult for mark schedules to be formed that will be consistently interpreted as sooo many different investigations/topics possible. Makes it too broad I do not believe schools could teach this effectively unless there was NO Assessment for credits - ie a reversion to contextual learning similar to Y9-10 Science. Does NOT support coherent and robust pathways into NCEA Level 2 subjects.	Too limited re no adequate spread across disciplines. Students that want to go on in Y12-13 specialist Sciences will be inadequately prepared in needed knowledge base. Does NOT support coherent and robust pathways into NCEA Level 2 subjects.	yes broader as allows more choice depending on clientele at particular school. Potential to create robust pathways into Level 2-3 NCEA as long as there are requirements to spread units taught across disciplines. Ensure subject specialists -Chem, Bio, Physics teachers advise on teaching strategies for each available standard.	2020-07-20 13:21:11	ANON-FDGN-6QJ1-1	2020-07-20 13:21:11

Teacher	Option C	This is the only option that will ensure that students have the content necessary for future study in all disciplines.	Option A is too vague. It is left up to the individual teacher and school too much so that the qualification is not comparable across the country It does not meet "supports coherent and robust pathways into NCEA Level 2"	It is a blend of A and C and doesn't do either very well.	This is the only option that meets the 7 criteria, particularly "supports the credibility of NCEA as a qualification".	2020-07-20 13:27:25	ANON-FDGN-6QJW-7	2020-07-20 13:26:51
Teacher	Option C	Science is a content based subject, so needs to have specific basic knowledge taught before going on to Level 2.	Science is a content based subject, so needs to have specific basic knowledge taught before going on to Level 2. Does not show robust progression towards level 2. Students needing learning support will not cope well with the reasearch and essays required for assessments.	Seems to be a midway point between A and C, without really having anything different.	Has greater scope for better content learning.	2020-07-20 13:30:41	ANON-FDGN-6QJR-2	2020-07-20 13:30:41

Teacher	Option C	This option provides students and teachers with the opportunity to engage with the nature of Science, while still engaging with enough content to to support robust investigation and allow transition to Years 12 and 13. Without this foundation, only the strongest students will be able to successfully navigate Years 12 and 13, which again introduces inequity.	Nature of Science is a crucial part of Science education, however investigating the nature of Science without the content to back up the investigation doesn't do anything to further Science education overall. This would also not support the credibility of NCEA among various stakeholders and does not give students the building blocks they need to achieve well at level 2 and 3. This will inevitably lead to a reduction in what is possible at level 2 and 3, which will definitely lower credibility of the qualification.	This option allows for a bit more specialization, which would go some way to helping the students be prepared for Yr 12 and 13. However the options are still limited. The subject combinations as proposed should be workable.	This gives the broadest options for students to choose according to their interests and allows teachers to put together different courses to suit the needs of their particular students. I feel this option is best suited to meet the seven criteria. Continued moderation and some external exams will ensure all schools are able to teach Science effectively. Also, promotion of subject groups, such as facebook pages and subject specialty groups provide heaps of assistance to any teacher who needs support. Maybe promotion of these facilities would help teachers get the help they needed.	2020-07-20 14:01:34	ANON-FDGN-6QJ8-8	2020-07-20 14:01:34

Teacher	Option B	Provides a broader perspective to foster scientific literacy while still allowing specific inquiry into chosen fields	I think it is too broad and some students would reach Level 2 without covering fundamental concepts which could compromise their prior knowledge and promote inequality in learning outcomes	I think this option is the most closely aligned with meeting the seven criteria. i would want further investigation into which combination is most suitable, but my immediate response would be Bio and Chemistry together and Physics and earth/space science together.	I think it meets the seven criteria better than option 1 however i would worry that it could become too restrictive, by trying to cover all the content some inquiry based learning opportunities would be compromised.	2020-07-20 14:01:38	ANON-FDGN-6Q1P-7	2020-07-20 14:01:38
Teacher	Option B					2020-07-20 14:08:14	ANON-FDGN-6Q1N-5	2020-07-20 14:08:14
Teacher	Option B	A happy compromise between the 3 options.				2020-07-20 14:09:39	ANON-FDGN-6Q1S-A	2020-07-20 14:09:39

Teacher	Option C	This offers a wider range of subjects for students and teachers to pick from - having only 3 subjects and lumping topics such as chemistry and physics together limits what the students can achieve. Teachers can still choose to include the main subjects, such as biology, chemistry, and physics in their course to give students a well-rounded knowledge. It is unfair to combine subjects as some students may be more capable in one than the other, and could receive a low grade overall, despite being great at one topic (eg. chemistry) but find the other topic (ie. physics) challenging.	I think this would be a very difficult option for teachers to take on. I can understand that it is more focused towards the nature of science and aims to improve scientific literacy, but this could also be achieved the way that level 1 science is now with a few minor adaptations. I do believe that it meets the criteria of being a broader, foundational qualification, but that does not make it good. Students still need foundational knowledge of topics such as biology, chemistry, and physics in the real world, not just focusing on NOS. If this approach is finalised, the ministry and subject groups would need to provide extensive guidance and support to teachers. The standards are too broad, so teachers would struggle to know where to start, what to include in their units, how to assess students etc... - there has been no	This is better than option A, but still has negatives on student learning. Having 3 subjects provides a wider range and a bit more clarity to what needs to be taught, but is still very broad in what could be done. Again, the issue of some students excelling in chemistry but not in physics could see low grades that aren't actually representative of the student's real abilities. Further support and guidance would be needed if this approach was finalised, and new resources should be given to teachers to put them on the right track. I think physics and chem would be the best to make up one subject, then biology and ESS for	This is the best option available, it provides adequate range for students and teachers to choose from and gives the best opportunities for student learning. Having many subjects allows the teacher to craft the science course according to the needs of their classes, and allows the students some freedom in what they choose to do at the end of the year. Although it may seem like there is more to choose from and this might be hard for teachers to know what is meant to be taught, I think there will be more direction and clarity for individual subjects rather than combined subjects. Most teachers should have	2020-07-20 14:15:45	ANON-FDGN-6Q1D-U	2020-07-20 14:15:45

Teacher	Option C	I prefer choices to be fairly granular and tightly defined; option A is far too vague	I appreciate the opportunity to improve teaching in NOS However, I have noted the tendency for QA to produce completely unexpected material when not tied down to clearly defined content by the AS. Given the broad nature of these possible standards I am worried about the possibility of being caught flat-footed by vaguely defined objectives. I am also wary of the potential for such standards to generate possible assessment material which promotes a particular world view (as happened with the Education for Sustainability standards)	Again, increased opportunity for NOS compared to present course. Possibility for considerable flexibility in course design if the QA material is suitable (my confidence in that is not high)	Again, I support a NOS strand. This has previously been fairly well catered for in ESS (my speciality) but rather poorly in physics and chemistry (which I also teach). However, the increased granularity has the potential to better challenge students advancing in the physical sciences. This I see as weaker in option B and possibly neutered in option A.	2020-07-20 14:38:12	ANON-FDGN-6Q1Y-G	2020-07-20 14:38:12

Teacher	Option C	Need to keep with the specialised subjects for those students who plan to work in the science careers. The general science options will not provide the depth of knowledge to help with in Biology, Physics etc at level 2 and 3. Having more standards also allows school to design courses to suit the needs of the students they have at their school.	No as its too board of an approach where all schools will end up doing things different from each other and not meet the curriculum or allow enough depth of knowledge to feed into level 2 Sciences	A better option than C, but will not meet the needs of our highly academic science students who need a greater depth of knowledge of all areas of Science to support their learning	already stated above	2020-07-20 15:50:48	ANON-FDGN-6Q1U-C	2020-07-20 15:50:48
Teacher	Option C	Better mix of standards. Scientific knowledge is additive - content is important				2020-07-20 18:09:22	ANON-FDGN-6Q12-9	2020-07-20 18:09:21

Teacher	Option B	Gives the students and the teachers a good range of options that incorporates the nature of science and the specialised sciences.	Too narrow. No rich learning Does not support NCEA level 2 Not at all credible when other qualifications still assess content knowledge	More options that A Would better prepare students for NCEA level 2 A good ranges of A.S so that teachers have the ability of creating a range of courses Allows for some speicalized subjects along with a general Science course - would have be careful of any cross over between courses.	A big range of options for students Allows for purely specialised courses	2020-07-20 18:55:01	ANON-FDGN-6Q13-A	2020-07-20 18:55:01

Teacher	Option C	In the absence of specific details about how each option would be presented, I have chosen option C because the wider choice of contexts offers a school the most flexibility to create a suitably defined and targeted set of courses for the widest range of ability within a cohort.	Difficult to make constructive comment because lack of information from the Ministry about how this would operate means it remains largely undefined!! Positive : (or is this negative??) So vague you could include anything in it. . . . or leave essential things out ?? Content needs to be defined with specific content and goals to allow meaningful courses to be constructed. Negatives : Many NoS tasks currently tend to be largely theoretical and focus on producing written research or comparisons requiring a reasonable degree of literacy. . . the ministry et al would need to ensure that the tasks do not reinforce an existing gender disadvantage for males who have traditionally been less inspired by and	Three subjects offer wider choices and options than one and appears to be the compromise option. This might be suitable for many schools but I suspect it is still limiting for schools who have a large population with a diverse range of ability. Schools work very hard to place individual students on courses that are the most suitable for their academic ability and temperament. To facilitate this they need the ability to construct a programme which will have enough choice and flexibility to match. Option B offers this to some extent. It could also help give appropriate recognition of the value of specialist subject teachers!!!	Positives : Allows the greatest amount of freedom to create a range of options for students with a range of learning needs and abilities. Schools can tailor/adapt courses to optimise their specialist staff and timetable structures. Negatives : Wider option range means standards need to be well prescribed and moderated to ensure consistency at a national level.	2020-07-20 21:05:46	ANON-FDGN-6QRD-V	2020-07-04 13:20:31
Teacher	Option C	Gives the best of options A and B.				2020-07-21 07:51:18	ANON-FDGN-6Q1T-B	2020-07-21 07:51:18

Teacher	Option C	Option C offers the most flexibility for schools to design courses at Level 1 to meet the needs of their students. It allows large schools to set up a variety of courses at level 1, to cater for individual needs and future pathways and it also allows smaller schools, who do not have the numbers to set up a variety of courses at level1, to tailor their courses to meet individual needs. It provides the best opportunity to build foundations for those students who will go on to study any science courses at level2 and beyond.	My faculty , after discussion, feel that Option A does not allow sufficient flexibility to design courses at level 1 to lead to a broader foundational qualification. The positives is that it does focus on NoS but the negatives are that this is at the expense of a sound foundation for level 2 and 3 science pathways.	My faculty feel that Option B is more flexible than Option A but not as flexible to meet needs of students as Option C. The combinations, whichever are chosen, are putting in boundaries on our courses which are inflexible and unnecessary.	My faculty unanimously favour Option C as the most flexible course which will allow us to prepare those of our students who will continue to study a science at level 2 and also to give our students who do not intend to study a science at level 2 a sound, broad foundation of scientific literacy and competency.	2020-07-21 07:59:27	ANON-FDGN-6Q14-B	2020-07-21 07:59:27
Teacher	Option C	Most scope for all students	Two broad not enough solid science. Takes options away from the more advanced student	Doesn't cater to the more advanced student enough	Plenty of option. Something for everyone. Caters for the more advanced student. Much more interest	2020-07-21 09:16:54	ANON-FDGN-6Q1J-1	2020-07-21 09:16:54
Teacher	Option B					2020-07-21 12:41:50	ANON-FDGN-6Q16-D	2020-07-21 12:41:12

Teacher	Option C	It makes it more consistent across schools for students. It allows more infromed students who finish at level 1. Allows studednts to better prepare for seniors sciences. Less workload for teachers. It creates flexability for a variety of level courses.		If you are going to increase flexability you may as well go to option C.	Fits better with the 7 criteria	2020-07-21 15:48:31	ANON-FDGN-6Q17-E	2020-07-21 15:48:31
Teacher	Option C	You can cover "nature of science' ideas/topics/way of thinking into the specific subject areas				2020-07-21 15:59:20	ANON-FDGN-6Q1G-X	2020-07-21 15:59:20
Teacher	Option B	More flexibility and allows for a more individualised programs to be developed	There isn't much wriggle room and it is more based on skills rather than content. Are we really setting up the students for future studies?	There is a greater ability to focus on skills but also the ability to delve into content. You can also run a few different types of Level 1 courses at the same time. Physics and ESS would also fit nicely together. But I think it's good for students to realise Science isn't a silo and that they all the 4 different strands intertwine.	Too much choice. It is pretty much the same as what we have now. We are more focussed on content rather than skills	2020-07-21 19:32:24	ANON-FDGN-6Q1V-D	2020-07-21 19:32:24

Teacher	Option C	Option A is too limiting The structure of Option B looks good (even though we don't know the details) as scientifically able student can study in more depth, while a less scientifically able student can still just do the 'Nature of Science' Option C is the best, as the school can design courses that are appropriate to their cohorts, e.g a basic course might just do 'Nature of Science, a standard course might do a mixture of Standards and a high end course might chose alternative Standards to suit their students. This would more or less replicate what we do now, which has served us very well for the past 20 years - lots of opportunities to design courses at appropriate levels to meet the needs of our students.	Option A is way too limiting. Many students will go on in the separate sciences in Level 2 and level 3, so needs more than just what is offered in Option A.	The structure of Option B looks good (even though we don't know the details) as scientifically able student can study in more depth, while a less scientifically able student can still just do the 'Nature of Science' I don't think the combination matters hugely. Schools will pick the Standards they feel are most suited to their students.	Option C is the best, as the school can design courses that are appropriate to their cohorts, e.g a basic course might just do 'Nature of Science, a standard course might do a mixture of Standards and a high end course might chose alternative Standards to suit their students	2020-07-22 16:03:03	ANON-FDGN-6Q1H-Y	2020-07-22 16:03:03
Teacher	Option B	Gives a wider range of options to develop more than 1 course of science to tailor to the needs of your students.				2020-07-22 19:54:50	ANON-FDGN-6Q1X-F	2020-07-22 19:54:50

Teacher	Option B	I believe Option B offers enough scope and choice for students who will opt out of science after Y11 as well as those specialising in their final years at school and beyond.	Ideal for teachers and learners of projects which cross subjects within science. Not enough choice for science concepts in chem, phy, bio and ESS	Noe sure if the suggested combinations are ideal. ESS and PHY could also be 'paired'. And yes, CHEM and BIO could also fit together. Why only two in a combination? All four in one matrix?	Perhaps offers specialisation too early. A broad knowledge of basics in all strands in Y11 is ideal for our learners.	2020-07-22 19:57:42	ANON-FDGN-6Q1E-V	2020-07-22 19:57:42

Teacher	Option B	I feel that option B allows some choices, but won't be overwhelming when it comes to analysing which choices would be best for your students. A teacher could easily become familiar with all options, and make better choices. Option A is too limited. Option C is similar to what we have now, and as a teacher, I am often scared to try a new standard, even though I think it might be interested. I am feel nervous that my assessment tasks and marking will be inadequate for external moderation, as I don't completely understand the requirements. Sometimes there are no other teachers that teach the standard I am interested in, so hard to find someone to moderate it. I feel that less choices will mean more shared knowledge and experience.				2020-07-22 20:41:31	ANON-FDGN-6Q1B-S	2020-07-22 20:41:31
Teacher	Option C	Allows more flexibility across the Science strands.				2020-07-23 10:13:18	ANON-FDGN-6Q1Z-H	2020-07-23 10:13:18

Teacher	Option C	Specialised subject knowledge helps to bridge that (rather large gap) between expectations at Level 1 and the much greater expectations of Level 2. We have a large number of students who struggle with the extra demands of Level 2 and by lessening the subject knowledge/content demand by covering some of it at Level 1 will help our retention of students in the Sciences at Level 2 and beyond.	This option is great if you are a social scientist, but in terms of science as a subject - it doesn't meet the breadth and detail needed to ensure students are ready to access their Level 2 courses.	This option is preferable to Option B, as a greater breadth of knowledge and content can be taught, better preparing students for Level 2 science subjects. Chem and physics seem a natural fit, but also physics and earth sciences, chem and biology.	Students can receive specialised instruction in a particular science - one they know that they will study at a higher level, either because they have a natural interest/curiosity in the subject or they need it for higher level study. It still meets the vision of NCEA Level 1 as a broader qualification without disadvantaging students wishing to progress to level 2 science subjects.	2020-07-23 11:53:40	ANON-FDGN-6Q1F-W	2020-07-23 11:53:40

Teacher	Option C	At Baradene College we believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually arranged around	Positives: Strong emphasis on NOS and relevance of science to the ākonga Strong emphasis on mātauranga Māori Negatives We do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA ie How the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification. The change to both external standards to be a common assessment activity based on unfamiliar contexts and marked by NZQA , sounds good but there is a wealth of science educational research devoted to the fair assessment of NOS, with an acknowledgement that summative assessment of NOS is very difficult(Aydın et al., 2013, Allchin, 2011). The challenges required	Positives ● A compromise between Options A and C Negatives Linking Biology with Planet Earth & Beyond -it would be better to have a Biology/ Chemistry option.	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order	2020-07-24 09:43:58	ANON-FDGN-6Q1A-R	2020-07-24 09:43:58

Teacher	Option B	The nature of science standards as drafted are too nebulous and generic. Without content knowledge (and for some of them that would be Level 2 or 3 content knowledge) they are not meaningful or doable. With the draft standards, it is pretty much a social studies course. Option B gives good flexibility to design courses that include science content knowledge and application of that knowledge to social situations. When compared to other subject areas, going to one set of four standards is very restrictive and narrow in terms of possible courses.	The standards are too generic. With no specified content there will be a bit of a "race to the bottom" in terms of teaching the minimum content needed to pass the standards. This will not help students moving into Year 12 and 13 Science courses and will be even less helpful if students move schools. In theory the content should come from the curriculum document, but in practice courses are built around the assessments.	This gives flexibility to design courses to suit different students within a school. It probably does not matter which subjects are paired up as a course can take standards from different areas anyway.	This option also gives good flexibility to design courses to meet the needs of particular groups of students. It may be that this many content standards are not needed.	2020-07-27 13:01:29	ANON-FDGN-6Q15-C	2020-07-27 13:01:29

Teacher	Option A	It puts an emphasis on the science core skills and can be taught within any context. It is inline with pedagogical understanding that learners should be able to choose contexts relevant to them and has a high focus on the core skills we need learners to come out of a science program with e.g. critical thinking and understanding of the scientific process. These are the skills that all learners need to have going forward to be able to make informed decisions as members of society. By having an option where learners can do a content based course, there is the possibility that they will finish their high school education without these key skills if schools choose to only pick from the physical science/natural science or physics/biology/chemistry/ESS options.	Positives - skills focused - develops scientific competance - develops learners who are able to critically think and engage in scientific discours - can be context flexible so allows learners to have choice in what they are learning dependent on what is valuable to them as a learner. negatives - All standards would have to be completed to get course endorsement which means there are no pathways for differentiation or IEP's if a learner is unable to access one of them for some reason.	Positives: Still has the nature of science strands Negatives Means that people could create content focused courses that do not cover the nature of science themes, this would lead to learners who are not as equipped to participate in scientific discourse and make decisions based on information presented to them. Opportunity for double dipping with programs matching up nature of science with content based. These combinations are fine. Another possible one would be physics and ESS and bio and chem.	Positives - Still has the nature of science strands Negatives - Does not prevent overlap, gives schools the opportunity to double dip with nature of science and the science strands. - potential for learning to not be as rich and schools to start specialisation at Level 1 not Level 2.	2020-07-27 13:38:12	ANON-FDGN-6Q11-8	2020-07-27 13:38:12

Teacher	Option C	More choice for students as we have a wide variety of abilities and interest in the sciences. Students who can barely read and write or have low comprehension skills need more options.	Narrow minded	Getting better but too much emphasis on Physics. No balance for other sciences. I already fight to get more Biology, Geology, and Astronomy ETC in our current setup.	Make some criteria on the minimal/maximum coverage of the different sciences. I don't know if you can force credit criteria. Ie 4 credits from each Science.	2020-07-27 15:13:18	ANON-FDGN-6Q1C-T	2020-07-27 15:13:18
Teacher	Option B					2020-07-27 15:47:43	ANON-FDGN-6Q1M-4	2020-07-27 15:47:43
Teacher	Option C	Removing the option for students to have more advanced pathways, in an area that requires a concerted approach, will hamper students. Of particular concern, those that are most likely to struggle will be exposed to concepts and practises only at level 2 where they will not have the time to work through the material to the level that will now be required.	Positive - everyone leaves thinking they have something useful Negatives - a year behind when trying to learn subject-specific material at level 2	Better but designed to keep students options open. Some know what they want to do or might want a combination that is not available.	This would give students the opportunity to work at a high level in year 11. While challenging they would be far better prepared on entering level 2. Particularly those students who would be unable to suddenly pick level 2 material coming from a NOS course at level 1.	2020-07-27 21:22:56	ANON-FDGN-6Q4Y-K	2020-07-27 21:22:56
Teacher	Option B		This proposal devalues knowledge and prioritises nebulous skills.			2020-07-28 16:09:43	ANON-FDGN-6Q4T-E	2020-07-28 16:09:43

Teacher	Option C	More choices for schools to cater to the students in front of them	Not enough scope within science and no specialism. Students wanting to work in a science field will not have enough background knowledge.	Groupings should be open to school to pick which of the 6 internals they put together and which of the externals.	Gives the most freedom to schools to design courses that meet students needs.	2020-07-28 19:42:14	ANON-FDGN-6Q44-E	2020-07-28 19:42:14
Teacher	Option C	Prefer Option C Option C allows the flexibility to design different courses that suit the needs of students, whatever their future pathways. There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually arranged around mathematics, physics, chemistry, biology and perhaps general science. The second is the citizen-focused need for all children as they mature to have a clear understanding of the complex world of science that they will confront as citizens over the next 60 years of their lives. It is important for schools to have choice - for example, whether	Positives: Emphasis on NOS and relevance of science to the ākonga Emphasis on mātauranga Māori Negatives I agree that teaching with a NOS perspective addresses many of the objectives of the curriculum and modern science-based society. However, to offer this as the only course for all New Zealanders is a huge risk, especially as NOS is the only thing being assessed. The impact of high-stakes assessment on students is considerable, and although the aims of the course may be laudable, the effect of the assessments can be detrimental. Has the MoE any evidence to present that this assessment regime does produce the desired outcomes? Will students be better prepared for senior	Positives A compromise between Options A and C Negatives As with many compromises it will probably satisfy neither set of goals	Positives Allows schools to tailor their courses to their ākonga. We can create courses that suit those aiming for science-related careers as well as those that need the NOS skills we wish all our citizens to have. Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order to adequately prepare for careers in science. Negatives	2020-07-29 14:29:26	ANON-FDGN-6Q4Q-B	2020-07-29 14:29:26

Teacher	Option C	Because it both maintains some academic rigour within each discipline and gives some flexibility to school on how Level 1 is implemented, that can lead to Levels 2 and 3 in a meaningful way				2020-07-29 17:59:01	ANON-FDGN-6Q47-H	2020-07-29 17:59:01
Teacher	Option C	Allows students to specialise.				2020-07-29 18:55:25	ANON-FDGN-6Q4G-1	2020-07-29 18:55:25
Teacher	Option C	As it leads to more options for the students in Level 2 and 3				2020-07-29 21:06:45	ANON-FDGN-6Q4V-G	2020-07-29 21:06:30
Teacher	Option C	This option still includes the Nature of Science general course, but allows for the choice of more specialized subjects. This will help prepare Year 11 Science students for Year 12 (NCEA level 2).				2020-07-30 12:36:50	ANON-FDGN-6Q49-K	2020-07-30 12:36:50
Teacher	Option C	Most flexibility in course design to cater for students of all abilities.	Negatives: too broad to enable proper comparisons between schools; as each school would generate its own content, students having to transfer from one school to another would be at a massive disadvantage.			2020-07-30 13:19:26	ANON-FDGN-6Q4H-2	2020-07-30 13:19:26

Teacher	Option C	At Hawera High School, we believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum currently rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We believe that there are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually arranged around mathematics, physics, chemistry, biology and perhaps general	Positives: ● Strong emphasis on NOS and relevance of science to the ākonga ● Strong emphasis on mātauranga Māori Negatives ● We do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA ie How the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification. The change to both external standards to be a common assessment activity based on unfamiliar contexts and marked by NZQA , sounds good but there is a wealth of science educational research devoted to the fair assessment of NOS, with an acknowledgement that summative assessment of NOS is very difficult (Aydın et	Positives ● A compromise between Options A and C Negatives ● As with compromises, it will probably satisfy neither set of goals	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. This recognises both the importance of science and the need to cover a significant amount of content in order to adequately prepare for careers in science. ● There is even the possibility of offering one or more of the NOS standards in Year 10 to help prepare the students but to	2020-07-31 12:08:26	ANON-FDGN-6Q4X-J	2020-07-31 12:07:52

Teacher	Option C	Allows in-depth knowledge of each Science discipline - Chemistry, Biology, Physics, ESS. At the same time . This option also allows for a general Science course to be available for students who do not require the same depth of knowledge - general Science.			Point 1 - see above Point 2 - Yes Point 3 - Have specialist teaching staff available to deliver each discipline. Have teachers of each discipline having industrial experience, not just straight from university. This will actively encourage "bringing real life aspects" into teaching practice and daily delivery. Note: for ideas on how this can be applied. Contact Edinburgh University Moray House College of Education. Edinburgh University applied this initiative about 12 years ago and teachers were accepted with minimum 10 years industrial	2020-07-31 13:20:26	ANON-FDGN-6Q4E-Y	2020-07-31 13:20:26

Teacher	Option C	This structure would ensure at least some standardization across all schools, and hence meet objectives of the NZQA. The challenge would be ensuring equal knowledge/ability/standards from teachers in presenting options where their teaching strengths might not occur.	Less standardization with this option and the arena is opened whereby teachers chose "easy" teaching options that may not necessarily benefit students. However, a suitable option for students less likely to pursue the Sciences at a higher level, or an option that might be able to inspire students more.		Standardizing at Ministry level would be needed, and it would be easier that Options A&B..	2020-07-31 13:58:03	ANON-FDGN-6Q4B-V	2020-07-31 13:58:03
Teacher	Option C	I don't like how the option 1 standards are assessed - these standards should be internally assessed - it is too difficult to assess nature of science externally. Option C allows for greater scope for a variety of course designs and pathways for level 2 and level 3. Allows for more standards to be assessed externally.	There are a large number of possibilities of contexts in which to teach. Course design would take a lot of time and iteration. If finalised - would need to introduce standards over 2 years? To give more time for course design.	Don't agree with the physical and natural science split.	Allows for a selection of different standards to assess against - although this means more standards to understand and assess. If finalised - need to get sufficient feedback on possible content for this course.	2020-07-31 14:56:46	ANON-FDGN-6Q4Z-M	2020-07-31 14:56:46

Teacher	Option C	I think it is important for school to have freedom of choice to suit their ākonga which is what Option C offers. Under Option C, some schools can offer the broad Nature of Science standards being proposed, or choose to offer the more specialized Physics, Chemistry, Biology or Earth & Science standards, or indeed to choose whether they offer a blend of these standards, to best suit their ākonga. Option C would best allow us to satisfy the two objectives of teaching Science as identified by Professor Gluckman (2011), namely: "There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually arranged around mathematics, physics	I am fundamentally opposed to this option because: 1) It does not provide schools sufficient choice 2) It will not prepare students properly for Level 2 Physics, Chemistry and Biology 3) It will not enable students to make an informed choice about whether to take Level 2 Physics, Chemistry and Biology 4) The over-use of internal standards with non-traditional forms of assessment are too time-intensive for teachers and students, with the focus often being on "collecting credits" rather than deep learning and problem solving. External examinations also provide consistency across schools in terms of assessment standards and moderation around achievement levels.	I am equally opposed to this option because it is a compromise between A and C which is unnecessary and artificial, and will likely lead to gaps in student knowledge.	This is my preferred option because: 1) It provides schools and students with more choice 2) It will better prepare students for Level 2 Physics, Chemistry and Biology 3) It will enable students to make a more informed choice about whether to take Level 2 Physics, Chemistry and Biology I also think it is critical that external examinations are retained. In my experience, internal assessments are massively time-consuming for both students and teachers, with the focus often being on "collecting credits" rather than deep learning and	2020-08-01 14:02:32	ANON-FDGN-6Q4K-5	2020-08-01 14:02:32

Teacher	Option A	This is the option based on the work of the Science Subject Expert Group in the Trial and Pilot process. We must remain faithful to this process, not listen to people outside the scope of that group, who may have another agenda. It best reflects the NZ Curriculum, too.	This is by far the best option. Yes, it definitely meets the seven criteria. Having access to PD / specialists (for example Team Solutions) would be fantastic.	Old fashioned, reflects current standards which need changing!	Old fashioned, reflects current standards which need changing!	2020-08-02 16:13:37	ANON-FDGN-6Q4F-Z	2020-08-02 16:13:37

Teacher	Option C	See summary from CSTA meeting.	See summary	See summary	CSTA NCEA Summary Overview: •25 people from about 12 schools attended this meeting. •While we recognised that option A creates more uniformity, most teachers agreed that option C created the most choice for schools and their ākonga. We agreed that choice is incredibly important if we are to meaningfully engage our ākonga. •We all recognised the importance of NOS and most of our school programs are designed around NOS as the overarching strand. •Teaching the separate science with a NOS focus is very effective, with considerable research evidence to support this	2020-08-02 18:28:58	ANON-FDGN-6Q45-F	2020-08-02 18:27:23

Teacher	Option C	More scope to teach in depth science concepts	No positives Negatives - too general	Positives - better than A Negatives - limits choice	Negatives- reinventing the wheel again is tedious Positives - plenty of scope to construct a meaningful course	2020-08-02 19:13:55	ANON-FDGN-6Q41-B	2020-08-02 19:13:55

Teacher	Option C	It gives greater flexibility to put together courses that prepare students for studying the individual sciences at levels 2 and 3. It also means that there is a clear picture of what concepts students have covered if they change schools. Option C allows schools that currently run separate Biology, Chemistry, Physics and ESS courses to continue to do so.	The NoS standards are important for challenging the notion of what is science and ensuring that students understand how scientific knowledge is developed. However, it lacked specified concepts that would prepare students to study science at levels 2 and 3. This means students who change schools would not necessarily have covered the same concepts and there was no mechanism proposed to ensure that schools were covering all strands of the science curriculum in a level 1 course. Ongoing professional development around NoS and contexts would assist schools in teaching science effectively.	This option retains the some of the flexibility that schools currently have to offer more specialized science courses. It allows for the ability to assess students against key subject specific knowledge while also ensuring that the nature of science aspects would be covered. It allows for better preparation for students to study the single sciences at NCEA levels 2 and 3. This does meet the 7 criteria, however it would be good to see more guidance on course development and assessment to ensure that a broad range of contexts were used.	This option retains flexibility of the current level 1 standards and gives greater flexibility for schools to design courses that better prepares students for studying science in the senior school and beyond. It also allows acknowledges that science covers a broad range of disciplines that are based on a specific knowledge and skills base rather than just being science. Yes, this meets the 7 criteria while also retaining the flexibility that schools have enjoyed under the current system. More subject specific professional development would be ensure all schools are able to	2020-08-02 20:54:00	ANON-FDGN-6Q4J-4	2020-07-29 07:19:45

Teacher	Option C	This is the only option which provides schools, communities and learners with real choice and flexibility.	In my opinion, the four standards developed by the SEG would not adequately prepare students for the range of Science subjects at L2 & L3 of NCEA.	Negative: the proposed subject combinations appear arbitrary and contrived. Option C provides more choice and flexibility.	Positive: This is the only option which provides schools, communities and learners with real choice and flexibility.	2020-08-03 12:29:10	ANON-FDGN-6Q4C-W	2020-08-03 12:29:10
Teacher	Option C	This option is truer to the intent of NCEA in allowing flexibility in the design of a L1 course in a school. This option also values knowledge more than the devaluation of knowledge in Option 1. Some students (50% in our school continue to do L2 and L3 sciences for the purpose of entry to demanding tertiary science courses like health sciences and engineering.	Negatives are that it will further alienate students who have already been turned off education due to NZ's obsession with imposing literacy on all subjects even where it adds no value to the learning experience. Boys in particular will be turned off science by this option that looks more like social science and philosophy. Option 1 devalues knowledge which underpins one's ability to have 'informed' opinions and think laterally. Option 1 diminishes the ability of schools to design their own courses to suit their own learners.		Option 3 allows schools to make robust courses that value knowledge as well as philosophy of science and socio-scientific issues.	2020-08-03 14:01:37	ANON-FDGN-6Q4W-H	2020-08-03 13:26:14

Teacher	Option C	Because it most closely resembles the wide range of standards that exist at the moment. I cannot see how either of the other two options could be used in my school the way we use the current standards i.e. in integrated and contextualised courses that draw together standards from Sci, Tech and Maths for example to construct a course, or History and Vis Arts as another example. The strength of the current matrix is that it is comprises a large number of small parts which can readily be cherry picked and contexualised to suit the school or specific course context. Note - not cherry picked to just use the easiest (they all require learner to be working at NZC level 6 do they not?) I can't see a future for our Year 11 programme with either option A or B, and I still don't know enough about option C	Biggest negative is that the matrix is made up a small number of big parts and because of this it is unlikely to come close to achiving point 4 of the 7. There is not enough choice possible if the total number of parts to choose from is 4. More likely to be broader because schools will insist on learners doing all 4 standards to 'complete' the course. This forces the breadth across the curriculum. Haven't seen any L2 proposals yet so can't comment on specialisation of L2 compared to L1. Will probably support the goal for rich learning because it doesn't appear to be based on content knowledge. The success of this will down to the schools to make it happen. Can't really see how it supports pathways for individual learners. Where is the choice? A	Better than A because there are more standards to choose from. More likely to be able to build personalised or individual learner pathways though a variety of science-containing integrated courses. Doesn't necessarily dictate that a learner must do all standards to complete a course in science. This is a thumbs up for personal pathways but not a guarantree of broad curriculum coverage. If you're going to arbitrarily pair up subjects to make up each half of the matrix why not either stick with option A (one subject) or C (all separate)?	This is the best of the 3 but only if specific content knowledge is not permanently attached to any of the standards like the suggested plans seem to suggest might be. What would be the difference between the two internally assessed standards in physics for example? If it's content knowledge then to get a broad coverage you'd need to do them all. If it's skills or critical thinking or something else then can schools contextualise that to any content? This would be the best way to ensire personalised or individual pathways are do-able.	2020-08-03 15:14:54	ANON-FDGN-6Q4M-7	2020-08-03 14:09:01
Teacher	Option C	It does not dilute the subjects as option. A and B do. It also allows for greater flexibility in designing courses for both teachers and students.				2020-08-03 18:12:02	ANON-FDGN-6QGU-2	2020-08-03 18:12:02

Teacher	Option C	This will give teachers the most options to deliver a course suitable for their students. It allows a broad range of science and to cover important content that is required for senior subjects.	This option is very poor. It offers no ability to tailor a course and will not allow for multiple strands of science to run. It also removes all knowledge from the course and waters is down to a research based social science.	This is a much better option, but still does not allow for schools to fully tailor their courses to suit their students.	This will give teachers the most options to deliver a course suitable for their students. It allows a broad range of science and to cover important content that is required for senior subjects.	2020-08-04 11:23:01	ANON-FDGN-6QG7-4	2020-08-04 11:23:01
Teacher	Option C	Allows a greater range of options to be put together, and allows for those students who wish to specialise in an area to do so at level 1 and so have a greater base of knowledge moving to levels 2 and 3	Assumes a knowledge of a range of concepts that the students might not have. Could impact on the ability of students to adequately perform at level 2 and 3 in individual sciences. Depending on how the externals are asked they will become the default standards.	Ability to introduce specific concepts earlier, however is a cop out between the other two options	Allows a greater range of options to be put together, and allows for those students who wish to specialise in an area to do so at level 1 and so have a greater base of knowledge moving to levels 2 and 3	2020-08-04 11:26:54	ANON-FDGN-6QGG-M	2020-08-04 11:26:54
Teacher	Option A	Keep it simple as up to year 11 we need to provide a balanced education to all pupils. Specialisation does not need to start to year 12.	provides a good balanced education to all pupils.	Too complicated	Too complicated	2020-08-04 11:35:18	ANON-FDGN-6QGV-3	2020-08-04 11:35:18

Teacher	Option B	Option B provides the option for more student choice where they have had none for their first 10 years while still keeping students learning about citizen science. A balanced approach. Option A would be the worst choice of the three.	Option A will lead to a spreading of the "have" and "have nots" in NZ. Schools with high staff turnover will struggle to have quality courses set up for such general courses and students will suffer as they will be left unprepared for level 2. Students have had 10 years of foundation and it would be better to finally give them some choice. This is by far the worst option.	This option provides more choices for teachers and students that will make the learning more relevant. The exact make-up is not that important as long as there is more choice.	Provides much more choice for students and teachers.	2020-08-04 12:07:32	ANON-FDGN-6QGH-N	2020-08-04 12:07:07

Teacher	Option C	Science is a valuable subject going forward. We don't try to collapse languages or arts subjects in to one overall subject and I see no reason to do this with the sciences. They are completely different subjects and disciplines. The young people of our country deserve access to move Science learning not less. The country and the world needs better understanding of Science and Technology. You will be putting our young people at a disadvantage in the global markets if they are unable to extend their passions in this area. We don't restrict students in the arts and social sciences or language areas so why do it for those students who have an interest in Science?				2020-08-04 12:10:44	ANON-FDGN-6QGX-5	2020-08-04 12:10:44

Teacher	Option A	This allows for a large degree of flexibility within a school to use content to fit their region and their students. It will need some careful thought about how the assessments work and what preparation they require, but they should allow schools to develop a variety of courses that fit the needs.	Flexibility of content Addresses the Nature of Science Can be tailored to fit specific regions/students Daunting for some teachers who are not comfortable with NoS	A compromise, but at what cost? Hits some of the negative aspects of both. Does allow more choice in assessment.	I do not believe that this meets the criteria for developing a broad, foundational qualification for level 1. This is essentially the same system that we currently have, just rebranded and will end up with exactly the same type of assessment and content that we currently use. I see very little positive with this scenario, as it does address any of the needs, with the exception of fewer internally based standards. Would all students still need to do 2 externals and 2 internals?	2020-08-04 12:14:41	ANON-FDGN-6QGB-F	2020-08-04 12:14:41

Teacher	Option C	This option offers the most flexibility for the most students and school communities.	This is not a broad foundational qualification. The assessments proposed are all very similar and rely on one mode of assessment. This by it's very nature disadvantages students with limited literacy skills and fails to recognise other form of achievement. Scientific knowledge and skills for a fundamental part of science. Without knowledge then informed judgements cannot be made.	The comments above apply to a lesser extent with this option, but there is still not enough flexibility to offer a wide range of course that will suit all students needs.	This is the only option that allows schools the ability to construct courses to suit students needs. The one caveat is that there should be a wide variety of modes of assessment to ensure that these diverse needs are met.	2020-08-04 12:15:44	ANON-FDGN-6QGZ-7	2020-08-04 12:15:44

Teacher	Option A	Means that smaller schools will have the same opportunities as everyone else. Smaller schools can not have separate individual science programs. I think, having fewer contextualized standards will allow all schools to build the science knowledge of year 9-11 students to a similar level so they are ready for level 2 individual subjects, in terms of breadth and depth of knowledge. Rather than having some students having more specialized knowledge in some areas compared with students who only have access to the general science program.				2020-08-04 12:27:35	ANON-FDGN-6QGF-K	2020-08-04 12:27:35
Teacher	Option C	It is the most flexible for the school designing courses.				2020-08-04 12:54:57	ANON-FDGN-6QGA-E	2020-08-04 12:54:57

Teacher	Option C	Option C allows for both: a) adequate assessment that akonga have developed sufficient scientific knowledge (which is needed for students to apply abstract 'Nature of Science' beyond very narrow contexts: for a recent summary of relevant research see https://www.aft.org/sites/default/files/periodicals/Crit_Thinking.pdf); and b) schools to customize their programmes to the needs of their location and akonga (e.g. assess both Earth and Space Science and Chemistry internally, and both Biology and Physics externally)	1. Option A's focus on meta-science concepts over domain science learning flies directly in the face of the research on how students develop these skills (see https://www.aft.org/sites/default/files/periodicals/Crit_Thinking.pdf for a summary of recent research) 2. Fails to ensure students have sufficient experience of and preparation for selecting and studying the specific fields within science at level 2	Option B allows for assessment of science content learning (necessary for development of science learning and preparation for level 2), but restricts the organisation of courses in schools (e.g. (e.g. cannot assess combinations such as Biology and Physics internally and Earth and Space Science and Chemistry externally)	Options C: Positives: - Better allows for the progression of student learning (develop sufficient domain specific knowledge first, then extend this to the application of meta scientific concepts) - Better enables schools to configure programmes that suit their locations and akonga Negatives: - NZQA have to do more work (however, this is more than offset by the benefits to akonga and schools) Meeting the seven criteria: 1. How the subject fits with the policy vision of a broader, foundational NCEA Level 1 with increasing specialisation at Levels 2 and 3	2020-08-04 13:05:16	ANON-FDGN-6QG5-2	2020-08-04 13:04:29

Teacher	Option B	Most manageable and accessible option. Allows schools to plan appropriate programmes that are broad enough to give all level 1 students the foundations for all level 2 courses. Does not require limiting pathways too early in the students education. Has more of a content focus than the very unwieldy Nature of Science standards that have been proposed to date.	Very difficult to get a gauge on what a course would look like. Not enough focus on fundamental concepts and too great a focus on skills. Not a great foundational approach if students leave with limited understanding of significant areas of science.	The negatives are some students needing to take 2 options at level 1 to prepare them for level 2 sciences if they are planning on focusing on sciences in the senior high school and beyond. This means a narrowing of options and potential closing of pathways very early in their education. A 14 year old choosing subjects at the end of year 10, may not know they want to be an electrician and should take physics so may not choose physical sciences and have this pathway closed at a very young age.	Positives. Ability of schools to customise programmes. Too great a degree of specialisation too early. pathway closed off due to specialisation.	2020-08-04 13:40:18	ANON-FDGN-6QG1-X	2020-08-04 13:40:18

Teacher	Option C	more closely aligns with my philosophy regarding the purpose of a curriculum, which is to provide prescriptive detail about what content is to be taught and learned (a "knowledge - rich curriculum) In my professional opinion, the curriculum should: 1. have a driving, underpinning purpose based on the knowledge to be learned. 2. have content that is described in detail. 3. be taught to be remembered, not simply encountered. 4. contain content that is sequenced and mapped deliberately and coherently. (reference: https://teacherhead.com/2018/06/06/what-is-a-knowledge-rich-curriculum-principle-and-practice/)				2020-08-04 14:38:27	ANON-FDGN-6QGC-G	2020-08-04 14:38:27

Teacher	Option C	Option 3 allows for students to specialize in different subjects. At the moment our school has a year 11 biology option, a year 11 chemistry and physics option.			Allowing students to choose these subjects allows them to gain different skills and knowledge as different assessments are offered.	2020-08-04 14:43:08	ANON-FDGN-6QGW-4	2020-08-04 14:43:08
Teacher	Option C	It gives more flexibility for schools, their programmes and to tap into student interest. This option also provides a better base for students wishing to go into specialist science subjects and year 12 and 13, and then to tertiary study in those options.	Too broad, it does not cater for academic students who wish to start specialising at year 11 in order to achieve well for senior study. I do not believe it meets all seven criteria and feel that students will struggle to transfer the skills in this "theme" type study to other topics at this age.	Too limited, all sciences need to be looked at individually and the students coached to understand how they link together like a big jigsaw. By combining two subjects I believe it will make it more difficult to get students to understand the link between all subjects within the science domain, let alone cross curricular links with other subjects.	This is the preferred option, it still allows school to opt for contextualised and inter or cross curricular standards and teaching but still caters for academic students and the ability to specialise early for those students who wish to.	2020-08-04 14:54:31	ANON-FDGN-6QGM-T	2020-08-04 14:54:31

Teacher	Option B	It would give teachers flexibility in developing courses with contexts appropriate to students interests and would also help prepare students for further study in specific scientific fields. It would not lead to too much specialisation at level 1 and so students would still be able to specialise further in level 2 without penalty.		Natural affiliations exist between all the science strands. Chemistry and Biology: A number of biological processes cannot be understood without chemistry as a back drop - protein formation, photosynthesis, cellular reproduction. Biology feeds back into chemistry with the formation of many organic molecules. Earth and space science and physics Physical law drives most geological and environmental processes including global warming, ocean current, winds, seasons, etc. Astronomy is well and truly in the domain of physics. Conversely physics is often informed by earth and space as a context in		2020-08-04 14:56:22	ANON-FDGN-6QGR-Y	2020-08-04 14:56:22

Teacher	Option C	It provides more options to cater for the needs of ALL different learners. It also provides the opportunity to prepare students better for what is required at higher levels in Science.	Too limited. Not catering for all learners.	Not enough content to prepare students for the individual Sciences at the higher level.	Courses can be structured to cater for the needs of all learners.	2020-08-04 15:16:54	ANON-FDGN-6QG8-5	2020-08-04 15:16:21
Teacher	Option C	Keeps options for schools and science departments open to create tailored programs that fit the needs of their own students.	No variety between programs - makes the lines between applied and academic study too blurred and leaves schools with more questions than answers.	Better	Change for the sake of change doesn't aid the educational system. More variety means more choice in how topics are approached for each individual instead of group of students.	2020-08-04 15:28:25	ANON-FDGN-6Q5P-B	2020-08-04 15:28:25
Teacher	Option C	It provides a better range of science disciplines for chemistry and physics to those wishing to learn a broader range of science e.g. a double science course.	It provides a good general science curriculum. probably the best option for lower ability students. Doesn't provide enough flexibility to teach a wider range of chemistry and physics standards	I like this option but prefer option c.	I prefer this option	2020-08-04 15:39:34	ANON-FDGN-6Q5N-9	2020-08-04 15:39:34

Teacher	Option C	Earth and Space science is an excellent option for students who are not continuing on in science. Also, having a wider variety of standards available allows schools the flexibility to create programmes which meet the needs of all students.	Option A makes it very difficult to prepare students for further study in science. Schools will not be able to teach science effectively with this option.			2020-08-04 15:40:10	ANON-FDGN-6Q5S-E	2020-08-04 15:40:10
Teacher	Option B	Allows for specialisation of subjects for some classes within the L1 Science program.				2020-08-04 15:44:37	ANON-FDGN-6Q5D-Y	2020-08-04 15:44:37
Teacher	Option C					2020-08-04 16:03:49	ANON-FDGN-6Q5Y-M	2020-08-04 16:03:49

Teacher	Option B	Option B gives the students more depth of understanding in what standards they choose depends on their career choice	Positives- allow the learners to have a taste of all science strands Negative- It is a broader aspect where they don't get a deeper understanding. I don't think it meets all the seven criteria eg: 1 and 3 As teachers of L1 we need to get a clear structure and guidelines to all schools so that if a student move from one school to another then he/she won't be suffered that much.	Positives- The depth of understanding will be better than option A Negatives- The option choices for learners - more limited. The current textbooks will be outdated. It meets the 7 criteria if they choose the right subject and move up with the same. The teachers must be given sample assessments A mix and match combination will suit the students - provide an inclusive curriculum	Positive - more options and the depth of understanding in each strand will be better Negatives - Maybe too early for our learners to choose their pathways into Phyiscs/ Chemistry/biology field. For a small school, it is not a good option. Teachers will need a clear guideline from Subject Experts or Ministry.	2020-08-04 16:26:50	ANON-FDGN-6Q5U-G	2020-08-04 16:26:50
Teacher	Option B	Good mix of NOS and specialist science subjects	Positives are that the new plan links to the nature of science and teaching students useful transferable skills. Negative the plan does not prepare students who want to pursue science in their senior years or at University.	Good mix of NOS and science specialisation subjects. Would like more clarity on which standards are chosen.	Too many options will be difficult from a teaching and learning perspective.	2020-08-04 16:45:40	ANON-FDGN-6Q52-D	2020-08-04 16:45:40

Teacher	Option C	This was given before. Specialising is important.	Very narrow and limited areas of learning for students	Still not adequate specialisation for student learning	Stdents have the opportunity to do special areas of science	2020-08-04 20:12:19	ANON-FDGN-6Q53-E	2020-08-04 20:12:19
Teacher	Option C	Best variety offered. Will cater better for more able students and less emphasis on the nature of science. Far too much language, writing tc for less able students.	No not like it at all, too general, not enough specific content for good students to get their teeth into.	Not enough choice, too limiting for more able students.	Best option as there is choice for students, a much better, quality programme/s can be designed for all students. We are not social sciences!!	2020-08-04 20:51:00	ANON-FDGN-6Q5T-F	2020-08-04 20:51:00

Teacher	Option C	allows flexibility of courses to allow for a diverse range of students. Also different abilities and aims for their future studies in Science But we need to see to see what is happening at level 2 and 3 in the single sciences so have a full understanding of the whole picture, not just level 1. Also who is writing the new standards and what will they look like if we go to option C, and this should not be controlled by cost, but what will be best for our students now and in the future.	this one is too restrictive and does not offer a pathway into yr 12 and 13 Science subjects eg Physics, Chemistry and BIoloigy.	Again this is restrictive so a negative. It is better than the Option A	Allows flexibility within a school to allow for different abilities and learning styles.	2020-08-04 21:35:47	ANON-FDGN-6Q54-F	2020-08-04 21:35:47
Teacher	Option C	Students NEED to study ALL x3 sciences, if they wish!!!				2020-08-04 21:37:28	ANON-FDGN-6Q5J-5	2020-08-04 21:37:28
Teacher	Option B					2020-08-04 22:09:14	ANON-FDGN-6Q5Q-C	2020-08-04 22:09:14

Teacher	Option C	More choice is given for each individual subject branch. However, without more detail about the exact nature of the options presented it is hard to give a definitive judgement,	With how badly this was received at the beginning of the process I am unsure of why you would even give us this option again.	Seems that it will allow more choice but without more detail it is hard to judge.	Seems that it will allow the most choice but without more detail it is hard to judge.	2020-08-05 07:55:04	ANON-FDGN-6Q57-J	2020-08-05 07:55:04
Teacher	Option C	Greater range of options so I can personalise the learning for my students.	Awful. restrictive. Seriously devalues the credibility of NCEA	Better.	Best option for providing individualised learning programs for my students.	2020-08-05 08:00:43	ANON-FDGN-6Q5G-2	2020-08-05 08:00:43
Teacher	Option B	Flexibility but has NoS as a focus.				2020-08-05 08:08:51	ANON-FDGN-6Q5V-H	2020-08-05 08:08:51

Teacher	Option C	Learners need to have the option to study more than one area of science if they so choose. Having a generalised science option will only limit those learners who want to pursue a more STEM heavy course/pathway. The additional options/standards also provides more opportunities for learners. It is important for schools to have choice - for example, whether they offer the broad Nature of Science standards being proposed, or choose to offer the more specialized Physics, Chemistry, Biology or Earth & Science standards, or to choose whether they offer a blend of these standards, to best suit their ākonga. It is also important to give learners at Level 1 the	I agree with the views sent from the Cashmere High School Science Teachers response: Positives: ● Strong emphasis on NOS and relevance of science to the ākonga ● Strong emphasis on mātauranga Māori Negatives We do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA ie How the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification. The change to both external standards to be a common assessment activity based on unfamiliar contexts and marked by NZQA , sounds good but there is a wealth of science educational research devoted to the fair assessment of NOS, with an	Positives ● A compromise between Options A and C Negatives ● As with many compromises it will probably satisfy neither set of goals 3 Feedback	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount	2020-08-05 08:09:46	ANON-FDGN-6Q59-M	2020-08-05 08:09:46

Teacher	Option C	There are more options for teaching different streams of Science - tailoring courses to academic and less academic students. And tailoring courses to the interests and abilities of the students.				2020-08-05 08:10:26	ANON-FDGN-6Q5H-3	2020-08-05 08:10:26
Teacher	Option C	Establishment of fundamental concepts of the individual sciences in preparation for Senior levels	Too elementary and does not give students a proper grounding.	Insufficient time spent establishing understanding of core concepts	Sufficient focused time spent establishing fundamentals	2020-08-05 08:12:01	ANON-FDGN-6Q5X-K	2020-08-05 08:12:01
Teacher	Option C	Primarily for flexibility. There is a wide variety of learner need at this level and the option that allows our school to put together the best suite of course to cater for the widest range of learners would be best.				2020-08-05 08:15:27	ANON-FDGN-6Q5E-Z	2020-08-05 08:15:27

Teacher	Option A	Clearer, a general Science subject means students won't be penalised for specialising early.	Students who change schools will potentially have less difficulty. Great to have a foundation rather than bits and pieces. Yes, meets seven criteria.	Having it become two subjects would mean that students would have to specialise early. Or reduce the range of other subjects they do. This may broaden their Science at level 1 NCEA but narrow their overall learning. Chemistry / Biology and Physics/ Earth and Space Science fit well together.	Having it become five subjects would mean that students would have to specialise early. Or reduce the range of other subjects they do. This may broaden their Science at level 1 NCEA but narrow their overall learning.	2020-08-05 08:16:51	ANON-FDGN-6Q5B-W	2020-08-05 08:16:51
Teacher	Option B	Seems like a good balance to give students more idea which science they would choose to study in level 2	Seems too general and students have had this approach all through their primary years. At level 1 it seems time to differentiate somewhat	I think it's a balanced approach and makes sense on many levels. It is a shame there is not more emphasis on introducing environmental science concept as this is a huge concern for our rangatahi.	I think this specialisation would put some students off science as not all strands will appeal to all students - a more generalised approach seems sensible for catering to more students	2020-08-05 08:31:09	ANON-FDGN-6Q5Z-N	2020-08-05 08:31:09

Teacher	Option B	It gives more flexibility than option A to create a range of courses suited to particular kura. Option C will result in fragmented parts of each subject per standard and will only suit schools who run separate sciences at L1. It is essentially the status quo and will make it difficult to create a broad general science course (which the vast majority of akonga currently take)	There is no flexibility, and external standards are not suitable for all students. Teachers will need lots of PD. I suspect there will be issues finding external markers.	Gives some more flexibility than A, and will keep the 2 AS per specialist subject broad enough for kura to create interesting science courses at L1. I do not think we should be constrained into having 2 subjects fit together, but should be free to create a course that best suits our akonga. PD will be needed for teachers.	This is status quo and will only really suit schools currently offering separate sciences at this level. For the majority of akonga, this will result in a fragmented course which may only cover small parts of the content in each subject, similar to the current unsatisfactory general science course that includes acids and bases, genetics and mechanics, rather than broader contexts within each specialist subject.	2020-08-05 09:00:05	ANON-FDGN-6Q5K-6	2020-08-05 09:00:05

Teacher	Option C	We should be allow students choice so that we meet their needs. We still also need to cater for those students that want to pursue an academic pathway and need to cover more of the different strands. I believe that NOS is good for those students who do not wish to continue with their scientific studies only. We cannot force everyone into the same model so we must have a wide range of choice so our students can choose what best fits them.	Too narrow. Not enough of a basis to continue with level 2 and level 3 chem, phys, bio	Still need more choice to allow us to cater to all needs and interests	More choice is good	2020-08-05 09:06:17	ANON-FDGN-6Q5F-1	2020-08-05 09:06:17
Teacher	Option C	Without knowing the standards and possible assessments you cannot actually decide what option would be best, therefore the one with the most flexibility is the best option.	More information is needed. For example would one of the internal standards be an investigation and we can pick whether its biology, chemistry, physics or ESS? or will it be one investigation with components of all four subjects?		This sounds the most like the current flexible option offered to schools and teachers which has been absolutely vital in recent times with standards being swapped around to suit online learning.	2020-08-05 09:11:55	ANON-FDGN-6Q5A-V	2020-08-05 09:11:55

Teacher	Option B	I believe that level 1 is a good opportunity to continue to focus on the nature of science aspects of the curriculum. Level 2 and 3, have a lot of content based standards which at the moment the tertiary institutions prefer students to have passed. This means that frequently their is not enough time at level 2 and 3 to spend much time on the nature of science based standards. However, there is some need to cover some of the content before students reach level 2. Option 3 concerns me, because there are so many standards based on the contextual strands and this could allow courses to be developed that would not include any of the nature of science strands. I also, question the need for so many standards. Currently there are 31 standards	Option A focuses almost exclusively on the nature of science strands. These are important but with only 4 standards there is not a lot of scope for developing different courses to meet student needs.	See comments made in option selection section. In reality, which ever combination was used, there would be pros and cons. I don't believe that any one combination is necessarily going to better than another. I think the important thing is to get the combinations sorted very early on, so schools can start working with them. And that these combinations are adhered to.	This option has too many standards. Having too many standards tends to break up science into smaller and smaller pieces. Students are not good at looking at science as a whole, since the standards break things up into little pieces. Science needs to be kept as wide and interconnected as possible. Option C would not promote this. There is also the risk of the nature of science strands being overlooked with the opportunity to use only the contextual strand standards.	2020-08-05 09:12:10	ANON-FDGN-6Q55-G	2020-08-05 09:12:10

Teacher	Option A	Option A best meets the goal for level 1 to remain a broader qualification compulsory for all students. Schools will still have flexibility within each contextual strand under a general Science subject to create Science courses that best meet the needs of their students.	Ongoing PLD for specialist Science subject teachers to teach contextual strands effectively away from their own specialist Science subject. Adjust the Science curriculum and assessment to have more of a focus on making Science more relevant for students at Level 1 so there is a strongly link to why Science is important from a Level 1 students perspective. Build greater capacity in Earth and Space Science at level 1, as this strand is greatly underrepresented in many schools who only offer Biology, Chemistry, and Physics in Level 2	I believe that combining two strands together reinforces that some sciences are 'better' than others. So I don't support this option at all. If the goal is to create a broader qualification at level 1, then this option does not work towards achieving this goal. There are however, other benefits of choosing this option - that better meet the needs of our students, especially for those with a passion towards physical or natural Sciences.	No. This does not meet the criteria. This option is more targeted at what specialist Science teachers would like to teach at Level 1, and it also meets the needs of higher achieving students, or students who have made early decisions on career pathways. Expert groups would need to ensure there are opportunities to specialize in each strand within a general Science subject without losing the relevance of needing to learn Science for students	2020-08-05 09:22:57	ANON-FDGN-6Q51-C	2020-08-05 09:22:57
Teacher	Option B	Compromise between only NoS and subject specific content.	nothing good about this	As given in the example - opportunity of subject specific internals and externals	too much like current offering, too complicated to find internal moderators.	2020-08-05 09:28:47	ANON-FDGN-6Q5C-X	2020-08-05 09:28:47

Teacher	Option B	It is difficult to comment on the different options whilst there is no detail about what content the different standards would contain. On that basis, I would prefer the option that gives me the greatest flexibility and potential to create a Y11 Science course that is suitable for my students.	I do not consider that this option is a good option. There is a lack of detail around the content that could be taught. There would need to be considerable PLD and up-skilling of teachers in order to be able to fulfil this vision. With respect to the seven criteria: 1. I believe that the potential for a lack of specified content makes increasing specialisation very difficult. 2. I believe that the skills and attitudes that this option develops are already covered in many other subject areas, specifically the social sciences. 3. A lack of specific teaching content means that there would be increasing disparity between local curricula. 5. This option would not appeal to many students who choose the science pathway precisely because it is content and fact rich. 6. I see no problems	The positives are that there is the potential to teach a more traditional, content focussed course. There is a modicum of flexibility which would help to ensure more comparability between schools and their performance. If this approach were to be taken, I would like to see the Ministry and the SEG produce a DETAILED curriculum. This should explicitly indicate the content and skills that are to be covered during the course so that there is no room for misunderstandings and less need to provide lengthy and expensive PLD courses for every Science Department in the	The positives of this option are that it offers more flexibility and thus matches criteria 2, 3, 4, 5 and 7. The negative is that this option is very similar to what is already in place. There is still the possibility for neighbouring schools to offer completely different Level 1 'Science' courses and thus still may cause inequities for students. If the aim of this review is to trim the number of potential standards that are on offer, this is only a token improvement. I am concerned about the 50% internal assessment - my understanding is that very few other OECD countries allow a teacher to teach, set and mark assessments	2020-08-05 09:30:49	ANON-FDGN-6Q5W-J	2020-08-05 09:30:49
Teacher	Option B	Good balance of content and NOS				2020-08-05 09:31:58	ANON-FDGN-6Q5M-8	2020-08-05 09:31:58

Teacher	Option B	Option B has the core sciences, however, option C seems to be the same as currently is. I think that there are very few students that take specialist science subject at year 11, and usually do a combo of different standards from different sciences strands. Hence option b has all the required strands, and hence does not limit us too much where as option 1 is completely limiting our ability to teach content.	Option 1 limits content to be taught that is often required for level 2	Earth and space science with Physics tends to relate a little easier, so could do Chem and Bio, then Physics and Earth and space science as a subject matrix. For Science to be taught effectively everyone must needs to know what is going to be taught. This is where standards are used. Although flexibility is good, if everything is just a research thing we are not teaching Science effectively..	This option seems more like what we have now. What evidence do you have to say that we are not teaching Science effectively now? It does meet the 7 criteria	2020-08-05 09:33:55	ANON-FDGN-6Q5R-D	2020-08-05 09:33:55

Teacher	Option C	There is a big jump in concepts and understanding from all areas of science from year 11 to 12 and one general science does not cover this adequately enough. A suggestion would be 4 half year courses of Physics Chemistry Biology and Earth and Space so that students can choose either 2 of these for one option line or all 4 for 2 option lines. Also general science or environmental science and human Biology can still offered as well.				2020-08-05 10:05:58	ANON-FDGN-6Q58-K	2020-08-05 10:05:58

Teacher	Option B	A is too vague and generic. Concept is great and a good teacher will know what to do. But a lesser quality teacher will omit too many foundational science concepts which will disadvantage the students. C is in depth and similar to first round of NCEA science in early 2000. But I imagine a lot of work and heavily content driven. This will lend the teaching focus to be assessment driven rather than quality teaching for understanding of foundational science and critical thinking. The good thing of this approach is it will ensure most teachers consistently teach the similar content and standard across the country. But it can be confining. B is therefore the prefered option. I taught something	A is too vague and generic. Concept is great and a good teacher will know what to do. But a lesser quality teacher will omit too many foundational science concepts which will disadvantage the students. Quality of teaching and learning will vary considerably across the country. Some students will be seriously disadvantaged if their teacher is not grounded in science and creative in combining the concepts, whilst addressing real world issues to meet student interests. The external assessment will need to be open choice to allow for the possibilities. It is likely many students will have gaps if a teacher has a strong preference for one area eg px at the expense of another eg earth sci. Unless students are given s ope to choose and the teacher facilitates which is similar to science fair projects. Ideal but not realistic. I tried with	I taught something similar in Australia in 2000. There is scope for creativity and quality learning if the teacher is competent. I imagine there might be people who will want a different combination eg chem and bio, px and earth. But all combos provide scope for integrating concepts and more realistic of the nature of science. The best combo will be determined by teacher and student interest. This approach allows for all teachers to ensure they include some particular concepts which is good to ensure foundational learning for senior science. It also allows room for creative science learning. This	C is in depth and similar to first round of NCEA science in early 2000. But I imagine a lot of work and heavily content driven. This will satisfy teacher of senior sciences as students have content to build upon. However, this option will lend the teaching focus to be assessment driven rather than quality teaching for understanding of foundational science and critical thinking. It can become dry and not engage the majority of learners. The good thing of this approach is it will ensure most teachers consistently teach the similar content and standard across the country. But it can be confining and not realistic of the	2020-08-05 10:10:04	ANON-FDGN-6Q3P-9	2020-08-05 10:10:04
Teacher	Option B	Allows for variety of student ability, plus caters for 'citizen' science as well as those pursuing an academic science path to university.	Too broad, insufficient opportunity for preparation for academic sciences into L2&3 NCEA			2020-08-05 10:28:07	ANON-FDGN-6Q3N-7	2020-08-05 10:28:07

Teacher	Option B					2020-08-05 10:39:08	ANON-FDGN-6Q3S-C	2020-08-05 10:39:08
Teacher	Option B	This option offers more flexibility for schools to offer a variety of science courses in Year 11, to cater for their specific students' needs. Option B would allow for schools like ours to continue with a "double science" course for students who want to explore concepts more deeply. without Achievement Standards to recognise their learning, we are very unlikely to be allowed to offer this extra option for our students. I imagine many other schools would appreciate the flexibility offered by Option B. Option B is a much-needed change to the status quo (unlike Option C), but will be an easier transition from the current structure. Option B gives more flexibility than Option A, while still having a strong focus on Nature of Science, and being more general than the Context Strand subjects	POSITIVES - meets the seven criteria - strong focus on Nature of Science from the NZ Curriculum - flexibility for schools to choose contexts for learning/assessment NEGATIVES - does not explicitly recognise the Science Context Strands of the NZC - reduces flexibility of schools to offer additional science courses (alongside a "core" science course) for students with a passion for science I do applaud the RAS team for the structure and vision in these four Achievement Standards. I just hoped there would also be some context strand-specific Achievement Standards also available to allow for course flexibility and/or extra Achievement Standards to recognise naturally-occurring evidence throughout the year,	POSITIVES - meets the seven criteria - strong focus on Nature of Science from the NZ Curriculum - flexibility for schools to choose contexts for learning/assessmen t - flexibility for schools to offer additional science courses for students with a passion for science - explicitly recognises the Science Context Strands of the NZC NEGATIVES/UNKNO WNS - We do not know what the foci of the context strand-centred Achievement Standards will encompass, so they are an "unknown" - We do not know what Level 2 and 3 Chemistry, Biology, Physics and ESS will look like, so we do	POSITIVES - more "comfortable" for most NZ Science teachers - more Nature of Science assessment than status quo NEGATIVES - very similar to status quo under new headings - does not meet the seven criteria, specifically for a more general qualification - many new Achievement Standards for teachers to learn and implement Like the other two options, a lot of PLD will be required, and secure tasks will need to be provided in the early years. This option will be very popular with NZ science teachers, but it is	2020-08-05 10:41:55	ANON-FDGN-6Q3D-W	2020-08-05 10:41:55

Teacher	Option C	In today's modern world, we need people with more expertise. Certainly Physics is a challenging subject for many and is most difficult for people to master so I would contend we need to increase the content exposure. I was educated in the 1970s and we had PSSC Physics. Since those days, the subject has been horribly 'dumbed down' with the removal of the Coulomb Electrostatic force of a point charge, Newton's Universal law of gravitation and the reduction of a 3 dimensional world to a 2 dimensional world at level 3. For instance, the true pseudo-vector nature of angular momentum and the magnetic field is now taught as a 'magnitude only' topic. New Zealand used to have a high class content knowledge	What does the word broader mean? It might be misrepresented as more of a 'dabble' and less depth. This would be wrong. Certainly we can provide 'general' broad based standards for those less inclined to take science to an expert senior level, however we must not lower our penetrating deeper insights for those students who need or wish it. How do you explain the origin of the universe? It is a quantum mechanical response required here and it would need a strong foundation in Physics to finally broach such a question - something that would be possible later in senior years if we don't make the subject so 'broad' that we no longer see the deep fundamental insights. 'Broadening' is vital for the arts; I teach these too - but Science requires a penetrating	Whose vision for a 'broader' overview are we using? Who thought of this? I do not know who these 'experts' are by name - yet I would have you accept that I too am an expert. We all need to be part of the construction of these, and other categories not mentioned but we are not. Very sad. Words such as 'coherent'. What do you mean? Coherent light is that of laser light. For instance, in the classical picture; all the light waves are in phase travelling in the same direction. In the quantum picture, the photons work together described by a single quantum state that represents these Bosons all possessing the same quantum	Science needs it's principles to be presented to those interested at as early a stage as possible. I would therefore support the unique and special aspects, principles, revelations and content that each branch of science offers as early as possible. This would permit different pathways for different people for as great a diversity as we have in our community. We need to think in an expansive, full and rich way; not just spreading thinly our beautiful subject so that everyone becomes better and better at knowing less and less until we all become experts at knowing nothing. Science, in it's true majesty, is to be	2020-08-05 10:50:03	ANON-FDGN-6Q3Y-J	2020-08-05 10:50:03

Teacher	Option C	Allows for flexibility and choice. Allows skill development, innovative approaches and for content knowledge development in the key Science areas.	It seems skewed heavily towards students leaving at the end of Year 11 and hardly caters for development of specific subject knowledge and skills.		This allows for a nice balance between skill and specialist knowledge development. If this approach was taken, I would imagine Chemistry and Physics selected as the two externals, a Biology and a Nature of Science selected as two externals at our school.	2020-08-05 12:11:00	ANON-FDGN-6Q33-C	2020-08-05 12:11:00
Teacher	Option A	Allows teachers to work to their passions but also actively promotes NoS at a key stage of students' learning	Positive Allows for local, real contexts to be investigated Negative None Use ESS as the umbrella	Pūtaiao - natural world - encompasses all sciences However, natural fit between Bio and ESS ESS also links strongly to Phys and Chem	Will contribute to perpetuation of superiority of specific subject areas and diminishing of ESS and Ag	2020-08-05 12:13:58	ANON-FDGN-6Q3T-D	2020-08-05 12:13:58
Teacher	Option C	It gives more scope for students, as they will naturally have different interests. Also, it ads more variety for teachers to teach to their strengths.	Too general and restrictive	Better than A, but, again, too restrictive, with a chance of generic questions seeping in.	Much more compatible for specialisation for both students and teachers. They could also be incorporated into other subject areas, eg Geography	2020-08-05 12:23:07	ANON-FDGN-6Q34-D	2020-08-05 12:23:07

Teacher	Option C					2020-08-05 12:24:16	ANON-FDGN-6Q3J-3	2020-08-05 12:24:16
Teacher	Option C	This allows students to be more well prepared to understand Level 2 pure science subjects.	Overly broad coverage will not prepare students for the rogours of Level 2 pure sciencd subjects.	The combinations will not enable Level one students to receive more detail instructions or learn at the level to do Level 2 pure science subjects.	This is the best choice to prepare studetns at Level one for undrstanding Level two concepts.	2020-08-05 12:46:13	ANON-FDGN-6Q3Q-A	2020-08-05 12:46:13

Teacher	Option B	There is still a focus on NOS and only limited standards based on content. Gives some flexibility, but keeps it manageable. Allows some choice for teachers who struggling with the concepts of just NOS.	I find the concept of the 2 externals difficult to get my head around. I do not see students getting engaged and inspired doing them. Love the internals!!!	Gives some choice You must make sure that content is removed and not just taken from this system and squeeze it into this new system (I have already heard of that concept being put into the potential Chemistry matrix from Y11-13 - some people think they can just reorganise their units, instead of making the fundamental change we are wanting in our curriculum. . We really do need to be more student centred and providing 'real life science opportunities. We try and cover too much in the current system,.	Too much content / too much choice	2020-08-05 12:57:10	ANON-FDGN-6Q36-F	2020-08-05 12:57:10
Teacher	Option C	Choice			Ensure pld for non-specialists	2020-08-05 13:13:13	ANON-FDGN-6Q37-G	2020-08-05 13:13:13

Teacher	Option C	Allows students to choose their area of study at Level 1 as opposed to Level 2. Provide the desired focus on NoS but maintains an appropriate level of knowledge without which most nature of science reasoning is spurious. Although the cost is excluding all but one knowledge domain from most students' level 1 study, those interested in Sciecne can choose all three sciences, just as those interested in the social sciences can choose History, Geography and Economics.	Positive: less focus on knowledge allows less able students to engage in reasoning about the world. Focus on scientific method MAY convey why scientific knowledge is more valid than knowledge from other domains. Negative: less knowledge means appropriate reasoning is calling upon naive impressions about real world (e.g. Aristotelian concepts of motion or static unchanging life-forms) and produces spurious conclusions. You would not need subject specialists for level 1 as an educated adults general knowledge would suffice. Unfortunately this would be at the detriment of student understanding.	Positive: has some focus on knowledge but provides time for extended NoS investigations, allows less able students to engage in reasoning about the world. Has foundational content knowledge required to be learned from 2 domains. Negative: some domains are excluded e.g. if Phys and Chem, then Bio not included. It would be extraordinary if an educated New Zealander was not exposed to, for example, the theory of evolution at level 1. You would not need subject specialists for level 1 as an educated adults general knowledge would suffice. Unfortunately this	Positive: allows a focus on an knowledge domain, but provides time for extended NoS investigations, allowing all students to engage in reasoning about the world through a particular lens. Good preparation for Level 2 domain specific study. Allows the interested student to take two or three Science courses and gain a deep understanding of the domain and domain-specific reasoning. This is a privilege that the social sciences and technologies have enjoyed for years e.g. taking History, Geography and Economics, or Information, hard and soft technologies, negative: Most	2020-08-05 13:39:47	ANON-FDGN-6Q3G-Z	2020-08-05 13:39:47
Teacher	Option C	more suited to our clientelle	not enough content to prepare students for level 2 courses.	chemistry and bio or physics and chemistry are the two which fit together.	we need to see some standards so we can start to develop a course.	2020-08-05 15:42:25	ANON-FDGN-6Q3H-1	2020-08-05 15:42:25

Teacher	Option C	More flexibility in the structure of courses to provide for students of differing abilities and intentions in pursuing a Science pathway.	Not enough flexibility	Physical and natural Sciences are a reasonable way to split them	Most flexible to allow for general Science to be taught for science literacy and skills for life, but also allows those who want to pursue an academic career in the Science field to get the extension/diversity they require	2020-08-05 16:05:48	ANON-FDGN-6Q3E-X	2020-08-05 16:05:48

Teacher	Option C	Option C provides the chance to differentiate courses for students and student need e.g general science for some and specialised standards to support interests and pathways.	As a Science teacher I do not feel that Option A will be easy to deliver given general inclusion of all science within each standard - how will a focus be determined. It seems too vague/broad.	It is better than Option A - provides breadth but also more options to have specialist teaching and learning to prepare students to transition into L2 & L3.	Option C provides the chance to differentiate courses for students and student need e.g general science for some and specialised standards to support interests and pathways. Gives schools the opportunity for specialist teaching and learning if able to in their kura and helps to prepare students to transition into L2 & L3. Does not dumb down science any further.	2020-08-05 19:09:24	ANON-FDGN-6Q3B-U	2020-08-05 19:09:24

Teacher	Option C	I like the breadth that this option offers. We are going to be able to pick and choose options that are appropriate for our students learning. Having the option of individual Sciences is going to be able to build skills of students that will allow deeper understanding.	The Nature of Science is very important to be apart of all Standards. Having this as the front of the standard and using a range of subject context is completely possible. I feel that we would lose some of the deeper understanding that comes with the current individual standards. I need to investigate whether some practical work would be lost.	This did not sit well with me this option - it appears that a middle ground was tried to be reached and this is neither one or the other. To me, this is not an appropriate solution.	Positives: Able to keep a wide selection of options that will allow appropriate courses to be designed for students with a passion for the Sciences. This option will increase the broadness of the students understanding Gives the students a taster of what the individual Science may offer in Level 2 and 3 Able to keep Nature of Science Will give the students to build a greater skillset Negatives: Maintaining the standards will be an increased cost to NZQA compared to only having 4 NOS standards to select from	2020-08-06 07:55:32	ANON-FDGN-6Q3K-4	2020-08-06 07:55:32
Teacher	Option C	Course better for student learning and correct background for y12 and y13	negative - too vague as to what students, inequitable	positive - good flexibility	positive - covers key areas for students going on	2020-08-06 08:49:43	ANON-FDGN-6Q3F-Y	2020-08-06 08:49:43

Teacher	Option C	Gives all schools the flexibility to design a course appropriate for their learners. Good background for senior subjects.	No positives. Lowers the bar.	Has more flexibility, but not enough.	Flexible for all schools. The best option.	2020-08-06 08:50:50	ANON-FDGN-6Q3A-T	2020-08-06 08:50:50
Teacher	Option C	This option provides the most choices to customize the course provided to the student and school needs.	Positives: Allows for a broader, cross topic integration of ideas. Negative: Is incredibly broad and would be very difficult to make consistent between classes and schools. Also, would be far less structured.			2020-08-06 08:57:13	ANON-FDGN-6Q35-E	2020-08-06 08:57:13
Teacher	Option C	Gives schools choice to construct a course the suits their students and prepares them for senior subjects	Hopeless.	Slightly better as provides subject-specific standards	Specializes students too young and makes it difficult for students to jump across the different disciplines.	2020-08-06 08:58:02	ANON-FDGN-6Q31-A	2020-08-06 08:58:02
Teacher	Option C	It give teachers more opportunity to teach to their strengths and schools the choice with what standards to pursue that are best for their students.				2020-08-06 09:00:06	ANON-FDGN-6Q3C-V	2020-08-06 09:00:06

Teacher	Option B	I see this option as giving teachers the most flexibility in designing a curriculum that suits their learners interest. I think it is better to have this option compared to Option A and C because these two options may disengage learners. I'd rather choose standards with my learners based on their interests, this gives students power over their learning.	Positives - Potentially less work for teachers. Negatives - Its a standard approach where all NCEA L1 students will come out with the EXACT same learning. This will kill creativity for both teachers and students. It meets 6/7 of the criteria. It does not meet : 6. How the subject supports the Crown's obligations under Te Tiriti o Waitangi. However this could be navigated by ensuring that the contexts for each of the standards have allowed for the inclusion of learning about aspects of Maori culture. If this approach was finalised, the ministry and Subject expert groups would need to run PD for teachers in order to ensure that teachers are confident in the material and ensure student engagement is high.	Positives - Flexibility for teachers, flexibility for learners. Potentially less work for teachers. Yes I do believe this would meet the seven criteria. Winning combinations: - Chemistry &Physics - Chemistry & Biology - Chemistry & Earth and Space Science Chemistry can pair up with any of them! (I may be biased though - I am a chem teacher).	This does not seem to be much different to what is currently being run. Although I like this option as it gives teachers and students the most flexibility for designing their learning, I don't believe it meets the seven criteria, particularly the NCEA Level 1 as a broader, foundational qualification. Students currently are coming out with vastly different experiences of L1 Science and therefore it is not meeting 7. How the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification	2020-08-06 09:18:11	ANON-FDGN-6Q3W-G	2020-08-06 09:18:11

Teacher	Option C	Either B or C. Better balanced and more options.	The positive is that there is 1 course for all. This is also a negative. Too vague. It looks like Social Science. Students will not gain the required skills for future pathways in science.	I don't mind option B. More options to run different courses.	More options	2020-08-06 10:20:02	ANON-FDGN-6Q3M-6	2020-08-06 10:20:02
Teacher	Option C	Most diverse giving good foundation for options in Level 2	Sets the bar too low for Science especially if students want to progress to L2 and 3 whilst at school			2020-08-06 10:31:42	ANON-FDGN-6Q3R-B	2020-08-06 10:31:42
Teacher	Option C	More options and flexibility for staff & students.	Not flexible.		You need option C simply because it will scaffold the majority of students into the L2 & L3 Sciences, while still catering to the rest of the students who will only do Science to Level 1.	2020-08-06 10:35:30	ANON-FDGN-6Q38-H	2020-08-06 10:35:30

Teacher	Option C	but without the general science nature of science strand. Unless this is unassessed. I have taught since before NCEA was introduced and when I first started teaching some schools were contextualising topics eg garden shed (had bio and chem). It is not as clear to students what they are learning and lets face it science is about facts. as I teach I constantly give real live examples to students so they can relate science to everyday life. I know what I used to teach at yr 11 and consequently I know about the indepth knowledge students gained about the scientific world they live in compared to what they learn now. Most of this additional knowledge (now not actively taught for the 3 external sandards) such as planet earth and beyond, electricity and organic chemistry can	- good for the lower kids but confusing and not helpful for the academic students. - yes definitely broader - excellent schemes for schools need to be developed with practical/texts/workbooks that match	- students are not able to choose what sci strands they want to study at yr 11 based on only 2 yrs of science at secondary school (let's face it that most do very very little at primary and intermediate in science) - contextual stuff again is very difficult to plan. I was a first year teacher when the new curriculum came out and we had to plan all new schemes of work. We had to then replan when NCEA came in. If a contextual option is brought in who is going to plan and give out new schemes to schools???	I think if one contextual topic is taught to start the year it would be a good thing. I don't think 20 credits is necessary to get the students to do. Why don't we just teach and not assess them? Get them to enjoy learning and not actually get stressed out. These are 14-16 year olds. I do think they need to know what the individual science subjects are for yr 12 options.	2020-08-06 10:43:18	ANON-FDGN-6QEP-U	2020-08-06 10:43:18
Teacher	Option B	Still has all the Science strands & some of each context	Too vague			2020-08-06 11:06:56	ANON-FDGN-6QEN-S	2020-08-06 11:06:56

Teacher	Option B	Flexibility Not as tied down as previous course Allows justification og single subject sciences	Challenge for low ability High community less exploration Step too far Challenge for single science subjects	Nice combination more real world allows for specialized teaching	Traditional no movement not addressing compartmentalizati on of sci	2020-08-06 11:34:02	ANON-FDGN-6QES-X	2020-08-06 11:34:02
Teacher	Option B	reasonable numbers of assessments and good integration of strands. It looks more suitable to our students according to their needs	It looks too general, insufficiently provides students the opportunities for then to be able to lay a good foundation for further specialized learning. We seemingly need more highly skilled workers, besides people with general science.	Students have choices according to their needs. It meets the needs of industries as well	It looks that there are too many assessments unless some are assessed in the form of assignment.	2020-08-06 12:28:24	ANON-FDGN-6QED-F	2020-08-06 12:28:24

Teacher	Option C	This option gives a variety of options for students in different science areas that is not heavily focused on the Nature of Science.	This option does not support students who will move on to level 2 in science subject areas. This option is ideal for students who may not continue with science as they will gain skills that could be transferred to other subjects such as critical thinking and analysing. Level 2 + science students will need more than soft skills to be successful. They must have foundation knowledge from Level 1 and below to support their learning in Level 2 onwards. Therefore it does not meet the criteria.			2020-08-06 13:02:04	ANON-FDGN-6QEY-4	2020-08-06 13:02:04

Teacher	Option C	Option C allows for flexibility around supporting diverse needs of our learners. Some students are highly able and want an increase is breadth that is offered while other students with learning difficulties would not be well supported in a highly external subject	A positive is around assessing based on Nature of Science and then threading it through different contests but offer little flexibility in the way it is assessed e.g. internal vs external. Not really it will restrict students have a broad understanding of key concepts from a range of ideas in science. Effective PD on how to deliver and assess NofS - as it is a huge shift in what it is and how it is delivered.	We feel this is an attempt to compromise but does not meet the needs of our learners as we would end up trying to shoe horn topics together that don't naturally fit in with one another.	This offers the most flexibility in what we can deliver. C gives school the ability to have context based courses if they want them.	2020-08-06 13:12:46	ANON-FDGN-6QEU-Z	2020-08-06 13:12:46

Teacher	Option B	I am from a traditional school. To protect my specialist subject, I want to choose C. But, I can not be scared of change, and I acknowledge the changing knowledge model of the future. Option B will see significant changes to the sciences within schools, while still allowing flexibility to cater for the gifted and talented students who benefit from more specialised learning opportunities.	I may have chosen this if we had good information, but the explanation provided is a clear as mud, and is meaningless, so no support from me.	Lucky for Biology as a subject, as not many schools will offer the Earth and Space modules, so Bio gets a big push Physics and Chem have to share.. well its about time that they realised that Biology is better anyway. (lol) I am interested in seeing what teaching "The Nature of science" for a whole year will look like... Considering how poorly information on this consultation has been presented, clearly you are hoping we will do nothing so the mandated A will go through unhindered.	Very similar to the current model, and seeing as you are mandated to change the model to option A, this feed back will be ignored.	2020-08-06 14:46:47	ANON-FDGN-6QE2-W	2020-08-06 14:46:47

Teacher	Option C	It gives maximum flexibility. Schools need to develop teaching programmes based on the curriculum not on some prescribed assessment matrix.	1. Positives: flexible content possible within the constraints of the science capabilities Negatives: schools/teachers not up to speed with capabilities or disagree with this. Not completely flexible emphasis 2. Yes. 3. Provide tested curriculum templates and assessment exemplars	1. Positives: Allows schools to develop a course less constrained by capabilities Negatives: more variability in approach across schools 2. Yes 3. Resources as above. 4. ??	1. Positives: matches L2 courses. Gives schools more options. Negatives: ? 2. Yes 3. As above.	2020-08-06 14:49:59	ANON-FDGN-6QE3-X	2020-08-06 14:49:59

Teacher	Option B	Science is a content and skill based subject. To pursue science in the senior school and at the tertiary level, students need to have a knowledge and understanding of specific and complex concepts that often don't link to a practical investigation or a research scenario. Option B offers the opportunity for students to complete practical investigations or research investigation but also appears to allow for specialised content across the strands to be taught. I believe that at Year 11 students should still be doing a general science course rather than specialising too early. This option seems to encourage the learning of content as well as context across all strands while preventing too much opportunity to specialise within a strand .	I am wary of teaching all Science content within a context. Sometime content and skills need to be learned outside a context before they can be applied. For example multiplication tables and spelling words. This option will also narrow down the content for each strand even more than happens now. Our students will struggle at university and in the international arena if they do not have a broad content base.	See above for comments re preferred option. All pairs of science strands fit together as valid combinations. It is very difficult to make a completely informed response as every standard - both in NOS and strand has been represented as vaguely as possible. Is the focus of each standard going to be a complete shock to us?	This option just appears to provide twice as many choices for each strand and it looks like it promotes specialisation - which is what happens now with he options of L1 Physics, L1 Chemistry, L1 Biology and L1 Earth Sciences. Students do not need to be specialising this early.	2020-08-06 15:21:46	ANON-FDGN-6QET-Y	2020-08-06 15:21:46

Teacher	Option B	I think we should be teaching integrated science courses not specialist science courses at Yr 11. Option C allows the possibility of separate sciences. This disadvantages pasifika and maori students who probably wouldn't choose to do two or more lines of science in Yr 11. While I like the standards in option A I don't think they give enough flexibility for schools to adapt to the needs of their students.				2020-08-06 15:57:02	ANON-FDGN-6QEJ-N	2020-08-06 15:57:02

Teacher	Option A	Option A is based on the importance of the structure of the science learning area of the NZC, where the Nature of science is the overarching strand and this is taught within the context strands underneath. The Trial – Level 1 Science document outlines the context strands as still being part of the learning required in Level 1 NCEA, but the focus of the assessment will be on the NOS. Option A is the only option of the three that closest represents the signaled changes from the NCEA Change Package document. •NCEA Change Package 2 – Mana Ōrite mo te mātauranga Māori – The current system in science isn't equitable for Māori and Pasifika students. While on paper, the standards in the current science matrix might be accessed by any student in Level 1 education, the reality is	Please see panel above	I can only be deeply critical of Options B and C. Both are forms of streaming. Given the research about streaming and the effect on Māori student outcomes, this can only now be considered institutionalized racism. These two options are simply an attempt to placate the noisy teachers in NZ who think they speak on behalf of us all. They are the noisy teachers of NZ who think only their opinion matters. Some of the noisy teachers simply shifted their content from School Cert & Bursary into Achievement Standards in 2001, didn't unpack the Nature of Science as the overarching strand that should have been a main	Same as comments for Option B	2020-08-06 17:56:09	ANON-FDGN-6QEQ-V	2020-08-06 17:56:09

Teacher	Option C	Because I believe that each of the subjects listed in option C are themselves specialist subject areas and can and should be offered as such from Level One onwards, providing students with the option of learning more science at Level One. And, option A won't give those students going on in any senior science subjects the depth of understanding really needed to cope with Level 2 specialist science subject options. Option B, seems to be a poor compromise between options A and C.				2020-08-06 18:15:12	ANON-FDGN-6QE6-1	2020-08-06 18:15:12

Teacher	Option A	I agree that specialisation should not occur until level 2	Its good as its not too focused on a particular area of science too early all students in NZ will have a very similar learning experience, compared to what is currently offered around the country I believe option A was constructed to meet the 7 criteria, option B and C have been constructed as a compromise	Option B is OK	It looks like this option is got going to achieve the goals of the review. Teachers who dont want to change will get their way.	2020-08-06 20:03:45	ANON-FDGN-6QE7-2	2020-08-06 20:03:45
Teacher	Option C	More flexibility to work with different students	I believe it meets the criteria. The positives are it addresses the need for students to see relevance of science to them and see science as something that is happening now all around them and that it affects them and requires them to engage with it. Negatives are that the knowledge base covered is left to good luck. It might not be intellectually challenging for many students who already see the point of science.	still meets 7 criteria but allows coverage of other essential skills and knowledge	Lots of combinations possible for different groups of students. negatives is it is close to status quo so schools can interpret as they have in the past. I think it is up to schools to make it follow the vision for a broad foundation and ministry can visit (e.g. Mike Stone etc) the departments to give half hour pd to help develop or appraise a course.	2020-08-06 20:35:49	ANON-FDGN-6QEG-J	2020-08-06 20:35:49

Teacher	Option C	Greatest degree of flexibility to permit the teacher to set varying levels of complexity.	Option A appears too limited in its variety. Does not allow specialisation in any of the main threads: Biology, Chemistry, Physics. The gap between level 1 and level 2 would grow and students would be less equipped for level 2.	A better option but still not equipping students for the rigours of level 2 and level 3.	Teachers will have more flexibility. Students will be best equipped to choose pathways through the three core subjects ultimately to level 3 and scholarship.	2020-08-06 21:09:52	ANON-FDGN-6QEV-1	2020-08-06 21:09:52
Teacher	Option B	Great combinations and choice		Current combinations are good, but flexibility will be better, eg choosing the mix of 4 subjects, bio + che or phy+ ess are equally interesting		2020-08-06 22:39:50	ANON-FDGN-6QE9-4	2020-08-06 22:39:50

Teacher	Option C	Because this gives schools the flexibility to develop courses that are appropriate to their learners and their community. It gives the option of more content dence courses that will better prepare those students who want to continue with science at level 2 and 3.	Positives are it develops big ideas. I do not believe it meets all seven criteria Negatives are it restricts the types of courses that can be developed. Not enough content to develop critical thinking from. Will not prepare students for the demands of level 2. The ministry could provide significant PD on how to effectively teach these new standards.	Positives it provides a balance between option A and B. Negative is it does not provide as much choice as option C It could meet the criteria	Positives: provide flexibility to schools to develop their courses. Will meet all 7 criteria.	2020-08-07 10:23:35	ANON-FDGN-6QEX-3	2020-08-07 10:23:35
Teacher	Option C	More flexibility and covers more science areas	Not recommending this one. Very Limited.	This could be an alternative to Option C	More flexibility and covers more science areas	2020-08-07 12:01:28	ANON-FDGN-6QEE-G	2020-08-07 12:01:28
Teacher	Option C	The specialization into specific disciplines will make it easier when transitioning into the subjects at levels 2 and 3				2020-08-07 12:45:54	ANON-FDGN-6QEB-D	2020-08-07 12:45:54

Teacher	Option C	C gives the greatest options to be responsive to students needs and interests. Courses could be based on physical sciences or natural sciences or a combination.	Negative - is too much focus on the nature of science without the grounding concepts needed for the distinct science disciplines. It does not support coherent and robust pathways into level 2. Students moving schools will not have standardised content/assessments. It would be less credible internationally. There will be no standardised learning pathway. A focus on report writing as a mode for assessment is not good for those with literacy challenges. Disadvantage to some.		Positive - more choice to develop a course catering to be responsive to students. Nationally students would do similar subject content. Can still assess a nature of science standard. Level 2 courses would be able to assume that previous 'subject specific' content had been covered.	2020-08-07 14:09:03	ANON-FDGN-6QEZ-5	2020-08-07 14:02:28
Teacher	Option C	It is the best for pathways into engineering/ MEdicine	Too Vague. Good if you want general science	It is alright for students wanting a vocational entry pathway	Best for students wanting to go into Science pathways	2020-08-07 14:26:38	ANON-FDGN-6QEF-H	2020-08-07 14:26:38

Teacher	Option C	Allows for more flexibility to run courses that suits a particular group of students. Gives low ability and high ability students chance to excel by offering courses that suit their needs and preferences	Too vague and will be poor preparation for Level 2 Sciences, in particular students that are aiming at STEM careers.	It offers some choice for the design of different courses Some specialisation is lost.	Allows for more flexibility to run courses that suits a particular group of students. Gives low ability and high ability students chance to excel by offering courses that suit their needs and preferences	2020-08-07 14:31:59	ANON-FDGN-6QEA-C	2020-08-07 14:31:59
Teacher	Option C	Greater flexibility. Provides students with more experience of the areas to help with making better decisions for L2. Stimulates students with a real interest in specific sciences.	Positive: Brief snack of different areas. Negatives: Not enough flexibility for courses within the school.	Positive: Allows some specialization for students wanting/requiring extension in particular areas. Negative: Still not enough flexibility for courses within the school.	Offers the best of A & B and more besides.	2020-08-07 16:02:32	ANON-FDGN-6QE5-Z	2020-08-07 16:02:32
Teacher	Option A	Simple and straight forward. Less pressure and hierarchy on students. Everyone will cope.	Yes meets the vision	Doesn't meet vision	Def doesn't meet the vision	2020-08-07 19:11:07	ANON-FDGN-6QE1-V	2020-08-07 19:11:07

Teacher	Option C	Best meets the seven criteria. Gives greatest flexibility to providers to develop science courses that best meets the needs of different groups of students. Provides dual pathways to prepare all students as scientifically literate citizens but also allows some studnets to follow their passions and dreams into science specialist orientated career paths.	Positives: 1. Reduces the current fragmentation of science becuase of the proliferation of science standards across the matrix. This would produce more commonality between schools but only based on a one size fits all model best suited to Stalinist cultures. Negatives: 1. Only covers one of the 5 strands of the NZ Science Curriculum and it is difficult to understand how the Ministry could actually allow this option to be promoted as a viable and valid interpretation of the curruiculum. 2. Is likely to lead to fewer students undertaking study of specialist science subjects at higher levels. 3. Will probably increase the gap between the haves and the have nots and futrther reduce opportunities for already disadvantaged groups of students. It does not meet criteria	Positives. 1. Meets most of the seven criteria. 2. Allows significant flexibility to providers to develop science courses that best meets the needs of different groups of students. 3. Allows for some possibility of dual pathways to prepare all students as scientifically literate citizens but also allows some studnets to follow their passions and dreams into science specialist orientated career paths. 4. Significantly reduces the current proliferation of standards across the matrix which would mean less variation between a wide range of school. Negatives, 1. By requiring pairs of specialist	Positives. 1. Meets most of the seven criteria. 2. Allows maximum flexibility to providers to develop science courses that best meets the needs of different groups of students. 3. Allows greatest possibility of dual pathways to prepare all students as scientifically literate citizens but also allows some studemnts to follow their passions and dreams into science specialist orientated career paths. Negatives. 1. Reduces the proliferation of standards but would still allow considerable variation between schools - which may not always be in the nest interests of the	2020-08-08 11:54:55	ANON-FDGN-6QEM-R	2020-08-08 11:54:55

Teacher	Option B	Gives a good range of subject options for important prior knowledge to build into level 2, (which is already a large jump in content knowledge), but also maintains the focus on NoS.				2020-08-08 12:14:23	ANON-FDGN-6QER-W	2020-08-08 12:14:23

Teacher	Option C	Maintains choice and opportunity for academic rigour as well as foundation for L2 Sciences. It's a bit insulting to thinking we won't be addressing NOS if we still can keep separate Science Standards. NZ needs good Science students - don't put them even further behind by only offering us Option A where direction and depth will depend on teacher interests.	There are no positives, only negatives. NZ already behind by only really starting Science coherently from Y9. If this approach is finalised, the Ministry will be looking for a lot of new teachers! The Subject Expert Groups will have a lot of resistance from those of us who do NOT think this a way that all schools are able to teach Science effectively.	The positive is it us better than the dreadful Option A! However Chemistry and Biology fit better together than Bio and EES. After all does NZ need students who might follow medical pathways? In schools that can only offer one line of Science you potentially could be restricting future pathways - or have students opting into Level 2 with little / no relevant prior experiences, not even a taster experience of a subject. Option B could enforce earlier specialism for some students - the very thing this review is trying to avoid. However this option potentially supports the credibility of NCEA as a qualification overall among stakeholders	YES! The option of reason - that can offer a balanced Science Course that would suit the majority of students, that is flexible enough to be designed to meet the needs of different cohorts and different cultures/ethnicities and different abilities. Of all the three, this option potentially supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification the best.	2020-08-08 12:26:51	ANON-FDGN-6QE8-3	2020-08-08 12:26:51
Teacher	Option B	I am in favour of choice for students and schools to retain more specialist science courses	Very general.	Enables schools to offer broader choices and enables student choice	Too complicated	2020-08-08 12:59:59	ANON-FDGN-6QWP-D	2020-08-08 12:59:59

Teacher	Option C	I believe it will prepare students for their senior science courses the best.			Let specialist subject groups determine and set the standards including assessment so there is one clear voice.	2020-08-08 13:11:09	ANON-FDGN-6QWN-B	2020-08-08 13:11:09
Teacher	Option C	Introducing choice to level 1 is important. This will allow schools to specialise in different subjects, and give students the best possible preparation for level 2 and level 3 specialist subjects.	Positives: potential for schools to integrate more applied science into the curriculum at level 1. Negatives: removes any preparation for specialist subjects at levels 2 and 3. Expert groups need to have a broad range of assessment tasks ready for teachers with different focuses so that there is choice and sufficient exemplars for teaching ideas.	Positives: potential for schools to integrate more applied science into the curriculum at level 1. Negatives: reduces preparation for specialist subjects at levels 2 and 3. Potential to create semesters in Science L1 to fit specialist teachers into each standard. Expert groups need to have a broad range of assessment tasks ready for teachers with different focuses so that there is choice and sufficient exemplars for teaching ideas.	Positives: potential for schools to integrate more applied science into the curriculum at level 1. Best option to prepare students for specialist options at level 2 and 3. Negatives: content may be too broad to effectively support student transition into levels 2 and 3. Expert groups need to have a broad range of assessment tasks ready for teachers with different focuses so that there is choice and sufficient exemplars for teaching ideas.	2020-08-08 15:04:07	ANON-FDGN-6QWD-1	2020-08-08 15:04:07

Teacher	Option B	Allows some flexibility on the introduction of Nature of Science but allows schools to transition and choose a variety of courses. Allows students to choose areas they are interested in	Too big a change for most teachers to cope with quickly. Will ensure everyone takes NoS more seriously and this will have a positive impact on year 9-10 delivery, shifting away from content and towards NoS and capabilities. The ministry and SEGs could extend the 'Understanding progress from levels 2-4' document particularly p6-7 (the rainbow grid) to show how the capabilities move into level 6 and beyond. Very clear guidelines would be reuired for teachers to understand and teach these standards.	Allows students to choose a course they are interested in (if schools offer more than one course). Allows teachers to use what they already know but start to learn about NoS. The current combination is good. Tertiary needs to recognise all strands as worthwhile	This will be a backward step, old fashioned schools will choose individual sciences and NoS will be ignored, will see the old gender splits.	2020-08-08 15:26:23	ANON-FDGN-6QWU-J	2020-08-08 15:26:23

Teacher	Option C	Option A should not be allowed to happen. This re-modeling of NCEA has been used as an excuse to completely ruin science for the majority of students and will go nowhere towards building a knowledge based economy and strong science foundation in the future. Furthermore it will undermine the progress of the separate disciplines within science. Option B and C must offer something better but the level of flexibility offered by any of the options does not measure up to what we already have. C gives the greatest flexibility but there is the issue that we would have to go with B or C because option A is such a backwards step from what we currently have at level 1.	There needs to be a strong knowledge base for future sciences at level 2 and 3 and for tertiary study beyond. Assessment against nature of science should not be the driver for assessment in science it should be knowledge and understanding and rigor. The ability to allow for building on deep knowledge and broad base of understanding is best achieved by detailed learning in chemistry, biology, physics and ESS. This is how you gain foundational knowledge. Option A is the worst possible option of all because more than any other option it is an example of assessment driving the learning because it is so fixated on the nature of science. Don't turn science into social studies. The model we have currently is far more flexible for catering for	Positives are a bit more flexibility but it has very little substance to work on and would need a lot more time back at the drawing board. You need to give schools the option to obtain level 1 qualifications with a good foundation a knowledge being assessed and it appropriate depth so that successive years can build on that knowledge. To ensure schools can teach science effectively just tweak the current standards or blend them. You don't need to break the system and totally rebuild it. Many teachers have been horrified by the ideas put forward by the working group which was not a true representation of	This offers the most but at the cost of what is internal and what isn't. You need to have standards at level 1 which cover the requirements for each of bio, chem, phys and ESS. Ignore the NOS system and generate blended standards similar to what we already have and make this the science course for level 1. Provide bio, chem, phy, ESS standards for those schools who wish to continue with that model at level 1. If you want to have level 1 science optional then don't change it from what it has been since 2008. Why change if you want it to be optional? You cannot finalize without having	2020-08-08 16:10:41	ANON-FDGN-6QW2-F	2020-08-08 16:10:41

Teacher	Option C	Provides a better pathway into senior sciences Option A is simply a level 1 certificate pathway and does nothing to support student at higher levels	If this is finalised as the only option I will not be offering level 1 science as a subject. Currently some school are offering level 1 and with this switch I would not be surprised if more followed.	If the standards offered for specialist courses are similar to those proposed in Option A how are these 'externals' valid? No way to ensue authenticity of student work. Ghost writing, plagiarism, teacher guidance/input will be impossible to prevent.	Again my decision to engage with any changes to Level 1 science in my school will be dependent on exactly how these changes will impact the overall achievement and preparation of student for higher levels.	2020-08-08 16:14:29	ANON-FDGN-6QW3-G	2020-08-08 16:14:29
Teacher	Option C	More options to write authentic science course to cater for all learners and their abilities talents and interests	Not enough options to cater for many different learners	Not as much choice to make authentic courses	More options to write authentic science course to cater for all learners and their abilities talents and interests	2020-08-08 16:23:01	ANON-FDGN-6QWT-H	2020-08-08 16:23:01

Teacher	Option B	Offers a broad, foundation for vocational or academic pathways. A school can cover NZ curriculum and create a coherent local curriculum, which is fitted to individuals. Its flexibility allows inclusion of material in harmony with Te Tiriti principles Could enhance the credibility of NCEA as a qualification by its breadth of coverage.	POSITIVES Has potential to offer a broad, foundation for vocational or academic pathways. Broad standards could be developed e.g. Chemistry-Biology, Chemistry-Physics, Biology-Physics, Chemistry-Biology-Earth, etc. A school could potentially cover NZ curriculum and create a coherent local curriculum, which is fitted to individual needs. Is simple enough to manage. It allows for curriculum design that is in harmony with Te Tiriti. NEGATIVES Much work would be required of teachers in its implementation. It may harm the credibility of NCEA as a qualification by being too ill-defined. Schools could opt out and set their own exams to prepare for Level 2. Ministry and Subject	Has potential to offer a broad, foundation for vocational or academic pathways while also preparing students for Level 2 specialties. Ensures schools cover NZ curriculum while also creating a coherent local curriculum, which is fitted to individual needs. It allows for curriculum design that is in harmony with Te Tiriti. NEGATIVES Combination of subjects e.g. "Physical Science" as Chemistry-Physics may exclude others e.g. Chemistry-Biology, although other combinations could be covered in a Nature of Science context. Ministry and Subject Expert	POSITIVES Not much to change. Has potential to offer a broad, foundation for vocational or academic pathways. No much different than the present offering so less work involved for teachers. A school could potentially cover NZ curriculum and create a coherent local curriculum, which is fitted to individual needs. It allows for curriculum design that is in harmony with Te Tiriti. NEGATIVES Some school may sacrifice a broad programme to ensure students collect credits. May harm the credibility of NCEA as a qualification that can force students to specialise too early	2020-08-08 16:38:32	ANON-FDGN-6QW4-H	2020-08-08 16:37:51

Teacher	Option B	Has the four NoS standards and also allows for schools to develop specialist learning. L1 Science is a springboard subject into higher, specialised sciences. It is important to give scope for specialist learning (and assessment) in the four domains to more allow students opportunities to achieve and prepare for higher levels. Many students find the learning of content-specific topics easier (more concrete). Students at this age are generally less able (in my experience of low decile schools) to make the critical and analytical leap required for the NoS standards. Making assessment all about NoS and not about the content knowledge, is a backwards step for these young student's development. The biggest issue is with the presentation as	Negatives: Assessment in content-specific content knowledge not recognised as important . Science is a study discipline that relies heavily on background knowledge before critical analysis can be made. Importantly, only having four standards will prevent schools from offering specialist subject courses of chem/bio/phys at Year 11. This is a huge detriment to students and schools where these types of courses have been very successful. It is very important to allow schools to offer specialist courses, if their student & parent cohort want it. So no, for this reason, it does not allow for a broader qualification.	Advantages: Having an internal and external in each of the four Domains means schools will be able to offer a range of courses that mix-n-match internals/externals. This will allow a much more choice, flexibility and a broader range of learning and assessment experiences for their Y11 NCEA qualification. There should not be "subjects" as indicated on the matrix, but "domains" being: NoS, Material world, Physical world, Living World, PE&Beyond. Enforcing a criteria of "four standards per subject" is ridiculous. The NZQA framework as it is now doesn't fit criteria like this. Enforcing this onto	as above	2020-08-08 18:04:09	ANON-FDGN-6QW6-K	2020-08-08 18:04:09
Teacher	Option C	This option will offer schools the most flexibility in their courses. It will also ensure that students get a balance of science content and skills.				2020-08-08 18:23:43	ANON-FDGN-6QW7-M	2020-08-08 18:23:43

Teacher	Option C	Allows more variety when teaching - students are able to draw more links between areas.	Option A would be very difficult to plan effectively as the guidance would be narrow. As an NZ teacher who is currently teaching in the UK, the prescriptive specifications have the advantage of ensuring a wide range of content is taught allowing for a broad understanding of aspects of Science. This is beneficial for students who choose to drop it early.	We already compartmentalise areas of science and 'fit' them into boxes that don't really exist. There will always be overlap. This option is okay, the pairing would work.	Best option, yes it meets the criteria, yes it will allow us to teach science effectively.	2020-08-08 18:33:10	ANON-FDGN-6QWG-4	2020-08-08 18:33:10
Teacher	Option C	We can explore a range of topics for students to choose from.				2020-08-08 20:11:58	ANON-FDGN-6QWV-K	2020-08-08 20:11:58

Teacher	Option B	Allows more scope of standards to be taught without asking students to specialise early. 3 courses can be offered and realistically students could choose all 3 courses to cover level 1. Option a doesn't offer enough options while option c means students will need to choose at level 1 what to start specialising in.	Positives - nature of science is assessed. Negatives - it does not include vital content based strands. A broad, foundational knowledge includes content to be able to understand and interpret what is hapenning in the world. The level 6 curriculum is large and it is unlikely all of the content in each strand would be covered by 4 standards.	Positives - includes content. 3 courses means that students could cover all standards in a year of they wish, meaning they do not have to specialise early. Negatives - choosing what content from each strand goes into what standard. Some of the level 6 curriculum will not be covered. This means it will likely not be taught if there is no assessment attached to it. Schools will choose how to put courses together so I don't think it matters what courses are put together as a suggestion, unless the standard covers both curriculum areas.	Positives - allows for a comprehensive coverage of the curriculum. If all content is able to be assessed it is more likely to be taught. It also gives schools more flexibility to choose a course that is right for their students. Negatives - there isn't room in a timetable for students to take 5 Science courses so they would need to choose and specialise in a certain strand sooner.	2020-08-09 07:25:13	ANON-FDGN-6QW9-P	2020-08-09 07:25:13

Teacher	Option C	The flexibility offered by having a wider range of standards to choose from. Preparing students for senior science study, this would allow for more specific content.	There would need to be clear guidance around what these standards could look like to ensure effective delivery.		With this option you could have greater flexibility in the programmes offered.	2020-08-09 09:11:36	ANON-FDGN-6QWJ-7	2020-08-08 16:44:35
Teacher	Option C	Students will have the option to either specialize in one strand or get a general exposure to all strands				2020-08-09 09:17:15	ANON-FDGN-6QWH-5	2020-08-09 09:17:15

Teacher	Option C	To allow schools choice. To allow some academic rigour.	Positive-I think it is good to have more emphasis on the Nature of Science Negative - this option goes too far and does not meet the seven criteria. The assessment will be too subjective. The internal standards are already inconsistent across schools. They are currently time-intensive for teachers and students and requires a high level of literacy from students. This option increases this pressure. I do not think that only NOS focussed standards will adequately prepare students for Level 2 and 3- which we have no idea of what it will look like.	Positive - Better than A.	Positive - still a cut in the number of standards which was the aim, It will allow schools to tailor their own courses. We can create courses that suit those aiming for science-related careers and allow schools that like the NOS approach to use that as well. Negative - there is still no curriculum change which would have been great if we are overhauling the assessment to this extent.	2020-08-09 14:34:12	ANON-FDGN-6QWE-2	2020-08-09 14:34:12

Teacher	Option C	caters best for all ability of students, can be designed to suit clientele which can vary within and across schools.	lowers the bar to suit underperforming students rather than addressing the many issues that create adverse conditions for these students. Lowering the bar is not an answer and dumbs down the young people leaving school and entering the workforce/tertiary education. Does not cater to the high achievers and those preparing for tertiary study. Should not design a national qualification to improve statistics for the government or suit the ideology of a few people.	As per above.	Provides the opposite of A and B. Schools can design programmes at all levels to suit all aspirations. Does not dumb down the national qualification.	2020-08-09 14:58:00	ANON-FDGN-6QWB-Y	2020-08-09 14:58:00

Teacher	Option C	I think it's important to continue offering the single strand Sciences at Level 1 as it gives us more programme flexibility. This allows us to prepare our more able students for Level 2 and 3 Science, as well as developing programmes for groups of students that are geared to their interests. More specific standards will make administration and moderation more manageable.	Positives - more defined relationship with te ao Maori - based on 'Big Ideas' - students are assessed when they are ready Negatives - some activities seem too general / simplistic especially for more able students which may discourage students from entering - these assessment modes are vastly different to those in L2 / L3 specialised subjects; concerned this will affect student success at higher levels - decrease in authenticity - increase in teacher workload which may lead to schools opting out of offering L1 Science - decreased focus on a set of consistent Knowledge /Content which is needed for success in L2 sciences and beyond One of the main aims stated is Mana Orite –	Positives - More standards offered - more choice developing programmes; Merging subjects together can allow us to create links between them easier Negatives - What will the standards look like?; Increase in teacher workload; Decrease in authenticity for all of these standards will be an issue; How will these assessment modes flow into Level 2 and 3 specialised subjects?; May discourage people from entering and encourage people to leave the teaching profession; Will more schools opt not to offer Level 1 Science?; Decreased focus on a set of consistent Knowledge	Positives - More standards offered - more choice developing programmes; Fits with the model of 50/50 internal/external nicely; Keeps the single strand focus for schools who wish to maintain this; Allow us to cater to more able students; Offers flexibility in programmes we can offer across the cohort; Can be more inclusive for reasons stated above; Takes the grey-area out of teaching certain standards that are too broad and general; Depending on how the tasks are structured, this may not increase teacher workload; Will not affect authenticity of the tasks; Will enable us to cover of depth and breadth in Level 1	2020-08-09 15:14:43	ANON-FDGN-6QWZ-Q	2020-08-09 15:14:43

Teacher	Option C	This seems to be the most diverse option, allowing the core subjects to be taught. There is a lack of detail about what will actually be in each standard, which makes it hard to choose any option. Also, it would be good to know if that there will still be externally assessed examinations at the end of the year. I do not believe externally assessed work should be done by each school and sent in for marking, this is open to being misused. Having exams at the end of the year are the best way to assess.	Keeping the standards as discrete subjects instead of being under one umbrella of Nature of Science, will actually ensure a broader, foundational qualification. Option A will not provide this as it lacks structure and Science as a result would lose its quality.	Option B should be combined differently. Biology and Chemistry should be grouped, as should Physics with either Chemistry or Earth and Space. This option has more structure, but really what is the point in not having each Science area separated like option C has.	The best option in my opinion as it allows each of the Sciences to be taught discretely and ensures subject knowledge can be taught to a deeper level and enhance student understanding.	2020-08-09 16:50:46	ANON-FDGN-6QWF-3	2020-08-09 16:48:38

Teacher	Option C	This provides the greatest flexibility and would enable a school to run a range of Year 11 Science courses designed to meet the diverse learning needs of our students. The option remains of running a general science course based around the Nature of Science strands but other options are opened up that can be more focused on the contextual strands.	It meets the criteria based on the policy vision of a broader, foundational NCEA Level 1 . It does not do as good a job of meeting the criteria of supporting the inclusion of important and rich learning from the National Curriculum, supporting coherent and robust pathways into NCEA Level 2 and creating well designed and coherent local curricula, which support pathways for individual learners.	This option does a better job of meeting the criteria of supporting the inclusion of important and rich learning from the National Curriculum, supporting coherent and robust pathways into NCEA Level 2 and creating well designed and coherent local curricula, which support pathways for individual learners. The current grouping of contextual strands is probably the most logical.	This does the best job of meeting the criteria of supporting the inclusion of important and rich learning from the National Curriculum, supporting coherent and robust pathways into NCEA Level 2 and creating well designed and coherent local curricula, which support pathways for individual learners. The greater flexibility in constructing courses would enable the learning needs of a wider range of students to be met.	2020-08-09 17:23:10	ANON-FDGN-6QWA-X	2020-08-09 17:23:10

Teacher	Option C	The General Science standards are important for understanding the context and philosophical underpinnings/debates of science, including what is science, what makes something scientific, questions of method (how to authenticate a knowledge claim or establish a scientific fact) etc. The specialist subjects then provide teachers with choice and students with clear direction as to how to progress in NCEA in science.	Negatives - it is a narrow curriculum. It is not tied to any specialist area of science. It does hit the 'broad' target of NCEA Level 1 but not the 'foundational' target.			2020-08-09 19:01:01	ANON-FDGN-6QW5-J	2020-08-09 19:01:01

Teacher	Option C	I work at a school that has had great success in tailoring our level 1 science courses to fit our different groups of students. We offer 3 different courses, lower ability science, general science and extension science (extension science run across two option lines). The current matrix of 31 standards has allowed us to create 3 courses that suit our students and provides good pathways for them. Limiting us to 4 standards takes away all those options that I would to see us retain. I am also concerned by the incredibly high literacy requirement of the currently proposed standards which I feel would severely and unduly limit the achievement of our students. So I would like to see as many alternatives to these as possible.	I see two major negatives with this option, but one is tied to the currently proposed standards . Firstly this option limits ability for schools to provide multiple science courses at level 1. I.e. for us we wouldn't be able to offer double science. This is a major concern for us. It also inhibits us being able to create a science course for lower ability to students for those students to still experience success and keep pathways open. Secondly the statement of level 1 being a broader foundational qualification. The concept of foundational is really good one that I believe in but the proposed new standards are vague that they work contradictory to this idea of everyone developing and understanding the key and basic concepts.	I think this option is really positive and offers options for schools develop multiple courses that suit their students. I think the only negative that could come from this option is if each of the discipline SEGs aren't working on their own standards. Essentially it shouldn't matter what pairing of subjects are used (Chemistry and Physics vs Chemistry and Biology). What has been advocated for and pushed by this option is level 1 'science' courses with discipline specific standards which I think is a really big positive. What we need to support this though is really well written good quality standards	I think this would be a hugely positive option. It provides the flexibility for schools to develop the courses that meet the needs of their students and preserves good quality content and concept rich standards to choose from.	2020-08-09 19:16:48	ANON-FDGN-6QWC-Z	2020-08-09 19:16:48

Teacher	Option C	It provides the greatest flexibility for schools to design a course, or courses, that will suit the needs of their students.	Positives: The NOS focus is good Negatives: No credit available for any understanding of the contextual strands of the NZC. No flexibility for schools to design courses that suit their students. I do not feel that on their own these four standards provide a good foundational NCEA. Does not provide a good pathway into level 2 sciences. Would not make NCEA level 1 science a very credible subject. I would predict many schools would drop the subject if option A is chosen. If this is the selected option a lot (and I mean a LOT) of time and money will be required to upskill science teachers in these new standards.	Positives: Offers students credit for contextual understanding. Offers schools some flexibility to design courses. "Repackaged" subjects will force schools to rethink what they are offering and why. Negatives: Difficult to see how subjects will be naturally packaged up into internal/external chunks. Limited flexibility If finalised again time and money will be needed to upskill teachers on the new standards and how they are assessed. I prefer the pairing of Physics with Earth & Space Science, and Biology with Chemistry. Earth & Space cycles are driven by physics processes. To quote Terry Pratchett	Positives: Provides the most flexibility for schools to design course/s to meet the needs of their students. This would allow for courses that cater for students who are not intending to study sciences any further, and to prepare those who intend to study sciences at higher levels. Negatives: Schools may view this as "business as usual". However, this could be avoided by carefully considering the make-up of the standards within each subject. As with all the other options, time and money will be needed to ensure schools are properly prepared for the change to ANY new option.	2020-08-09 19:27:21	ANON-FDGN-6QWW-M	2020-08-09 19:27:21

Teacher	Option C	There is choice to have the bespoke course design that currently exists. This is needed to meet the learning needs of our diverse students. A sound body of knowledge is needed in the different arwas of science. NOS is the pedagogical tool to use in teaching and learning of the specialist content.	Only has one option to build a course so not as strong as the other options. Develop specialist content that covers what is already covered by the existing standards.	This is a poorer version of option c. There are quite different key knowledge themes in bio, chem, PHS and earth space science. Much like agriculture is its own subject.	Best option, as there is the space to assess courses in ways that are more relevant for our students (both those continuing with the specialist sciences and those who are not). Also, this process has been too rushed and not coordinated with the specialist science subjects in level 2 and 3. There needs to be significant funding and support. Like the subject specialists that could coordinate with regional associations to upskill and develop science teachers.	2020-08-09 19:36:41	ANON-FDGN-6QWM-A	2020-08-09 19:36:41

Teacher	Option C	Many of our year 11 students struggle with a mainstream course made up of internal and external assessment. Around 25% do not achieve any of the external standards. These students currently succeed with a course of internal standards tailored to be relevant to them and their interests. The strength of NCEA in Science has been the flexibility in putting together a variety of programmes of learning. I don't believe this could be achieved with option A. Option B is an improvement but forces scientific disciplines into two standards that would restrict the depth of learning that can currently be achieved, and the range of topics available.	Positives: Potentially greater consistency across the teaching and learning of science nationally, although many schools may avoid this by electing not to use the 4 standards, and either running their own alternative L1 programme instead, or beginning the teaching of L2 courses earlier. Negatives: Students who do not succeed in the external standards may become disillusioned by their perceived lack of success and choose not to pursue Science further. In our school I anticipate option A as having the greatest negative impact on Maori and Pasifika students. Schools and students have far less control over their learning programme. Science teachers in some larger schools will likely be out of a job as some courses are removed.	Positives: Compared to option A, this option offers more ability for schools to design courses that are relevant and useful to students Negatives: Forces disciplines together. Some contextual strand combinations might be valid but I expect this will limit the contexts available, and lead to some that are artificially constructed. I believe it could meet criteria 2, 6, and 7 but (depending what was currently offered in the school) could negatively impact (3) coherent and robust pathways into NCEA Level 2 and further study or training as well as (4) The extent	Positives: Compared to options A and B, this option offers more ability for schools to design courses that are relevant and useful to students. This is especially important for lower achieving students. In our Kura this often includes a large proportion of Maori and Pasifika students who would be severely disadvantaged with option A. Negatives: Doesn't achieve the goal of a broader foundational course. Aside from (1) regarding achieving a broader, foundational NCEA Level 1 with increasing specialisation at Levels 2 and 3, option C provides	2020-08-09 19:51:33	ANON-FDGN-6QW1-E	2020-08-09 19:01:40

Teacher	Option C	This option allows for both running both a "science for non-science students" course, containing the life-skills of nature of science, as well as several specific specialty science courses to best prepare students for the academic rigour of an engineering, technology or science pathway. To maintain (or perhaps attain) New Zealand's high standing in science and technology, we need to ensure that we are effectively supporting our young people in their academic pursuits. Removing assessed science content from NCEA Level One assessment, and replacing it with highly time-consuming nature of science assessments, will be detrimental for our students when taking up a speciality science at Level Two. NCEA was designed with the intention of allowing schools the	Positives: Emphasis on science capability and NOS, as well as teaching students about the relevance of science and to identify 'science' in their daily life. Good (possibly brilliant) as an option class, especially for students who are not intending to continue with science. Strong emphasis on mātauranga Maori (Criteria #6). Negatives: - Consequences for Science in NZ: Academic content to prepare for all three science at Level Two cannot be adequately aligned with a NOS-assessed Level One science course when this is the only option, especially around the assessment time required for these NOS based standards. This option would severely impact on the credibility of this qualification in my eyes, and I fear that this would have an ongoing	This option is an acceptable compromise, however, I fail to see what the goal of this would be except to appease both sides.	Positives: Maintains the emphasis on science capability and NOS, as well as teaching students about the relevance of science and to identify 'science' in their daily life. Allows for a NOS-assessed science option class, targeted at students who are not intending to continue with science. Strong emphasis on mātauranga Maori (Criteria #6). ALSO allows for schools to design "Pathway Science" courses to prepare students for the academic rigours of senior sciences. This is BY FAR the biggest strength of NCEA and this option would best allow this within the field of science. This is the option that will see our	2020-08-09 20:07:51	ANON-FDGN-6QWQ-E	2020-08-08 17:36:04
Teacher	Option B					2020-08-09 20:18:25	ANON-FDGN-6QWR-F	2020-08-09 20:18:25

Teacher	Option C	Option A is not at all suitable as it is, in effect, a new subject being introduced and we are losing the current foundational content of physics, chemistry, biology and earth & space science. Option B is still restrictive. Option C allows schools the option of developing courses which could be Option A type or option B type or so much more - according to the needs of the students. The great strength of NCEA has always been its flexibility and the option of being able to make courses suitable for different types of student.	It is good for students to learn about the nature of science, however, the reduction in available science standards is not acceptable. The specialised subject areas at L2 and L3 require a broad foundation which is content based. The proposals will increase the rift between “good” schools and "the rest" as the full content required may not be covered by these four “science” standards, particularly the foundational content for physics which also requires numerical competency. The proposed science standards are all “write about science” and do not adequately address the mathematical aspects of science. It would seem to have been proposed by people who did not enjoy science at school and who would like to make it as much like an arts-based subject as possible. So much for STEM. Do we want more engineers/medical	It is not clear whether schools would be able to pick and mix across the matrix and without knowing which parts of the subjects are included/excluded/ glossed over it is impossible to make an informed response. It is a compromise solution and therefore inadequate. Schools SHOULD be able to mix standards from different "subjects" and external examinations with questions demanding analytical and numerical skills should be offered.	Positives Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their students We can create courses that suit those aiming for science related careers as well as those that need the NOS skills that everyone should have Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount	2020-08-09 20:34:13	ANON-FDGN-6QW8-N	2020-08-09 20:32:21

Teacher	Option C	More choices available for our more able students and students intending to continue in specialist Sciences. Option B is okay but Option A is too non-specific and will prevent school-to school from being able to consistently cover material. Option C is the best as there is still a subject available for both students who will continue with a Specialist Science or won't continue with it.	Option A is too non-specific and will prevent school-to-school from being able to consistently cover material. This is only okay if students don't want to continue with Science. No it doesn't meet the criteria. It is not based on actual content. There are 5 other subjects that students do to give them a broader Level 1 qualification. Science should not be watered down.	Option B is an improvement in giving more choices but it still does not help a student who is wanting to do all 3 Sciences in Level 2. It only meets some of the criteria. Other combinations like Bio and Chem or Bio and Phys or Phys and Earth Science could be offered as well. If this was used, a more definitive content list must be provided so that there is consistence between schools.	Option C is the best as there are still subjects available for both students who will continue with a Specialist Science or won't continue with it. More choices available for our more able students and students intending to continue in specialist Sciences. Since it is flexible in terms of choosing subjects it can fit with the vision of NCEA Level 1 being broader in Science for those who want it that way but still rigorous enough for those who want to continue with the subject in Yr 12 or Level 2.	2020-08-09 23:10:16	ANON-FDGN-6QN8-C	2020-06-28 03:13:39
Teacher	Option C	provides for the range of opportunities that schools provide.	Good to see NoS but it is not the only thing!!			2020-08-10 07:36:23	ANON-FDGN-6XXS-R	2020-08-10 07:36:23

Teacher	Option C	It is important to continue offering the single-science strand in Level 1. This will give us more flexibility with our programmes and allow us to cater to our more able students. We will also be able to develop programmes for groups of students that are geared to their interests rather than a one-size-fits-all approach. More specific standards and tasks will also take some make administration and moderation easier with less 'grey-area'.	Positives - More defined relationship with te ao Maori; Based on 'Big Ideas'; Will tie in nicely to our junior curriculum programme – e.g. NOS assessments; Assess externals when ready and not at the end of the year?; 50/50 credit split Negatives - Some of the possible activities seem too general and too simplistic – especially for more able students; Increase in teacher workload; Decrease in authenticity for all of these standards will be an issue - assessment unfit for purpose; How will these assessment modes flow into Level 2 and 3 specialised subjects?; May discourage people from entering and encourage people to leave the teaching profession; Will more schools opt not to offer Level 1 Science?; Decreased focus on a set of consistent Knowledge /Content when it is needed for expertise	Positives - More standards offered - more choice developing programmes; Merging subjects together can allow us to create links between them easier Negatives - What will the standards look like?; Increase in teacher workload; Decrease in authenticity for all of these standards will be an issue; How will these assessment modes flow into Level 2 and 3 specialised subjects?	Positives - More standards offered - more choice developing programmes; Fits with the model of 50/50 internal/external nicely; Keeps the single strand focus for schools who wish to maintain this; Allow us to cater to more able students; Offers flexibility in programmes we can offer across the cohort; Can be more inclusive for reasons stated above; Takes the grey-area out of teaching certain standards that are too broad and general; Depending on how the tasks are structured, this may not increase teacher workload; Will not affect authenticity of the tasks; Will enable us to cover of depth and breadth in Level 1	2020-08-10 08:24:04	ANON-FDGN-6QRT-C	2020-07-06 07:25:59

Teacher	Option C	This allows the students to learn some scientific content, due to the spiral learning nature of science, it provides the students with a much stronger conceptual knowledge and understanding to prepare them for further study at school and beyond.	This is by far the weakest of the options, having taught several international curricula in the past this would put New Zealand students at a huge disadvantage in terms of scientific understanding and knowledge. This does not even come close to meeting the 7 criteria set out. In particular I believe it reduces the credibility of NCEA as a qualification and will lead to many schools not offering Level 1 science due to its weakness.	This is better than option A, as it offers a broader scientific curriculum. It, however, limits the students' options and does not allow them to study as broad a subject range as option A as it forces the students to chose strands and does not allow them to explore all the sciences.	This is by far the best option. It allows some students to study a more general science course if that is the best for them, and also allows the more scientifically minded students to have a broad range of scientific strands to chose from. This is by far the best preparation for further study and does not weaken NCEA as a qualification from a science perspective like the other options. To ensure it is taught effectively there needs to be clarity and clear guidance of what needs to be covered in the various standards.	2020-08-10 08:33:40	ANON-FDGN-6XXD-9	2020-08-10 08:33:40

Teacher	Option C	Much more flexibility in offering course and means of assessment	From local meetings it appears the methods of assessment are putting up barriers rather than removing them. Essay answers for many students in Science is a major limitation.			2020-08-10 09:47:58	ANON-FDGN-6XXY-X	2020-08-10 09:47:58
Teacher	Option C	Seems to give more flexibility.	It appears vague and doesn't seem to allow for students to specialise by studying 2 science subjects at year 11. I generally agree with a broader curriculum but there are students where it is appropriate to allow them to specialise more early on.	Seems tricky to choose which strands to combine.	Gives the most flexibility. My department does not offer single sciences and will probably offer two courses again as now which are broad but Nationally I think there should be more flexibility. In terms of supporting schools I am particularly interested in how schools will be supported to authentically incorporate more Te Ao Māori. I fully support this but feel very ignorant in this area.	2020-08-10 10:39:22	ANON-FDGN-6XX2-Q	2020-08-10 10:39:22

Teacher	Option B	Really, I could live with either option B or C. The NOS -focussed Option A would turn students off science and ill-prepare them for senior Science subject specialties. Option B would be attractive to many students who want to participate in science - but not across all its facets.	Positives - it gives students a thorough grounding on the science process. Negatives - students (and teachers) would grow weary of the NOS focus - difficult to assess against the standards validly. It meets the criteria in the sense that it;s broader but the foundation is weak content-wise.	Positives - could be engaging for students who don't necessarily want to do , say, physics or biology but still want to pursue science. Negatives - only that it cuts students off from some aspects of science. I believe the combinations outlined would work reasonably well. There's an argument for putting any two disciplines together as they all overlap in some way. The demarkation suggested seems a sensible one to me.	Positives - really flexible. It may suit lower ability students better. Negatives - no major ones that I can see. I could live with this option.	2020-08-10 11:36:50	ANON-FDGN-6XX3-R	2020-08-10 11:36:50

Teacher	Option C	Gives greater flexibility around course design for the breadth of schools and students taking the course.	Difficult to comment on how it would lead on without seeing what the L2 courses look like.	Believe it could be forcing combinations together when there is no need to. Lots of careers have different pathways and this might suggest some of those combinations are not worthy or relevant.	Gives the flexibility as mentioned earlier. Allows internal and external courses to be developed with changes from year to year depending on staff and cohort. Lots of supporting resources, examples and interesting contexts that are relevant to students of this age group.	2020-08-10 12:21:51	ANON-FDGN-6XXT-S	2020-08-10 12:21:51
Teacher	Option C				Greatest flexibility	2020-08-10 14:10:22	ANON-FDGN-6XX4-S	2020-08-10 14:10:22
Teacher	Option C	More flexibility to offer students more actual Science instead of Social Studies.	Too many reports	Biology does NOT go with Earth and Space		2020-08-10 14:11:05	ANON-FDGN-6XXJ-F	2020-08-10 14:11:05
Teacher	Option C	Flexibility to offer learning opportunities both broad for students not continuing in Science and targeted for those who are.				2020-08-10 14:11:42	ANON-FDGN-6XX7-V	2020-08-10 14:11:42
Teacher	Option C					2020-08-10 14:11:20	ANON-FDGN-6XXQ-P	2020-08-10 14:11:20
Teacher	Option C					2020-08-10 14:12:40	ANON-FDGN-6XXG-C	2020-08-10 14:12:40

Teacher	Option C	More flexibility in assessment style. Option A (apart from the investigation) seems to be largely report based which is not the essence of science - it seems to be more social science based. Our students who wish to engage in social science will take those subjects.	Too much like social science, too many reports, lack of preparation for Level 2 (if I'm incorrect how would I know as the pathway for level 2 and 3 is not out yet!)	I do not think it is appropriate to link Earth and Space with Biology	This seems to give more option for flexibility to meet more student need.	2020-08-10 14:12:49	ANON-FDGN-6XXV-U	2020-08-10 14:12:49
Teacher	Option C	Provides greater options for course or courses design that could best meets our students differing needs.				2020-08-10 14:11:33	ANON-FDGN-6XX6-U	2020-08-10 14:11:33
Teacher	Option C	Students interesteed in Science will not find enough choice in B, and even less in A.				2020-08-10 15:17:33	ANON-FDGN-6XX9-X	2020-08-10 15:17:33

Teacher	Option B	I think option B gives a good balance. You are not overwhelmed with many different standards. For example, there are so many level 1 standards available now in the sciences, that students can study a lot of science but not enough of the core basics to move on to level 2. I assume that the chemistry, physics, biology and earth and space science standards cover core concepts in these fields and are not 'wish-washy'. If this is the case, several good programmes can be designed with a mix of nature of science and specialisation. Human biology is always very interesting to students, so hopefully at least one of the biology standards will relate to this.	Positive - the broad range gives great flexibility Negative - this very flexibility may become a thorn, depending on how the external moderators/examiners view the standards. Negative - difficult to design a course that suits the different requirements of students. Students will very quickly realise if the same standard is used in two different ways at the same school, with one way perceived to be more difficult that the other.	I would imagine that this option allows for teachers to mix and match standards, as long as they have two internals and two externals. So a course could mix physics with earth and space science with some nature of science if that is the interest of the student. I hope I am not wrong in assuming this, as this is why I am voting for option B. Please don't restrict the standards to 'MUST be 3 different subjects' and never shall they meet! By allowing this flexibility, I think it will cater for many pathways to support a wide range of students. e.g. a school could make a course with biology and some of the science standards (2	This is gives too many options so students may not get the broad foundation they need across all the sciences. However, I can understand why many teachers like this option.	2020-08-10 15:36:33	ANON-FDGN-6XXH-D	2020-08-10 15:36:33

Teacher	Option C	This option gives us flexibility to design courses that suit a diverse range of learners.	Negatives - no flexibility to design courses to suit our learners; very broad standards that were literacy heavy, so not ideal for ESOL and low literacy students; Assessing NoS can take away some of the natural learning that falls out of NoS activities. Positives - I like being able to assess NoS, but not a full course of it. I don't feel this does meet the idea of a broader qualification. We offer general Year 11 courses currently but take standards across the strands to meet the needs of our learners. Having only 4 NoS standards makes it harder to design different courses for different learners. If it is finalised there would need to be significant PD on how to design courses and how to assess the different levels of NoS as currently this is	I feel this option is unclear. Would we only be able to run the courses subjects (General, Physical, Natural? If this is the case again lack of flexibility. If we could mix and match then this option would be plausible. I think this option is meeting a broader foundational qualification. It also meets Criteria #3 (The extent to which the subject supports coherent and robust pathways into NCEA Level 2 and further study or training) as it allows a greater introduction to L2 Sciences for those students wishing to continue, but also has the NoS standards for a more general perhaps non-	Positives - greatest flexibility around designing of courses. Schools can offer general Science courses or subject specific, whatever suits their school community and students. I think this option is meeting a broader foundational qualification. It also meets Criteria #3 (The extent to which the subject supports coherent and robust pathways into NCEA Level 2 and further study or training) as it allows a greater introduction to L2 Sciences for those students wishing to continue, but also has the NoS standards for a more general perhaps non-continuing course. Also Criteria #7 as Sciences	2020-08-10 16:55:15	ANON-FDGN-6XXX-W	2020-08-10 16:55:15

Teacher	Option B	Option A is restrictive, allowing only one Science course. This course has a focus on NOS and does not have any content included in the assessments. Option B provides assessments opportunities from all areas of the Science curriculum allow for a range of courses catered to student needs. This may include courses that prepare students for higher level study, as well as providing 'general' citizen science. Both NOS and content are important for engagement with Science.	Option A does not address all areas of the Science curriculum. It restricts students; the assessment modes present do not provide a broad range of opportunities when all assessments are 'reports'. Content is an important part of science, it is important that students have a wide range of knowledge in a range of scientific fields. It is of note that as the New Zealand curriculum is so vague, that the achievement standards become a proxy science curriculum dictating what is both learned and assessed.	Option B provides a range of both content specific and NOS focused standards. This provides the ability to create and assess a wider range of scientific concepts. This allows flexibility in course creation; allowing schools to develop courses that suit a wider range of learners.	Option C is similar to the status quo. This provides a range of options for schools to create courses for science learning.	2020-08-10 16:57:47	ANON-FDGN-6XXE-A	2020-08-10 16:57:47

Teacher	Option C	We believe it is important to have options available for students so when it branches into L2 they have had exposure. We also believe learning fundamental concepts is necessary in a structured manner in order for them to progress smoothly into L2 science subjects. If we do not have this, it could make L2 harder to achieve.	Option A lacks the ability to teach robust science content that is necessary for progress into Level 2 and 3 and university. We do not feel like it meets criteria 3, 4 and 7. Major PD would be needed across the country.	As above. Doesn't meet individual students needs.	Separate strands allow for more robust science concepts. We feel this fits the seven criteria the best. PD would be required as to the new standards and what is needed in the teaching/learning process.	2020-08-10 17:01:02	ANON-FDGN-6XXB-7	2020-08-10 17:01:02
Teacher	Option C	We believe it is important to have options available for students so when it branches into L2 they have had exposure. We also believe learning fundamental concepts is necessary in a structured manner in order for them to progress smoothly into L2 science subjects. If we do not have this, it could make L2 harder to achieve.	Option A lacks the ability to teach robust science content that is necessary for progress into Level 2 and 3 and university. We do not feel like it meets criteria 3, 4 and 7. Major PD would be needed across the country.	As above. Doesn't meet individual students needs.	Separate strands allow for more robust science concepts. We feel this fits the seven criteria the best. PD would be required as to the new standards and what is needed in the teaching/learning process.	2020-08-10 17:01:48	ANON-FDGN-6XXZ-Y	2020-08-10 17:01:48

Teacher	Option C	We believe it is important to have options available for students so when it branches into L2 they have had exposure. We also believe learning fundamental concepts is necessary in a structured manner in order for them to progress smoothly into L2 science subjects. If we do not have this, it could make L2 harder to achieve.	Option A lacks the ability to teach robust science content that is necessary for progress into Level 2 and 3 and university. We do not feel like it meets criteria 3, 4 and 7. Major PD would be needed across the country.	As above. Doesn't meet individual students needs.	Separate strands allow for more robust science concepts. We feel this fits the seven criteria the best. PD would be required as to the new standards and what is needed in the teaching/learning process.	2020-08-10 17:02:13	ANON-FDGN-6XXK-G	2020-08-10 17:02:13
Teacher	Option C	There are lot more options to design courses that could cater to different students. As long as they do not look like carbon copies of present L1 standards we could have lots of scope for interesting courses. I like the NOS standards as it is more representative of the science curriculum.	Too narrow a scope and difficult to implement nationally. Many students would struggle to cope with L2 Sciences as they wouldn't have as much foundational knowledge that level 2 requires.	Not a bad compromise between Option A and C but I still think Option C has more flexibility and potential for adapting to future changes.	Biggest danger is that it will not be all that different from present standards. However, Option C matrix allows for a range of science capabilities (in NOS) and range of new topics to be assessed in each 'World'.	2020-08-10 17:50:01	ANON-FDGN-6XXF-B	2020-08-10 17:50:01

Teacher	Option C	While I like the idea of Option A as a Nature of Science-focused course, Option C gives the greatest flexibility for course design and could allow for different courses that cater to different students' and communities needs. The danger is that these could just end up as replicas of existing standards - it would be ideal to see a genuine revamp. Also there is a risk that schools may not choose the NoS standards in a course, and produce courses that look very similar to what already exists.	POSITIVES: I support a NoS focus and I like the intent of these standards. The challenge will be in making these standards accessible for students - especially lower ability students. NEGATIVES: Ensuring that sufficient coverage of senior subject - specific background content will be tricky in Option A (as will determining what specific content is required for success in the NoS standards). Of the 3 options, it probably meets the seven criteria the best, except for criteria 3 about pathways into L2 and beyond. For this approach to be successful, a significant amount of support (professional development, time) would need to go into helping schools with curriculum design so that coverage of all content strands/worlds within the NZC get adequate coverage.	POSITIVES: This allows for more subject/world-specific content to be credentialed - for students to gain credit for the content (the 'stuff') they know. The challenge will be in how you integrate the four 'worlds' into 2 subjects, and who makes those determinations. NEGATIVES: The NoS standards could be ignored in course design Earth and Space Science could be made to fit with any of the others, depending on the focus.	POSITIVES: This allows for the greatest flexibility ... but NEGATIVES: The NoS standards could be ignored in course design. Courses could end up looking much the same as they do now (boring!)	2020-08-10 17:53:07	ANON-FDGN-6XXA-6	2020-08-10 17:53:07

Teacher	Option B	I initially was in favour of Option A - a strong move towards NoS but obviously teaching NoS with content that we either already use or the opportunity to explore other content areas at Level 1. This however seems to have upset a lot of science teachers (if FB pages are anything to go by) and NZ teachers are not ready for such a big change. Option B may be an intermediate step towards the inclusion of NoS which the current standards do not address beyond tokenism. IT also gives opportunities to schools that are able to offer more than one science programme (this is a big limitation for Option A). Not sure whether this prevents the possibility to ignore the NoS standards and simply just have content focussed courses. Option C is just what we have currently - a	have covered pluses and minuses above. Biggest concern here is a change for many schools from multiple science courses to a single science course. We offer a Bio/chem option at Level 1, which means we retain kids for L2. Concerned that a single science course at L1 may reduce numbers sticking with science (low decile school where keeping kids in Science is a challenge) It most definitely meets the vision of NCEA level 1. If this is the option selected there would need to be a huge amount of PLD as this is very different to current Science teaching and assessments. A lot of people ahve not understood this option due to limited material being available.	provides opportunity/flexibility to develop multiple courses. Subjects Expert Groups need to focus on ensuring understanding of NoS standards and how to implement (exemplars) these standards by teachers. There is huge potential in these standards which many teachers do not see. The negative is that people will just stick to the 8 content standards - that's two science courses worth and ignore the NoS standards - Give us PLD on the these standards and show us why they need to be part of the matrix.	This is status quo and would be the worst possible outcome	2020-08-10 19:16:28	ANON-FDGN-6XXC-8	2020-08-10 19:16:28

Teacher	Option C	Selection of options to cater to student needs and demands. Allows for more variability.	Different schools and teachers are left to interpret standards. As the demands of students vary, it may not leave enough room and flexibility required to teach the students in front of you.			2020-08-10 20:35:28	ANON-FDGN-6XXU-T	2020-08-10 10:04:03
Teacher	Option C	Most flexible .options for schools to offer Allows introduction to specialist sciences within general science course Can be tailored to suit staff available at an institution				2020-08-10 21:05:09	ANON-FDGN-6XXW-V	2020-08-10 21:05:09
Parent	Option C	The other two pose significant risks to my sons progress in science to higher professional levels	Absolutely ridiculous. Far too brad with no NZ wide curriculum base the students will be under-prepared for professional studies at L2 and above	Silly-still not a wide enough choice.	Best of the bunch. Gives the non academic school students a choice but also those students who want can get prepared best for L2 and beyond.	2020-07-01 15:11:30	ANON-FDGN-6QF9-5	2020-07-01 15:11:30

Parent	Option A	Consistent with other subjects Y11 is a general year still. Schools will make students do more staandards to make the school look better - If students don't achieve a standard, the school will want them to do another and another - rather than focus on teaching better				2020-07-02 12:54:03	ANON-FDGN-6Q6F-2	2020-07-02 12:54:03
Parent	Option C	it has a good balance of different subject and I want my child to be exposed to different Science subjects in preparation for NCEA level 2				2020-07-03 12:53:06	ANON-FDGN-6Q9B-1	2020-07-03 12:53:06
Parent	Option C	Science is a broad educational sector. There should be specialization as a secondary educational institution				2020-07-03 13:39:40	ANON-FDGN-6Q9K-A	2020-07-03 13:39:40
Parent	Option C	I would like my daughter to experience a range of science or have the option to do different courses.	Not enough coverage of science. This has too much jargon for me to really understand.	WOuld be ok but I feel being able to cover earth science is important.	Positives more choice, negative is I guess its more work.	2020-07-18 10:50:14	ANON-FDGN-6QZ8-R	2020-07-18 10:50:14

Parent	Option C	I want my children to have greater knowledge in the area that they choose to study. I have spent many years explaining my expectations to take all sciences and math for as long as they can.	It has no break down for what the learning is and limits the students understanding in each area if they choose to move forward with a passion. General teachers teaching general	This option still does not contain enough time to cover the content in the subject areas. I would prefer to have speciality trained teachers to extend and encourage students passion.	This option is the only way I can see that each area within science gets the time it will need to cover the content. This way students get expert teachers in the subject area that can answer questions and extend them and encourage their passion.	2020-07-19 11:47:39	ANON-FDGN-6QJQ-1	2020-07-19 11:47:39

Parent	Option C	I believe Option C provides the most flexibility for schools to develop programmes for a diverse range of learners. As a father with two daughters that will be impacted by this change I want as much flexibility as possible built into NCEA Level One, both to allow schools to design effective programmes for a range of learners, and to allow schools and students to co-design programmes that will be engaging for students and have relevance to their future studies and pathways.	The scope is far too narrow to allow schools to develop engaging programmes that will cater for all learners. This option is untenable in my opinion.	This option is better that Option A, but the scope is still too narrow. Also, most schools that I know of only offer 3 to 4 hours of science a week in Year 11, and it seems like Option B is asking the students to specialise too soon in their education. If schools were mandated to provide 6 to 8 hours of Science per week this option would be workable, but that solution won't work.	This seems like the best option to me - it provides a very wide range of opportunities for schools and their communities to construct a broad science programme for a wide range of learners and contexts. One negative of all 3 options is the 50/50 split of internal vs external assessment - some lower ability students will struggle with the 50% external component under these guidelines, and it feels unfair to me to discriminate against this already marginalised group.	2020-07-21 11:37:10	ANON-FDGN-6Q1Q-8	2020-07-21 11:37:10

Parent	Option C	The other options are watered-down, cater for the lowest common denominator and therefore drag everyone down, not lift the strugglers up. Keep NZ standardised, not an outlier.	How can this be seriously proposed? It would make NZ a laughing stock in the OECD.	Physics and Chemistry are fundamentally different subjects. I know this intimately. Like all science, there are common concepts, but young persons' brains are not yet developed enough to handle the delineation within a single subject- it will cause confusion on top of already confusing subjects.	This is tried and true. It is also internationally standardised.	2020-07-27 19:47:19	ANON-FDGN-6Q4P-A	2020-07-27 19:47:19
Parent	Option B	Still offers a choice of elected but not too much choice when still early in the NCEA journey.				2020-07-27 21:10:01	ANON-FDGN-6Q4D-X	2020-07-27 21:10:01

Parent	Option C	This option allows schools to teach the general Nature of Science subject but also allows teaching of more specialised science subjects that will be needed by pupils who go on to study science in later years at school or at tertiary level. Science level 1 courses could be tailored to suit the needs of more and less able students.				2020-08-03 14:18:05	ANON-FDGN-6Q4R-C	2020-08-03 14:18:05
Parent	Option C	I think it is important to offer flexibility based on individual children's needs. For children looking to a professional career in a field needing specialist science knowledge, it is important to offer specialist subjects that offer a greater depth than possible in a single general course. But not all children need this, and so offering a general science course for these children is also worthwhile.	Negatives: the lack of specialist science subjects do not give children an early enough start at building a broad but deep understanding of science	Positives: Better than option A Negatives: Not as good as option C	Positives: Best of the the three options	2020-08-03 15:55:10	ANON-FDGN-6QGP-W	2020-08-03 15:55:10

Parent	Option C	Option C allows the flexibility to design different courses that suit the needs of all students, whatever their future pathways.	I do not consider that this option will adequately prepare students for the Level 2 and 3 sciences. With the assessment totally focussed on NOS the incentives to thoroughly learn the basics of the separate sciences, and the skills needed to do this, will be lost.	I do not believe this meets the seven criteria.	This approach would allow schools to create courses that suit those aiming for science related careers as well as those that need the NOS skills all citizens should have. This approach recognises both the importance of science and the need to cover a significant amount of content in order to adequately prepare for careers in science.	2020-08-03 16:05:04	ANON-FDGN-6QGN-U	2020-08-03 16:05:04
Parent	Option C	Prefer to have options of a good general science course that everyone should get basics from and subject specific courses to allow more learning in depth and prepare for higher learning in physics, chemistry, biology, geography and astronomy.	Not confident that this will give enough grounding for students who are going on to specialise in scientific subjects.	This looks a better compromise - although still prefer more specific subjects. Perhaps Chemistry with Biology, and Physics with Space Science does seem a better fit...	Introducing a new general science course as part of mix will be able to assess how many students can progress on to more specific scientific subjects.	2020-08-03 16:08:10	ANON-FDGN-6QGS-Z	2020-08-03 16:08:10

Parent	Option C	Wider range of study and experience	Covers the curriculum and equal across the four strands	A deeper experience with more specialised subjects	Optimal experience for my son to experience which will give a better insight into further study or career options	2020-08-03 16:18:48	ANON-FDGN-6QGD-H	2020-08-03 16:18:48
Parent	Option C	Most comprehensive science offering in a world where science and technology are key to our success as a nation and species.				2020-08-03 18:46:13	ANON-FDGN-6QG2-Y	2020-08-03 18:46:13
Parent	Option C	Can never have too much science.				2020-08-03 19:02:10	ANON-FDGN-6QG3-Z	2020-08-03 19:02:10
Parent	Option C	I think more options and opportunities for a deeper understanding of science is important in the modern world.	To general	Still doesn't give opportunities for breath and depth of understanding	Best option	2020-08-03 19:18:10	ANON-FDGN-6QGT-1	2020-08-03 19:18:10

Parent	Option C	Prefer Option C Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually arranged around mathematics, physics, chemistry, biology and perhaps general science. The second is the citizen-focused need for all children as they mature to have a clear understanding of the complex world of science that they will confront as citizens over the next 60 years of their lives. It is important for schools to have choice -	Positives: ● Strong emphasis on NOS and relevance of science to the ākonga ● Strong emphasis on mātauranga Māori Negatives ● The main problem with Option A is the risk. It amounts to a giant educational experiment on the tamariki of NZ with no supporting evidence given as to the benefits. Philosophically we agree that teaching with a NOS perspective addresses many of the objectives of the curriculum and a modern science based society. However, to offer this as the only course for all New Zealanders is a huge risk, especially as NOS is the only thing being assessed. The impact of high-stakes assessment on students is considerable, and although the aims of the course may be laudable, the effect of the assessments can be detrimental. Has the	Ppositives ● A compromise between Options A and C Negatives ● As with many compromises it will probably satisfy neitheR	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount	2020-08-03 20:47:14	ANON-FDGN-6QG4-1	2020-08-03 20:47:14

Parent	Option C	It allows students to study more intensively in the individual strands. A failure, or lack of interest in one strand of the sciences, does not become an impediment to continuing within the students chosen field.	It strikes me as as a very generic bland subject of "science". This fails to recognize the depth that is truly represented by the strands that make up the sciences of physics, biology and chemistry. Science is not science, it is the sciences for a reason. Each of the the stands is its own field and while the strands overlap and draw on one another they are broad deep oceans of learning in their own right. Please do not dumb down the sciences by taking away depth.	This is a nothing choice.	Science is not one subject. It is an overarching statement covering physics, biology and chemistry. There is strength in detail. By keeping to the multiple strands students can do well in parts and still progress within the sciences in their chosen field. In my case I had little interesting biology and did very poorly in it. Physics and chemistry on the other hand I enjoyed and pursued further.	2020-08-03 21:52:30	ANON-FDGN-6QGQ-X	2020-08-03 21:52:30

Parent	Option C	I value science and education highly and believe the balance offered in C and allowing schools flexibility will reap huge benefits in the future compared to the other options. Remote learning will also allow smaller schools offer a greater range than the other options promote.				2020-08-04 10:31:28	ANON-FDGN-6QG6-3	2020-08-04 10:31:28
Parent	Option C	Allows students to choose specific science areas they would like to study.				2020-08-04 11:46:48	ANON-FDGN-6QG9-6	2020-08-04 11:46:48

Parent	Option C	It give the biggest range for my son to study - he can gain the science content he needs and prepare himself for future study. All the others sound so vague and ridiculous that no one will have any idea what they are doing...or more importantly, what they know!	This is too broad "pie in the sky" thinking. There is no way my 15 year old son is capable of this level of thought. He will basically be giving you wikipedia answers - utter rubbish.	Why limit to 2 subjects? why combine? is that asking him to choose too early? is he going to have to chose all 4 because he wants to do Phy, Bio and Chem in yr 12 and 13? This is also going to create a mix of schools that have not covered certain content. I want my son to go to university...he can specialise there!	This gives the current selection of standards - my older son gained these and is not successfully performing at higher levels. If you want to introduce a more diverse "local context" type learning...then surely more choice in standard is better that a waffley, "covers all bases", "lets all hold hands and be happy" type of science. These are teenagers, they do not know enough to be making these choices...the current system allows them to perform academically (if they want) and also non-academically through internal standards....why are we changing	2020-08-04 12:33:33	ANON-FDGN-6QGK-R	2020-08-04 12:26:49

Parent	Option B	Option B has the breadth and depth suited to NCEA Level 1, in terms of the numbers of specialist teachers required, coverage of the necessary subject matter to set up for NCEA Level 2, and perhaps less complex timetabling than option C allowing a variety of other subjects to also be taken. Option C's further depth and specialization seems to better suit NCEA level 2 and later.	Can't see any positives to Option A, looks like a pre-NCEA course better suited year 9 or year 10 students. Negatives are that it's not broad or deep enough for Level 1. Level 1 needs to provide good foundations for future study, and Option A does not cover enough ground deeply enough. I do not believe it meets all of the 7 criteria, especially with respect to the credibility of NCEA. To teach Option A science, expert teachers are required in all subject matter areas, and scheduling those teachers around the broader learning scope is required: each class cycles through different teachers (unless a single expert in all subject matter can be found). Option A doesn't remove the need for specialized subject matter experts in favour of more generalists in my opinion.	Positives are a broader and deeper learning experience for students, without so much specialization that it dominates the education experience at Level 1. I can't see any negatives to this approach. I believe it better meets the seven criteria than Option A. Of course, to ensure all schools are able to teach this approach effectively enough specialized subject matter teachers must be available. I think Physics and Earth and Space will fit better together than Physics and Chemistry.	The positives are a very comprehensive and in-depth curriculum (as I said before though, this may be overkill for Level 1). Another significant positive is that students get to pick exactly what they are interested in without being forced to sit through a combination of say Biology/Chemistry where Chemistry may not interest them. The negatives are few for this approach other than possibly 'squeezing out' other subjects as options at this relatively early stage in the student's education. It does meet the seven criteria well although I think it contains a bit much specialization. In order to teach this	2020-08-05 11:34:53	ANON-FDGN-6Q32-B	2020-08-05 11:34:53
Parent	Option C					2020-08-05 15:40:50	ANON-FDGN-6Q39-J	2020-08-05 15:40:50
Parent	Option C	Plenty of choice	too broad	Better	Plenty of good science and variety	2020-08-07 14:12:22	ANON-FDGN-6QEK-P	2020-08-07 14:12:22

Parent	Option C	It has the most actual science. If my children want to be in the sciences you re not giving them enough grounding with the other options. You are also closing off their later options in the arts by forcing them into 3 years of science when they can currently drop Physics at level 2 and take up music or drama at level 3 which is better for their overall learning and development.	No! I want specialist teaching for my children from year 11. Or is this a response to not having enough Physics teachers??	Again what is wrong with specialist subject knowledge? How are my children learning more with this model?	See my comments above	2020-08-08 10:26:06	ANON-FDGN-6QEC-E	2020-08-08 10:26:06
Parent	Option C	Offers schools and students the flexibility and choice about how much science they would like to learn	My son loves science and would like to learn more science in Year 10 and 11 than is offered at his school. He is limited in the science he can learn at school and is learning extra at home in his own time. There should be extra science on offer for those who want it	Biology and Chemistry and Phsyics with Earth Science could work. My son wants to learn Physics and Chemistry and is not interested in biology. Offering these all together could put of students who would like to learn 1 area at a time.	Best option as there are flexible extensions available for those who want it.	2020-08-09 16:18:56	ANON-FDGN-6QWK-8	2020-08-09 16:18:56

Parent	Option C	Broader subject matter covered & enables greater engagement from the students due to the variety of categories and an opportunity to delve deeper as well as pursue careers in such subjects.				2020-08-10 22:11:50	ANON-FDGN-6XXM-J	2020-08-10 22:10:12
Parent ; Industry sector representative	Option B	A balance between the need to fit a range of subjects, including languages, into a young person's curriculum against the importance of STEM in many educational pathways. Reducing science to a single 'nature of science' risks disengaging keen students. Allows for extension for more capable students.	+ leaves room for other subjects which are vital for rounded education - does little to engage scientifically interested 15 year olds so do not believe it supports criteria 3 or 4 - strongly opposed by very good science teachers	- some overlap inevitable + it allows those showing bias to science careers a deeper dive into the subjects without crowding out languages and interest subjects Example subject mix presented is reasonable	- too specialised for NCEA level 1 + Additional resources for schools to teach effectively (which they need to do anyway for NCEA L2+) + more coverage of areas of interest	2020-07-29 15:52:27	ANON-FDGN-6Q46-G	2020-07-29 15:51:20
Parent ; Tertiary education representative	Option C					2020-07-27 19:52:13	ANON-FDGN-6Q4N-8	2020-07-27 19:52:13
Parent ; Tertiary education representative	Option C	Science is critical to our economy. Combining subjects leads to confused students.				2020-07-28 09:33:24	ANON-FDGN-6Q4U-F	2020-07-28 09:33:24

Parent ; Teacher	Option C	Broadest range enabling flexibility, best pathways moving forward, allows depth of learning as well as breadth.	Light weight, limited academic value. If this goes through I would advocate dropping Level 1 and doing our own fit for purpose assessment.			2020-07-02 16:47:16	ANON-FDGN-6QVE-1	2020-07-02 16:47:16
Parent ; Teacher	Option C	When you teach a year group, you try to keep as many options open as possible. You try to keep the course as student centered as possible. With more standards available you can meet more learner needs. Some students would rather do the external work, some would rather do the internal. By allowing general science and then four specialised areas you are more likely to find a standard that engages your learners. Only offering a limited choice of standards would not allow us to support our learners who would rather do an internally assessed course. It is inequitable. Some students do better in exams and some do better in internals. Each student needs to be offered the assessment method that best suits them.	Positives - everyone has to the same thing Negatives - everyone has to do the same thing. Students are not all the same. Expecting them all to fit into a small box and all complete the same science course is unfair. Some students only do science at year 11 because they "have to". Forcing these students to then complete two externals would be a nightmare. Again it is inequitable and does not allow us as educators to best meet the needs of our learners. Only offering four standards does not make the course broader. I understand the NoS ideas and we have been working towards those with our juniors. However, some students are ready to be more detailed. others are happy to keep it more general. Why should we disadvantage the child who knows what they want and drag them through a	This is a better option. Choice is always a good thing. However, schools should be able to link the learning to their local curriculum and not be tied down to having subjects pre grouped. Teachers need to keep their autonomy and be able to make their own courses up to suit the individual and unique needs of their learners.	Positives - courses can be suited to the local curriculum and the needs of the learners. This option keeps the "broad" vision and it encompasses many options in science and will allow greater course choice. This then allows students to explore the different science options so they can make an informed decision around specialising. If the internal assessment marking is taken over by NZQA then the ministry must ensure we are all on the same page as to what level the work is being taught at and is expected to be at.	2020-07-03 12:23:21	ANON-FDGN-6Q9V-N	2020-07-03 12:23:21

Parent ; Teacher	Option C	This selection allows for greater choice base on a student's pathway and better preparation for individual senior natural sciences at level Two and Three. It also addresses the fundamental content that students will need to be familiar with, and have a basic understanding of prior to initiating research involved in the nature of science standards.	What content these Nature of Science Standards actually contain and how the students are to be taught or how they will research or gather this content seems very vague. How the standards will be assessed both Internally and externally also are not clear. Who is responsible for marking the Internal and External Standards are also unclear. Ensuring the integrity of students' work is also a significant hurdle with portfolio and/or research Standards.	Better than option A as more choice allowed for students, however can't see how Biological and Earth and Space Science Standards are compatible with each other. Possibly a Biology and Chemistry course may be a better combination. Physics can stand on its own to bridge the wide gap between Level One and Two with regard to content and depth. Students will have to opt out of Natural Science option if they are not inclined to either Biology or Earth and Space Science. This option is presently available to students	This selection allows for greater choice base on a student's pathway and better preparation for individual senior natural sciences at level Two and Three. It also addresses the fundamental content that students will need to be familiar with, and have a basic understanding of prior to initiating research involved in the nature of science standards.	2020-07-09 13:54:04	ANON-FDGN-6QA8-Y	2020-07-01 05:40:27

Parent ; Teacher	Option B	I believe Option B offers flexibility to be able to design Level 1 science courses for different student groups depending on their interests and career goals (criteria 4). Option A is too general while Option C has too many options and suggests early specialisation.	Positives - All students across NZ do the same standards (if they do Level 1) which makes a more equal playing field. Less standards means that teachers across the country can share resources and facilitate more consistency between schools. Focus on science skills and competencies matches up with criteria 1 - a broader, foundational Level 1. Option 1 could more easily be made to align with criteria 6 (obligations under Te Tiriti o Waitangi) as the Nature of Science strand takes a more holistic view of science and how the different branches interact. Negatives - doesn't prepare students consistently for specialist subjects in Level 2 and 3 as there could be gaps in their knowledge base ie. doesn't meet criteria 3 for a robust pathway into Level 2 and further study. If this approach is	Positives - more flexibility than Option A. Able to provide more robust pathways into Level 2 and further study (criteria 3). Negatives - separation of chemistry from biology is a bit random, but could be addressed in the Nature of Science contexts. I think it makes sense for the physical sciences to be put together (physics and chemistry), bio and ESS = ecological approach) If this approach is finalised, the Ministry and Subject Expert Groups could provide well-tested assessment tasks that schools could use. Also, provide easily accessible professional development for all science teachers on	Positives - similar to what we have now so less work in changing/creating new standards (criteria 5 - sectors ability to deliver the subject). More flexibility to design courses to meet individual needs (criteria 4). Supports robust pathways into Level 2 and beyond (criteria 3). Negatives - doesn't support criteria 1 to develop a broad, foundational NCEA Level 1 as there are lots of specialist standards. This option, in particular, is defined by a Western view of science - with 4 branches that don't overlap so does not support criteria 6 - obligations under Te Tiriti o Waitangi - as a Māori worldview takes a more holistic view of the world -	2020-07-13 12:32:57	ANON-FDGN-6QZD-4	2020-07-13 12:32:57

Parent ; Teacher	Option C	The Nature of science is very important. Gaining an understanding of the nature of science is one of the goals of any good science teaching programme. I also believe that we should assess the students to see how successfully this goal has been achieved. But an understanding of the nature of science is acquired gradually through the study of different areas of science. So we definitely need to teach content in different areas. Content is very important. How effectively the students are learning that content should be assessed too. Since NCEA began, teachers all over the country have seen the achievement standards as a guide to "what to teach". Some teachers have taken this further and only teach the students how to pass assessments. We need to design any new	This option is idealistic and completely ignores reality.	This is better than option A, but also ignores reality. Physics, Chemistry, Biology and Earth and Space Science are different subjects. This whole review seems to be an attempt to fix something that is not broken. Have similar changes been made in another education system? For what reason? Were these changes successful? No. I didn't think so.	The Nature of science is very important. Gaining an understanding of the nature of science is one of the goals of any good science teaching programme. I also believe that we should assess the students to see how successfully this goal has been achieved. But an understanding of the nature of science is acquired gradually through the study of different areas of science. So we definitely need to teach content in different areas. Content is very important. How effectively the students are learning that content should be assessed too. Since NCEA began, teachers all over the country have seen the	2020-07-15 13:09:31	ANON-FDGN-6QQ5-C	2020-06-28 16:21:29

Parent ; Teacher	Option C	Option C offers more diversity and choice in the standards assessed. This survey is asking about numbers/types of "standards" offered making it is challenging to make a well considered recommendation. Without a clear indication of the specific knowledge that would be assessed in the standards, it is difficult to know exactly what a well balanced L1 Science course would look like. For this reason, I have chosen option C. I am concerned that L1 science is being considered first without a clear pathway to L2 and L3 specialist subjects or a clear indication of what is considered 'essential knowledge of science' for all students. I am concerned that this will increase inequity for students.	1. Positive- all students will be required to 'sit' the same standards. 2. Negative- However this is undone by having no specific curriculum knowledge attached to the standards and making them essentially skills based with a scientific context. I don't see how it prevents overlap if there are no specific links to knowledge of content. 3,4,5,6,7. Negative- Students may leave science with significant gaps in basic knowledge or inadequate preparation for specialist subjects. No guarantee that all schools will offer a full Science course that benefits students.	1. Positive- picking and choosing standards could lead to a balanced course but also could will lead to gaps in foundation for students without better guidelines- what is to be assessed "knowledge". 2. Negative- By having no specific curriculum knowledge attached to the standards. I don't see how it prevents overlap if there are no specific links to knowledge of content. Why not have knowledge that "must be assessed" and then a variety of assessment modes that allow contextual application and NOS application?? Rather than this way around? 3,4,5,6,7. Negative- Students may leave science with	1. Positive :Include a "standard of knowledge" that students must be assessed against overall. So that all students are required to have the same basic Science background. Maybe clearly include these in the Nature of Science standards. If this was included then 'A broader foundation NCEA Level 1 would be offered to all students.' 2. 3,4,5,6,7- Positive: Have a good range of standards that also allow further knowledge in specific areas so the students can follow a path suited to them. By making clear the curriculum knowledge being assessed in each standard offered it will be clear that	2020-07-15 14:35:14	ANON-FDGN-6QZE-5	2020-07-15 14:35:14

Parent ; Teacher	Option A	It is the most flexible, allowing the design of content to suit student needs. But understadning the aversion to change, Option C is my second choice as it applies some familiar strcutures.	Positives: Flexibility for context and content to suit student needs, to build in local knowledge and incorporate community into unique course structures. This is assuming broad contexts are set by Ministry and Subject Expert Groups. It would be the way to go for developing STEAM type projects and supports more creativity in learning. Negatives: without knowing what is planned to change at levels 2 and 3 it is very difficult to say these changes will link in satisafactorily to the later NCEA levels. How will moderation and marking work with carte blanche on what is done? This impacts on qualification credibility. The workload for educators, setting up basically from scratch, will be enormous. Ministry and Subject Expert Groups must make sure there are	This is an indecisive option. It doesn't make the big change we need. It is more directive as it has similarities to what we currently do so is "safer" for those fearing change.	This option looks more like what we currently do which in some ways may restrict creatvity in course design, but could be a safer setp than option A as it sets up structures that look familiar in the subject strands. It possibly provides more guidance for course design and still allows a single strand focus, by having more subject strand based standards. But it is restrictive in that it is not removing subject silos and integrating different strands into a standard as in Option A. And I would have thought this blurring of lines between subject strands would be a more holistic and real life (and 21st century approach to Science)?	2020-07-16 13:46:16	ANON-FDGN-6QZK-B	2020-07-16 13:35:47
Parent ; Teacher	Option C	It is the only option that provides the opportunity for students to learn about all aspects of science.	Very vague, very general, not enough detail	Not enough options to cover all science topics	Best option for covering all Science subjects	2020-07-20 13:13:46	ANON-FDGN-6QJK-U	2020-07-20 13:13:46

Parent ; Teacher	Option C	This options allow students to cover enough content to give them a sufficient background to enter a range of career options. This is critical at this age to allow students to determine which aspect of science they wish to pursue.	This option would see a wider range of content taught but would leave a larger number of students with larger holes or gapes in their understanding of science, as other critical content may well be misses eg respiration or rates of reactions may be missed if course focused on another aspect.		This option is critical at this age to allow students to experience a wider range of content in the fields of science, from which they can determine what aspect of science they wish to pursue.	2020-07-20 13:20:54	ANON-FDGN-6QJ5-5	2020-07-20 13:20:54
Parent ; Teacher	Option C	provides options from all different parts of science. Could be content rich. More prepared for a life in science, by learning the basics of chem, pysics and Bio. I feel like the contexual nature of science options leaves too much to the individual teacher discretion and students may end up with gaps in their basic knowledge of science	How can we be sure that this is a uniform qualification to gain across NZ? Some students may come out knowing very little science that can prepare them for level 2. Nature of science is valuable, but more suited to year 7, 8, 9 surely around level 1 we need to start preparing them for specialisation Does not support coherent and robust pathways into NCEA level 2	what rules are there around choosing? Is there anything to stop a teacher choosing just all physics standards? As in option A, there is potential for gaps in student knowledge in preparation for level 2 Does not support coherent and robust pathways into NCEA level 2	A merging of both A and B. Better than the other 2. More Similar to current.	2020-07-20 13:26:21	ANON-FDGN-6QJC-K	2020-07-20 13:26:21

Parent ; Teacher	Option C	Because of demands from tertiary on Level 3, flood down to Level 2, then to Level 1. Still need the 'key 3' Sciences available.	1.Positive = allows limited alternative courses to be developed Negative = restricts the path of academic students and puts huge pressure on teachers during a time of global upheaval and potential economic downturn 2.No. Those are quite broad criterion. 3.Instead of expecting all individual teachers and schools to uniquely develop standards themselves ('reinventing the wheel'), enable (fund, give time), for professional subject associations to provide developed and moderated (or likely to meet moderation) standards.	1.Positive = allows alternative courses to be developed Negative = restricts the path of academic students and puts pressure on teachers at a time of huge global upheaval and economic uncertainty. 2.No. Those are quite broad criterion. 3.Instead of expecting all individual teachers and schools to uniquely develop standards themselves ('reinventing the wheel'), enable (fund, give time), for professional subject associations to provide developed and moderated (or likely to meet moderation) standards.	1.Positive = allows alternative courses to be developed whilst also allowing realistic solutions maintaining the option to ensure students will be able to meet the requirements of tertiary education entry (university) from Level 3. Negative = seems very similar to what is already available? And puts huge pressure on teachers during a time of huge global upheaval and economic downturn. 2.Yes. Those are quite broad criterion. 3.Instead of expecting all individual teachers and schools to uniquely develop standards themselves ('reinventing the wheel'), enable (fund, give time), for professional	2020-08-04 12:14:17	ANON-FDGN-6QGE-J	2020-08-04 12:14:17

Parent ; Teacher	Option C	It gives the greatest range of options.	This is too narrow as an option - does not allow for specialising for those who want to.	This is a compromise between Option A and Option C - better than Option A but not as good as Option C.	This allows for a general science qualification or specialising if prefered. To teach the NoS strand, schools and teachers will need significant new support and resources to effectively teach and deliver this new strand.	2020-08-05 11:00:41	ANON-FDGN-6Q3U-E	2020-08-05 11:00:41
Parent ; Teacher	Option C	Because option C offers a wide range of diverse and interesting topics to choose from. The 50/50 internal external is appealing as this caters to a broad range of students.	Too limited			2020-08-07 06:09:17	ANON-FDGN-6QEH-K	2020-08-07 06:09:17
Parent ; Teacher	Option C					2020-08-09 21:40:05	ANON-FDGN-6XXP-N	2020-08-09 21:40:05

Student	Option C	Because there is real science, not just generic Nature of Science learning. Additionally, it contains the highest number of standards which allows for greater success of students.	No positives, seems very 'wishy-washy'. Overall, one might say it is rather rubbish.	As above, however these responses may be viewed independently of responses by the same submitting, thus I shall restate what is rewritten above. This is, again, rather rubbish, less so than Option A. Its like winning a race against someone with no legs. Option B, although it did beat the no-legger, should not be proud, and should hinge on self-shame.	The best of a bad bunch, but that's not saying much. The old adage, 'If it ain't broke, don't fix it' comes to mind. Though Option C is preferable to Option B, which is preferable to Option A, the current program is better than all of these. In this post-Covid-19 world, this is trash. We must seek higher things than this slop, slag, some may even say tripe. Altiora Peto, Hic Nill	2020-07-02 11:59:25	ANON-FDGN-6Q67-K	2020-07-02 11:57:43

Student	Option C	My teacher has been extremely vocal in his disapproval for the alterations proposed to Science in Level 1. Option A is the choice of a simpleton who wants students to pass NCEA with no understanding of anything even related to science. It's a disgrace and you should be ashamed for even presenting it as an option! Shame on you! Option C is the superior choice due to the many standards for each different subject. The goal of NCEA at Level 1 should be to prepare students for further levels at NCEA and provide a basic understanding for students who will not continue taking science. Option C provides more options for schools and students regarding their education and therefore is the lesser of the three evils you have offered.	There are so many negatives to this option that I couldn't list them all if I tried. The most obvious flaw to Option A is its lack of preparation for students continuing Science at Level 2 and 3. Although it serves as a foundation, it fails to educate students to a sufficient level meaning the jump from Level 1 to 2 will only increase. Return to the drawing board on this one! Here's a quote to encourage you despite your failure to present a good option. "Failure isn't fatal, but failure to change might be" - John Wooden	This option is much improved when compared to Option A. It provides a foundation for students and a is sufficiently broad. However, more specific options for school selection would make it easier for schools to customise their subjects and create a better learning environment for students. Getting better!	Option C provides many more options and is, therefore, the best option of the three provided. I maintain my initial judgement on the bias present in the selection process and would like to direct you to an ancient proverb, "Honest scales and full measure hurt no one." I would like to think that you understand the meaning of this proverb; however, that would be expecting too much if the selected options are much to go off. Judging options and making decisions fairly has no negative effect on you. Everyone would much rather you take longer to achieve a satisfactory result than rush and produce whatever these options are.	2020-07-02 19:44:31	ANON-FDGN-6QVF-2	2020-07-02 19:44:31

Student	Option C	This gives student a diversity of options which would prepare them for specialist careers which develop only a singular topic such as chemistry	Positives: Allows students to test what subjects they wish to choose in year 12 Negatives: Limits the options students will have as if they are unsure of what they want to choose, general science is still an option In order to teach science effectively experience and knowledge is required, at my school there are teachers are highly incapable due to the fact that they don't interact with the students even though they have the knowledge	Positives: Gives other options, if students are unsure about physics or chemistry, gives them options Negatives: if you are going to give students options, it is pointless forcing classes which intertwine different topics as that is the point in general science topics for students who are unsure. Students could be unsure about chemistry and biology but those are under different topic	Positives: gives the widest diversity of topics ensuring students can specialise in the subject required for their career. Teachers only need to learn 1 subject relatives to multiple. Negatives: Although there could be more physics teachers than biology teachers, physics is a more in demand topic	2020-07-04 08:51:38	ANON-FDGN-6QRP-8	2020-07-04 08:51:38

Student	Option C	Gives all options but more choice for schools that want to extend students, while still allowing the options in A and B	Very negative, general content about the nature of science would not be engaging at all for any student Science in year 11 would not be able to be taught effectively under this proposal	More choice than A positive Could be a better option than C as it means there are not neglected standards with low uptake as is the case for level 1 currently. Biology and chemistry would fit better together. It would result in more exposure to all sciences otherwise many students would take the option with only physics and chemistry. A 'biochemistry' course would fit well, as would a 'physical and earth sciences' course	Too much choice could lead to neglected standards meaning some schools better prepare students for level 2 than others Good range of choices however which means schools can choose what is best to engage their students.	2020-07-05 17:23:27	ANON-FDGN-6QR2-A	2020-07-05 17:23:27
Student	Option B	I feel it will help those who choose to endeavour within a particular science (e.g. physics) and will further allow them the opportunity to get a better “taste” of such science				2020-07-07 17:17:27	ANON-FDGN-6QRH-Z	2020-07-07 17:17:27

Student	Option B					2020-07-07 17:19:10	ANON-FDGN-6QRX-G	2020-07-07 17:19:10
Student	Option C	I'd like more options earlier on in science, as I have always been interested in biology but have never gotten I chance to dive into it in a classroom, but I also want my siblings and fellow students to have lots of options to choose from.				2020-07-08 21:03:44	ANON-FDGN-6QRA-S	2020-07-08 21:03:44
Student	Option C					2020-07-20 11:03:25	ANON-FDGN-6QJE-N	2020-07-20 11:03:25

Student	Option C	Having a great variety of choice in our education will help students to start focusing on what they love and start their learning on preferred subjects rather than generalising it in one or a few classes, a variety of choices may also cause students to be more interested in their subjects rather than becoming uninterested in subjects that they are forced to learn about. Like for example Biology isn't my thing. I'd rather have much more choice in the matter of doing other science instead.	Great broad range of science learning. And can gain a large amount of basic understanding of different sciences. It gives a broader foundation to students. Focus more on what the sciences taught can be used for.	It allows for a more focus in on certain aspects of science but some students may not be interested in mixing certain science aspects together in one class. It still provides a broad base for a good science foundation. Some subject combinations will not fit all students.	A variety and more focus in chosen science classes. Provides better foundational skills leading them into their preferred subjects. May not suit students who wish not t specialize. Provide more learning on where the foundations of their science learning can be used and developed later on down their preferred science interests.	2020-07-27 20:37:35	ANON-FDGN-6Q4S-D	2020-07-27 20:37:35
Student	Option C					2020-08-03 15:37:12	ANON-FDGN-6Q48-J	2020-08-03 15:37:12
Student	Option C					2020-08-08 15:14:47	ANON-FDGN-6QWY-P	2020-08-08 15:14:47
Student	Option A	I'm not excalty looking for a career involving science.				2020-08-10 18:19:55	ANON-FDGN-6XX5-T	2020-08-10 18:19:55

Student ; Teacher	Option C	Best of a bad bunch	No positives, only negatives. The most obvious flaw to Option A is its lack of preparation for students continuing Science at Level 2 and 3. Although it serves as a foundation, it fails to educate students to a sufficient level meaning the jump from Level 1 to 2 will only increase. Return to the drawing board on this one! Here's a quote to encourage you despite your failure to present a good option. "Failure isn't fatal, but failure to change might be" - John Wooden	Slightly better than B, but still not great. This option does have some positives. It provides a foundation for students and is sufficiently broad. However, more specific options for school selection would make it easier for schools to customise their subjects and create a better learning environment for students.	Option C provides many more options and is, therefore, the best option of the three provided. However, that is not saying much. To quote the great Winston Churchill, "this is bad." We must all do better Altiora Peto, Bave Done	2020-07-03 09:10:42	ANON-FDGN-6QVM-9	2020-07-03 09:10:42
[No response]	Option C	Gives a better link into the specialized subjects at year 12				2020-06-26 14:35:06	ANON-FDGN-6QXP-E	2020-06-26 14:35:06
[No response]	Option A	Level 1 should be broad. Also allows other subjects in a school timetable.	Yes I think it meets the 7 criteria			2020-06-26 15:02:10	ANON-FDGN-6QXN-C	2020-06-26 15:02:10

[No response]	Option A	Gives ample scope for cross curricular and local curriculum projects. Splitting too much takes away freedom to learn and replaces with discrete pieces of managed learning.	Pos: adapt to needs in a wide scope manner. Neg: some teachers may stick to specific learning areas and not think big Yes, easily meets the 7 criteria with room for specialised learning Support them with time to adapt programmes and think in a cross curricular manner looking for connections not silos.	I think this option is poor. Solos are for the Industrial Age learner.	Broadness will be achieved with no depth. This is a poor, siloed, old fashioned way of organising. Let teachers teach with creativity and respect for learner differences.	2020-06-26 15:11:18	ANON-FDGN-6QXS-H	2020-06-26 15:11:18
[No response]	Option A	All science subjects require the same foundation skills	More streamlined suits smaller Schools better, less workload for teachers		Great for large schools but a lot of work for small schools trying to provide various options which. Is what this will encourage.	2020-06-26 15:21:30	ANON-FDGN-6QXD-2	2020-06-26 15:21:29

[No response]	Option B	B extends learning opportunities in specific strands so they have a taste leading into ncea 2.	Less exposure to strands of science, may be just limited to teacher knowledge rather than inquiry if teacher isnt familiar with biology or physics	I think this option covers a wide scope of science strands? allows teacher time to really teach rather than a more topics in a specific timeframe. Also gives time for teachers to either catch students up or extend on the subjects that are being taught. Better wellbeing for students and effective pedagogy	C seems way too heavy and less time on specific strands, too much topic to cover can means rushed teaching. Could be too big of a jump from science in year 10 to such a wide range of subjects for ncea level 1 Science	2020-06-26 16:17:02	ANON-FDGN-6QXY-Q	2020-06-26 16:17:02
[No response]	Option C	I want to have more control over what I study and focus on the things I am most interested in and enjoy.				2020-06-26 16:23:39	ANON-FDGN-6QXU-K	2020-06-26 16:23:39

[No response]	Option C	I believe all students need to have the option to have a well rounded science education at level 1 where their course can be tailored to the needs of the class. This would allow specialist teachers to impart their own knowledge and use their own contexts for teaching.	I do not see positives to this option. The negatives: - This appears to be a high literacy model (from the previous review material I have seen) which is not the case for all level 1 science students. - This option removes the specialist science from level 1 which in turn will increase the workload of teachers at level 2 and 3. This option would not allow a teacher to effectively teach science.	This is a better option but I don't believe it is the correct one. Chemistry and Physics or Chemistry and Biology all link in together nicely. It would be nice to draw on all 3 to effectively teach science.	This option gives the largest breadth of a science course and would allow teachers to choose standards that meet the needs of their students in the most effective way possible.	2020-06-26 16:33:11	ANON-FDGN-6QX2-G	2020-06-26 16:33:11
[No response]	Option C					2020-06-26 16:33:32	ANON-FDGN-6QX3-H	2020-06-26 16:33:32

[No response]	Option C	My children would prefer to learn in specialised areas.	This is too broad and might put children who have specific interests off science altogether.	Biology and Earth and Space are not a good fit. Physics would be better with Earth and Space Science. But really they should all be separate.	I don't think NCEA Level 1 should be too broad which is why I think this is the best option -- at 15 children should be able to follow their interests. Online teaching can work well for under resourced schools or school clusters could consider focusing on a subject that many of it's schools can't teach well and send a roving teacher around both to teach and to upskill other teachers.	2020-06-26 16:38:29	ANON-FDGN-6QXT-J	2020-06-26 16:38:29

[No response]	Option C	The state of science education and opportunities for gaining qualifications is in jeopardy and science knowledge is under attack from the under-educated (or outright thick and stupid). We should not be doing anything that reduces engagement in science and subject specific science learning and achievement.	Negatives .... reduces opportunities for talented science minded students to engage in specialised learning and qualifications in year 11.... what do they do .. go straight to level 2? Smacks of lowest denominator thinking ... while talented learners may be able to skip level 1, the dire state of science education in nz ... given how it continues to be eroded ... it would seem essential that more ... not fewer .... opportunities to learn and gain qualifications in science are made available. Fail to see how this approach ticks many of the seven criteria ... especially when considered in relation to proposals around other subjects. I would hope this is not finalized as it is anti-science and surely the past few months have demonstrated the desperate need of	Better than A but still too limiting .... any combination runs the risk of artificially placing subjects together ... needs greater flexibility as this starts to place constraints on learning programme design. Reflects 7 criteria a little more than one science only but not as future focused as it needs to be. Solving world problems need teams of people each with highly specialized and meaningfully connected knowledge. Effective teaching of science would require careful curriculum design and not burying science themes in connected curriculum designs that ignore the nature of science and specific science	Positives ....Choice, flexibility, better pathway to year 12 and 13, potential to engage more students in science ... especially if they can select a science(s) that they are interested in. MoE needs to continue to support specialist science teaching and learning and insist upon highly qua5and trained teachers. Depends what emphasis is put on each of the 7 criteria... which across the 8 learning areas seems completely arbitrary at present... has to be a priority for future careers and jobs and making decisions about very complex issues.	2020-06-26 17:33:01	ANON-FDGN-6QX4-J	2020-06-26 17:25:43

[No response]	Option B	I believe that Option A falls short of providing enough options for learners who are interested in pursuing science as a career. Option C, however, while allowing students to hone in on their area of interest, results in learners having to make too many subject sacrifices too early in their NCEA journey. A Year 11 student at some schools may be required, for example, to take Health and PE, Mathematics, and English. This leaves only 3 slots to fit in Science and the humanities. Most students would find themselves unable to study all four science areas without choosing the unattractive General Science over their preferred options. They would also have to consider significant sacrifices in which other subjects they would take - such as subjects within the arts, social sciences, languages	I do not think that this options caters to high achieving students with a high level of interest in science sufficiently. Such students do not want the approach to their science education to be further broadened as they have a solid foundation in science by Year 11 and are interested in gaining both specific knowledge and skills in their areas of interest i.e. physics, chemistry, biology or earth science. Studying more specific subjects will better prepare them for tertiary study in science and engineering (where some students find they do not have enough technical background to thrive in their first year courses). I believe that Option A would negatively affect the credibility of NCEA as a qualification overall among stakeholders. The General Science subject option is appropriate for a	Option B would allow students to pursue their interests without having to make too many sacrifices. Students would be able to fit their compulsory subjects and an extra science into their timetable on top of other options. The mix of Earth Science and Biology may be a drawback to some as these subjects attract very different students. However, this may encourage more narrow focused students (i.e. those with a sole interest in biology or in the traditional three sciences) to broaden their understanding of the natural world. I would suggest that "Physics and Earth and Space Science" and "Chemistry and	Option C, while allowing students to hone in on their area of interest, results in learners having to make too many subject sacrifices too early in their NCEA journey. A Year 11 student at some schools may be required, for example, to take Health and PE, Mathematics, and English. This leaves only 3 slots to fit in Science and the humanities. Most students would find themselves unable to study all four science areas without choosing the unattractive General Science over their preferred options. They would also have to consider significant sacrifices in which other subjects they would take - such as subjects within the arts, social	2020-06-26 17:38:54	ANON-FDGN-6QXQ-F	2020-06-26 17:38:54

[No response]	Option C	Provides a widerchoice of standards for personalisation. Helps to prepare specific subjects for L2 and 3.	No. Totally disagree. This is a step to dumb down Science. It does not make sense as none of the other subject areas are reducing the number of standards so dramatically !!!		Best option as it gives schools to design their own courses based on their need and resources available.	2020-06-26 18:13:01	ANON-FDGN-6QX6-M	2020-06-26 18:13:01
[No response]	Option A	Students don’t Know which science they want to do at year 10 - don’t add extra pressure and stress by making them specialise				2020-06-26 18:36:09	ANON-FDGN-6QX7-N	2020-06-26 18:36:09

[No response]	Option C	Option C allows students and schools to choose from a wide range. The specific standards in physical world, material world, living world and planet Earth and beyond allow students to have the background needed for further study at L2 and L3. This option continues what is currently available to students and schools. Option A would kill Science in NZ. Option B is midway and is a backward step.	The negative is that it is so narrow and will be incredibly boring to learn. It is narrower and assumes students are at a level in Science in Y11 that they are not. It increases the writing requirement which will put off many great potential scientists from continuing in the sciences. It will make any step up to L2 L3 Uni almost impossible for a large number of students. Students will not want to do this. Schools will avoid it and work out ways to keep students enthused for L2 and L3 sciences. Subject expert groups need to consult with teachers.	This is a step better than option A but it is not as good as the current choice or as good as Option C. The example is a reasonable suggestion of mix but is worse than the current choice. Subject expert groups need to consult with Science teachers and then help where gaps exist.	This is the best option as it gives lots of choice for schools to build programmes of learning around to suit the students. It allows a great foundation for students to progress. Subject expert groups need to consult with teachers and then help where gaps exist.	2020-06-26 18:36:29	ANON-FDGN-6QXG-5	2020-06-26 18:36:29
[No response]	Option A	Gives a great foundation without being prescriptive. If we're being bold and wanting change then let's not just revert to the status quo.				2020-06-26 18:48:26	ANON-FDGN-6QXV-M	2020-06-26 18:48:26

[No response]	Option C	More options for students, especially when focused on a particular career pathway.	University staff could be called in to offer specialist subjects.	If a students needs a specialised subject base this option does not cater for that.	Better idea. University staff could be approached to offer to assist. Better option for students with certain career paths.	2020-06-26 18:59:17	ANON-FDGN-6QX9-Q	2020-06-26 18:59:17
[No response]	Option C	Variety is powerful in NCEA. Option A seems very limiting.	Positives are - I don't see many apart from it fits will for schools who undertake student directed/ open design learning. Negatives are it will become a prescribed course with limited options, less focus on conceptual knowledge "content".	It restricts the course design possible across multiple classes.	Gives much more variety in course design and level taught. Schools can undertake general science programmes, specialised courses and can focus on assessment that will benefit the learner.	2020-06-26 19:11:12	ANON-FDGN-6QXH-6	2020-06-26 19:11:12
[No response]	Option C					2020-06-26 19:11:45	ANON-FDGN-6QXX-P	2020-06-26 19:11:45
[No response]	Option C					2020-06-26 19:12:05	ANON-FDGN-6QXE-3	2020-06-26 19:12:05

[No response]	Option A	There is far too much specialisation in Year 11 which doesn't allow students to grow general skills of being a scientist and enjoy science before being asked to specialise in which type of science specifically. Many, many schools also use results in Year 11 to stop students taking science higher up in the school meaning many students miss out as they aren't perceived to be 'academic enough''. I feel a more generalised approach would somewhat prevent this issue as students would all be taking an inquiry approach to science and would find more success than the narrow silos that exist currently. The other two options don't force schools to consider change and allow schools to sneak back into their 'old ways'. We are looking for future focused proposals and changes	Please see my feedback above. This is by far the most collaborative, broad and generalised approach that allows students to explore science and being a scientist and not being immediately narrowed by subject silos. It also prevents students from specialising too young - in particular those who take all three sciences based on out dated views on what universities want for studying medicine, vet etc. These have firmly shifted to only two sciences max being required however the perception lingers and prevents students having exciting more well rounded learning opportunities.	This option feels like a hybrid of A and C to satisfy the loud voices in science who are anti change but don't want to outwardly admit that. I think it doesn't offer anything and is probably the worst of all the options as it isn't status quo and it isn't real change. It would allow the same to remain in schools under the guise of change.	This is the current status quo renamed. It is not future focused nor does it address many of the issues the NCEA review set out to initially address. Don't bow to the negative voices in the room or online. Be brave.	2020-06-26 19:13:33	ANON-FDGN-6QXB-Z	2020-06-26 19:13:33

[No response]	Option C	Because it allows for way more variety and options for students. Though ncea is getting to the point where people will stop doing level 1 and move to 2 years of level 2.				2020-06-26 19:14:41	ANON-FDGN-6QXZ-R	2020-06-26 19:14:41
[No response]	Option C	More variety for our learners. 1 size doesn't suit all motto!!!! Terrible idea to limit it. There goes our science future for NZ!	Terrible idea. Too limited. Will destroy future years of specialised sciences			2020-06-26 19:16:46	ANON-FDGN-6QXK-9	2020-06-26 19:16:46
[No response]	Option C	To allow for the correct preparation for level 2. To do science justice. The individual sciences are such different knowledge it is a disservice to not allow choice	You have made it broader for science but not others. History and geography are still split so why have the sciences been targets to become broader. The lack of real content specific to the sciences is worrying. Yes the concept behind some of the AS are ok (not all of them) for student that do not want to move on with senior science. We should be encouraging more people to move on with science this will not help.	If you are going to split them do it properly.	Yes this allows schools to design course to meet the needs of their students - isn't this what NCEA is supposed to be about. Meeting the needs of our students. They can still be applied to some of the overarching AS. Bring back the TEAMS that used to visit schools to help with development	2020-06-26 19:17:36	ANON-FDGN-6QXF-4	2020-06-26 19:17:35

[No response]	Option A					2020-06-26 19:19:51	ANON-FDGN-6QXA-Y	2020-06-26 19:19:51
[No response]	Option C	It gives schools the options of offering specialisation at year 11 and skills can be developed for senior subjects. Not everyone will achieve in a mainstream subject and some students will need extension. This will also avoid some schools offering year 12 at year 11.	It will encourage teachers to think beyond what we currently do. It may create some tricky debates in departments about how each standard is divided up	Chemistry and biology would fit better than earth and space. We can easily relate reaction rate covered in chemistry to enzymes in biology. Also we can relate ph changes to body changes. Positives = more equity across schools. Larger schools can offer separate subjects whereas smaller schools cannot. With this option, we can differentiate slightly as a smaller school, but not be limited as with option c Additionally, students can relate the sciences together more effectively rather than seeing them as seperate entities.	Positives = specialisation for students, easier for teachers to deal with change	2020-06-26 19:30:38	ANON-FDGN-6QXW-N	2020-06-26 19:30:38
[No response]	Option A	Specialism at level 1 is not necessary.				2020-06-26 19:32:12	ANON-FDGN-6QXM-B	2020-06-26 19:32:12

[No response]	Option B	Happy medium				2020-06-26 19:33:14	ANON-FDGN-6QXR-G	2020-06-26 19:33:14
[No response]	Option C	Allows development of more differentiation in courses. And learner and teacher agency	No it doesn't allow adequate knowledge development for seperate sciences at level 2.	Earth science and living world not a good combination. Earth science fits better with material world. Or physical science(astronomy/ gravity) Clear outlines needed for assessment.	Allows diversity and depth for seperate sciences at L2 and blending for student focussed courses eg sport sciences.	2020-06-26 19:34:54	ANON-FDGN-6QX8-P	2020-06-26 19:34:54
[No response]	Option B	Level 1 needs some subject specific foundational knowledge to give a pathway to level 2 science subjects (chem phys bio). 2 standards should be sufficient for each strand.	Not enough foundational knowledge in science subject strands would be gained. MoE needs to provide useful resources to support each strand (developed units of work) with a list of possible activities (practical and others) and MoE needs to support these resources by making PD on the standards compulsory to every science teacher/department	Chemistry physics fits best. See above for what MoE needs to do.	See above for what mMoE needs to do.	2020-06-26 19:39:31	ANON-FDGN-6QBP-R	2020-06-26 19:39:31
[No response]	Option C					2020-06-26 19:42:42	ANON-FDGN-6QBS-U	2020-06-26 19:42:42

[No response]	Option B	It allows for greater options within a school. I.e. a school may offer more specialisation at level 1 if it meets the needs of their learners or they could develop an internal only course for learners who require a more structured course. Although it would be ideal to have 5 subjects, I understand the objectives of the changes and Option B allows schools to have greater flexibility whilst still meeting the Ministry objectives	In attempting to be broader, this option actually narrows the curriculum and makes it difficult to provide students with a sound basis in all aspects of the 5 strands of Science or whatever best suits the learners within different schools.	I believe this option provides for more flexibility but meets the new NCEA criteria. It ensures schools can enable learners To have a sound basis on which to build their scientific knowledge In the future. The combinations above work well together. However, splitting Ag/Hort into two separate subjects would also assist with giving schools further options.	This option would be the most preferable for schools to best meet the needs of there learners and offer a greater range of assessments/contexts to suit their students however I can see how it does not fit in to the new NCEA L1 objectives.	2020-06-26 19:44:03	ANON-FDGN-6QBD-C	2020-06-26 19:44:03

[No response]	Option C	Science is such a broad subject, that trying to fit it all into a very general course is ill conceived. It does not prepare the students for the specific demands of the different Sciences. For example, there will potentially be very little maths in a Science context, and then students are suddenly expected to become proficient at maths based questions for Physics. I could list multiple examples across all of the Sciences of this. The current setup barely accomplishes the goal of preparing students for the specialisms. Watering it down further will only increase this deficit. There is already a giant leap from L1 Science to the L2 separate Sciences (Biology, Chemistry, Earth and Space and Physics), that most students struggle	This is the most poorly thought out idea for increasing Science proficiency that I have ever seen! I see no redeeming features! The country is already in a poor state in the STEM fields. This will only increase with the current plan, option A.	Certainly better than option A, but too limited in my opinion. To the extent the current system works, it is because there are so many options that teachers can pick the standards that meet the specific needs of the unique students they have at their school. This option does not work for the context above.	By far the best option. There will be enough rigour to extend the higher ability students (potentially our future STEM leaders), whilst giving enough options to engage all students in contexts that work for each school.	2020-06-26 19:44:27	ANON-FDGN-6QBY-1	2020-06-26 19:44:27

[No response]	Option C	It gives the greatest flexibility to allow course design to meet the needs of all students.	It fails on criteria 2, 3, 4 ,5, 7 by not allowing for course design meeting the needs of all ākonga, and also not allowing for suitable preparation for levels 2 and 3	The suggested division would be the best, but I don't favour this option	Allows differentiation of courses to meet the needs of all ākonga, along with the best preparation for senior sciences.	2020-06-26 19:44:31	ANON-FDGN-6QBU-W	2020-06-26 19:44:31
[No response]	Option A	All that is needed at level one	Who needs specialisation at level 1?	Why should a few 'elite' schools dictate what level 1 looks like?	As above	2020-06-26 19:48:16	ANON-FDGN-6QB2-T	2020-06-26 19:48:16
[No response]	Option B					2020-06-26 19:52:20	ANON-FDGN-6QB3-U	2020-06-26 19:52:20
[No response]	Option C	Creates potential for lots of different styled year 11 courses to give choice foe the students	I think its crap. The ministry will need to recruit a lot of new teachers as lots will leave	Nothing constructive to add. A way better option than Option A.	I like the choice	2020-06-26 20:01:22	ANON-FDGN-6QBT-V	2020-06-26 20:01:22
[No response]	Option A	Too early for students at L1 to choose a narrow science option	Balanced and generalised course, students can diversify later	Might be difficult for students to see the relevance of these combinations. Positives - still a broad general course	Far too narrow for students at level 1. Doesn't fit with how other subject areas have been made to be a broad curriculum.	2020-06-26 20:01:24	ANON-FDGN-6QB4-V	2020-06-26 20:01:24

[No response]	Option C	It's more flexible and can cover more specialized knowledge to prepare students for level 2 sciences.	I like the nature of science focus and think these will be appealing standards for most Y11 students. But a downside is the loss of specialist subject knowledge to prepare students for level 2, the step up to level 2 science is already very large and difficult for most students.	I like this option since it provides specialist content knowledge but the combinations of sciences seem limited. Biology and chemistry would be an equally useful combination. It would be good to have the option to mix these combinations up.		2020-06-26 20:01:24	ANON-FDGN-6QBJ-J	2020-06-26 20:01:24
[No response]	Option C					2020-06-26 20:02:56	ANON-FDGN-6QB6-X	2020-06-26 20:02:56
[No response]	Option C	It gives the most scope for specialised courses and tailoring courses to suit learners	Limited scope. Will penalise both top and bottom learners	This would be minimum number of subjects.		2020-06-26 20:03:13	ANON-FDGN-6QB7-Y	2020-06-26 20:03:13
[No response]	Option C	Because the kids who want to specialize say in Chemistry need a firmer understanding than just a bit here and a bit there.	Not broad enough!	Some kids need more understanding for their own interests. This seems you are taking that option away from them. My son would be gutted if you took away his desire to learn fully what he is into.	Give the teachers the programs that they need to teach and what they can expect the kids will have in their exams. Simple. I would hope schools employ people who knows their subjects to pass on their love of them.	2020-06-26 20:02:39	ANON-FDGN-6QBQ-S	2020-06-26 20:02:39

[No response]	Option C	the greater clarity of what a students prior learning should be - as opposed to a vague subject which could include a HUGE variety of potential foundation knowledge. This will give students a more solid foundation to build on at higher learning stages	too broad and vague - moderation and consistency between schools will be extremely difficult to achieve and this is unfair on the learners	Does not reflect the true broad spectrum of potential specialisation and also does not give the learners the full access to make the decision which best suits their personal needs		2020-06-26 20:03:55	ANON-FDGN-6QBG-F	2020-06-26 20:03:55
[No response]	Option B	Would be able to build a course that is best for the students with a choice of standards from different strands	Far too restrictive	I would like to see a bio/chem and a chem/physics course	Just too much choice	2020-06-26 20:05:13	ANON-FDGN-6QBV-X	2020-06-26 20:05:13
[No response]	Option C					2020-06-26 20:05:22	ANON-FDGN-6QB9-1	2020-06-26 20:05:22
[No response]	Option C	The other options don't provide the flexibility in developing courses more inline with each group of students you have, that this option allows.	I like the ideas of these standards, however, I feel it is more in line with social science than science. It also does very little to set students up for the challenges of jumping up to level 2 sciences.	I think these combinations at level 1 are difficult to combine easily.	Provides a lot more flexibility and freedom for schools to better develop programs that fit with the students they have in front of them.	2020-06-26 20:05:51	ANON-FDGN-6QBH-G	2020-06-26 20:05:51
[No response]	Option B	I think its important to teach content as well as skills	I think externally assessing nature of science is flawed	Context should weave the externals we teach now. Acids and bases, mechanics and genetics		2020-06-26 20:05:56	ANON-FDGN-6QBX-Z	2020-06-26 20:05:56

[No response]	Option C	I actually prefer one general science and 3 specialist sciences. I don't think Earth and Space Science is needed at level one. I am an Earth and Science teacher and don't think L1 ESS is an improvement over introducing at Level 2.	There is no doubt that for Chem, Phys, Bio especially for those going on in sciences the extra year improves educational outcomes. These are the students who end up in Engineering and Medicine etc. We need to respect the diversity of our learners and that some want to pursue science education at the highest possible levels. Diversity in educational approach must extend to the "science as a vocation" students and not just the "science aware population " ref “A Nation of Curious Minds: He Whenua Hihiri i te Mahara” launched in July 2014. (MOE)	The ability to learn science use maths and communicate takes a long time. it is patently obvious when you analyse the students entering Professional science-based degrees that the schools that dominate the annual intakes split the sciences at level 1. The physical sciences dominate the top-paying degrees (MOE figures) Even the 3 subject split will result in those schools dropping L1 (as we will) and that will allow them to dominate those professions to an even greater extent.	Best option but should be 3 specialist and one non-specialist (as it is now)	2020-06-26 20:07:22	ANON-FDGN-6QBE-D	2020-06-26 20:07:22

[No response]	Option C	Provides the broadest range of opportunities for all students. As now, teachers can choose the best range of options for their learners. Students can mix and match options that suit them best. Only proviso, a limit is placed on external timings eg if you sit one external you get an hour and a half, if you sit two you get three hours. This allows for fairness	It would need a massive amount of PD for teachers to meet these requirements. It would be good for a number of students who need to gain scientific literacy but not good for those who are switched on to science and wish to delve derper	This is better than option one however the benefit of our current system is that we can pick and choose what interests us and our students. I wouldn't like to see three set option lines. Schools might offer one nod, one bio, two earth science etc depending on their kids. Please let us choose what is best needed in our communities	I still believe that this provides the broadest qualification as it is so flexible. I like that now is there however also believe that no's means nothing if it is not in context somehow, It would be good if there were clear learning objectives provided and keywords so everyone(not just a select group) had access to the key information. Providing resource bookletsfor now strands would help embed this as much of the content behind no's is too difficult for students at this level.	2020-06-26 20:08:46	ANON-FDGN-6QBB-A	2020-06-26 20:08:46

[No response]	Option B	Good compromise. I like that it gives students the opportunity to explore some specific content in the physical sciences. But I also like that there are fewer credits, so the credits the students actually do will be more meaningful. It also gives students and schools the ability to offer more than 1 science course.	I think this option is too open and will require too much socio science skills. Also will be very teacher dependent on the content the students get exposed to. I think in order to have effective science teaching at level 1, we have to remember that students need content knowledge before they can begin to make more significant links to issues in society.	I think this gives a good balance of NOS and the contextural strands. I think these combinations of strands as well. I think there is good overlap of skills. I think this is the best balance for NZ science learning. It would be good for Science teachers in NZ to have specific learning outcomes for Level 6 of the curriculum instead of the vague and alluded to wanted learning. This is a great opportunity to take some guess work out of our programs. But also the standards can be flexible enough in the internals to be able to respond to the needs of the learners. If MOE are going to change the assessment framework, they need to listen to	This is too big. It goes against the broad L1 education philosophy.	2020-06-26 20:09:13	ANON-FDGN-6QBZ-2	2020-06-26 20:09:13
[No response]	Option C					2020-06-26 20:09:24	ANON-FDGN-6QBK-K	2020-06-26 20:09:24

[No response]	Option C	In order to appeal to students wide range of interests option c gives schools a more diverse range of standards to choose from to make up courses.	No option for students to take more than one science at level 1	Weird combinations - what about students who prefer bio chem? Or physics and astronomy?	Much broader, lots of options, would hope that courses could be made up of various combinations of these assessments to suit students interests and abilities	2020-06-26 20:13:59	ANON-FDGN-6QBA-9	2020-06-26 20:13:59
[No response]	Option C	More freedom for schools	Gives students and schools options to teach a larger range. Caters for a wider interest. Could be limiting if schools adopt a similar approach as they are now.	I think that combination is great.	Great	2020-06-26 20:15:49	ANON-FDGN-6QB5-W	2020-06-26 20:15:49

[No response]	Option C	Allows for a diversity of all leaners - the scope for the suggested standards does not cater for a range learners - science is too diverse to stick with just four	Positive you have some idea about what students may have covered in year 12 when they change schools Could be easier for new teachers to come to grips with just four standards Negative not enough choice Not being able to provide an internal course For many students this is the last time they do Science and these were too narrow and too theoretically based for some learners. doesn't allow pathways for students who might struggle with particular ideas	Positive - a bit more choice for leaners Negative- do these standards have to be taken as a group	Positive - flexibility to choose a course that is appropriate to your leaners and staff. Hopefully a bit more variability to teaching strategy and assessment (there were too many reports in the first rendition of standards that I saw) Negative Too much choice Could be confusing for new teachers	2020-06-26 20:17:18	ANON-FDGN-6QB1-S	2020-06-26 20:17:18
[No response]	Option C	Allows flexibility for learners	Difficult to meet the needs of all, could be viewed as too wishy washy	It's better than option A, but still doesn't help schools which split at yr11 or need differentiation	Much more flexibility	2020-06-26 20:20:55	ANON-FDGN-6QBC-B	2020-06-26 20:20:55

[No response]	Option C	Gives a school more options to tailor multiple courses to meet students needs. Would allow my school to continue to offer more specialised science courses as an additional extension subject in support of a general science course for advanced learners	It would not support a science education.	This option is better than A but does not give a school the flexibility of C.	Ministry needs to trust schools to develop appropriate programs of standards based on the needs of students at that school. All students are not the same, we know our students, the Ministry does not.	2020-06-26 20:21:03	ANON-FDGN-6QBW-Y	2020-06-26 20:21:03
[No response]	Option C	Students who wish to proceed into tertiary study need a broader and more indepth understanding of each subject.				2020-06-26 20:22:05	ANON-FDGN-6QBM-N	2020-06-26 20:22:05
[No response]	Option C	Give students and teacher choice. To offer a wide range of subjects to meet the needs for all students.				2020-06-26 20:22:11	ANON-FDGN-6QBR-T	2020-06-26 20:22:11

[No response]	Option C	Each school is different, students in these schools are different. Having a range allows different schools to build courses that best suit their students and best prepare them for life and level 2 courses. I would choose standards from across subjects to best prepare them for level 2 and future years.	Prepare a range of internally assessed assessments that are ready to go. So teachers have options and can suit the one that best matches their students. But the work of writing an assessment for a standard that is new to teachers has been done for them. The access to these standards needs to be locked down to ensure students/parents can't access them.	Gives more options to students and teachers to ensure prepared for level 2 content. Not 100% sold on biology paired with earth science but not sure what else you would pair earth science with. Guess it depends on what content you want level 2 and level 3 contexts to cover.	Variety of options. Easier for each subject specialist area to develop a set of resouurces to meet subject needs. More work behind scenes to develop larger source of resources.	2020-06-26 20:24:53	ANON-FDGN-6QB8-Z	2020-06-26 20:24:53
[No response]	Option B	Some flexibility but not specialised to a refined level.	This option is very narrow. It doesn't allow flexibility or any degree of variability for students	I believe this is the best option. Students and staff would have flexibility amongst standards allowing the creation of interesting combinations but also not creating the ability for explicit specialist focus within level one where a broad curriculum is needed.	The suggested structure runs the risk of students missing out on foundation knowledge as schools could choose to specialise in one subject & science area and ignore others.	2020-06-26 20:25:55	ANON-FDGN-6QDP-T	2020-06-26 20:25:55

[No response]	Option C					2020-06-26 20:27:58	ANON-FDGN-6QDS-W	2020-06-26 20:27:58
[No response]	Option C	Prepares students better for level 2, 3, University and beyond.				2020-06-26 20:29:32	ANON-FDGN-6QDY-3	2020-06-26 20:29:32
[No response]	Option A	The majority of students taking Level 1 Science are probably not going to continue with science subjects through to Year 13 (Level 3). It makes sense to have Level 1 assessment broad but sufficient to allow entry into Level 2 Science courses	Positives: A broad general Science course that is appropriate for all students Negatives (possible): It may make the step to Level 2 assessments more difficult			2020-06-26 20:31:02	ANON-FDGN-6QD2-V	2020-06-26 20:31:02
[No response]	Option C	Option A appears to be less specialised in terms of what is taught. Option B does teach more standards but there is very little room to branch out and there isn't as much room as there in in Option C for schools to select standards that can fit within what they can teach.				2020-06-26 20:31:34	ANON-FDGN-6QD3-W	2020-06-26 20:31:34
[No response]	Option C	Need a variety of subjects at level one. Don't want to focus too early	-	-	Broader. Not need to be specific at level 1.	2020-06-26 20:35:27	ANON-FDGN-6QD4-X	2020-06-26 20:35:27

[No response]	Option C	Because it gives lots of choice and variety to customise courses to best suit the learners in front of us. It means that every strand still has its importance highlighted.	I felt it was very restrictive and still appeared prescribed ESP with the externals. Everything being report written was not great for special learner conditions.	I think it certainly could work but is still limited the creativeness that science teachers have in developing a program that best suits the learners in front of us.	I love this option. It keeps everything broad and wide open so courses could specialise or go super general. It gives options for all learners. I think if this was finalised schools are already well equipped given most have subject specialists already.	2020-06-26 20:35:45	ANON-FDGN-6QDQ-U	2020-06-26 20:35:45

[No response]	Option C	Specific knowledge from the four conceptual strands ("knowledge of science") is absolutely critical if teaching and assessment of NoS is to be effective. Allowing schools the chance to assess against internal and external standards in each of the conceptual strands and the possibility of offering specialised courses for those students who want them is a good thing for choice and for equity.	This approach confuses the idea of a broad, generalist qualification with a 'generic' one. A generalist qualification would allow for assessment across the disparate and distinct disciplines of science, as the cognitive science evidence is clear that so-called generic skills such as critical thinking, problem solving or evaluating evidence are based on discipline-specific knowledge. If this option is to be unfortunately adopted, a syllabus of necessary concepts and content must be included, with the expectation that every year 11 student in NZ has an entitlement to this minimum level of scientific knowledge about the natural world.	The problem with this approach is that any particular combination feels forced. Physics-ESS and chem-bio is probably the best, but the whole problem is that each discipline is distinct, with unique concepts, methods and vocabularies. If we are to offer standards in the four conceptual strands (and we should) then we might as well do it properly and offer all four separately and allow schools and students the broad choice to design suitable, broad courses in science.	A clearly superior option, allowing for broad study across the sciences. In my view, this is the actual vision of a broad, powerful level 1 qualification that includes essential learning at each level. With this option, schools should be offered support to plan level 1 courses that offer coherent academic pathways into each science discipline at level 2 and beyond. Standards in each strand at level 1 should be developed with major sub-disciplines in mind, for example chemistry is often thought of with reference to major sub-disciplines of organic, inorganic, physical and analytical chemistry (though some other divisions are	2020-06-26 20:35:49	ANON-FDGN-6QD6-Z	2020-06-26 20:35:49

[No response]	Option C	This option allows departments to tailor a number of courses not only with the NOS strands but also as a pathway into senior sciences and tertiary study. It allows a more flexible approach in terms of course design and the students sitting in front of us. It also allows us to design individual programs for students as required.	I do not believe this meets all strands of the curriculum, it;s primary focus seems to be ensuring students can achieve credits in level one science with little or no required scientific understanding of the underlying principles. I firmly believe this approach would be detrimental to Science education in New Zealand. Although level 1 is supposed to be a foundational qualification this approach does very little to establish these foundations instead focussing too much on only one aspect of the subject.	A better option than option A, this would ease progression to senior science subjects and beyond but is still limiting in scope of course design. Students vary in their progressions in this subject and need flexibility in standards offered. This allows for this flexibility.	This option, which is my preferred option, allows for real flexibility not only in course design but also in individualised programmes that meet the students needs. As a foundation qualification this would work, as we could tailor make course depending on pathways students a re looking at for future study. If this was established the ministry and subject experts would need to organise a series of seminars (that are easily accessed by all teachers) to not only introduce the standards but also to look at a variety of assessment tasks giving us the flexibility to ensure student engagement.	2020-06-26 20:35:36	ANON-FDGN-6QDJ-M	2020-06-26 20:35:36

[No response]	Option C	There is more choice and freedom of personalisation in option C. I feel that you would be able to tailor the course for the students and cater to their different needs and interests. It would be nice to select internals and externals based on student needs and give them agency over their learning.	Very one sided and does not provide options for students. Tailoring to students is not possible and could disadvantage many students. A positive is that every subject would be covered hopefully. I think that it could have the potential to meet the 7 criteria but it is very unchangeable and a one size fits all approach which is not going to work for every child. It also does not allow interest specialisation for different subjects which would hinder students wanting to continue with specialised subjects in level 2. The ministry would need to provide professional development to science teachers in order to explain strategies and ways to teach this type of course. I also think that teaching resources would be helpful to guide teachers in the right direction. The ministry would also need to prove that it can	I think that this option is a good compromise. It provides more choice and course personalisation to cater to the students needs and gives the ability for students to pursue their interests. A negative is that students are only limited to 2 subject options which would make it difficult picking up other sciences at level 2. This could hinder the students learning in future and disadvantage them. This does provide a foundation of science but there is no ability to alter to the students needs as option C does. I think the ministry would need to provide professional development in any case as there is uncertainty about how these will look	This option has the freedom and choice of the current NCEA structure. It gives teachers and the ability to cater to the students needs and abilities. Another positive is that the course can cover a standard from all strands and provide an awesome foundation for all science strands and give options for students in their level 2 course. I believe that this option provides the best foundation for students in level 1 science and covers all strands with many options for personalisation. I think it would be helpful to have a PD on unpacking the standards so that we can be sure we are choosing the best option for our students.	2020-06-26 20:44:36	ANON-FDGN-6QDV-Z	2020-06-26 20:44:36

[No response]	Option C	This option gives schools a range of standards across the sciences to better cater to their school or students. Allows more flexibility and coverage of the 4 strands of science which are crucial to further science study.	I like how this more directly targets the Nature of Science. But the broad nature of it also limits coverage of the 4 strands of science and makes one school hard to compare to another. Especially if a student moves schools.	I think Physics and Earth and space Science are a better fit. Then put Biology with Chemistry. There are more natural links in this format than the ones you have given. I also like how this gives more flexibility that option A.	This option is good because it still covers the nature of science directly but also gives schools the flexibility to pick from the more contextual strands too. Science requires knowledge of content too, not just skills to progress from one level to the next.	2020-06-26 20:47:24	ANON-FDGN-6QD9-3	2020-06-26 20:47:24
[No response]	Option C	Students with ability and a desire to explore the sciences at a deeper than the superficial “option A” need an opportunity. The “a” option will not prepare students for further study in the sciences during a time of desperate need for them to do so. Option A is selling the scientific future of the country down the road.	It’s too narrow in in focus. It demeans the subject. It does not prepare students for future study. It seems to put the needs of those students “who don’t go on to level 2 sciences” ahead of those that do. I dont see any positives to this approach.	Refer to my comments above.	This is the o my approach which can ensure both the academic rigour of the subject is maintained as well as providing a path for those less able students who only want a foundation in the subject.	2020-06-26 20:48:15	ANON-FDGN-6QDH-J	2020-06-26 20:48:15

[No response]	Option C	It provides the opportunity to teach students the basic principles of science that are required for further study in these sciences. Many students find long project work with portfolios very stressful and impossible to maintain considering pressures to help with families etc.	The score for assessment has been left too broad. It will require very clear guidelines for uniform assesment by akl teachers in the country. There will be a high demand for national moderators who will have to meet regularly to set the same level for a wide variety of contexts that was approached from different perspectives. This option severely endangers the integrity of NCEA as creditable qualification.	This is an interesting option, but the subject groupings still prevents students from accessing their areas of interest. It puts limits on the schools' ability to provide individual learning pathways, designing a curriculum that meetsts the needs and passions of the students.	This option provides a wide foundation for students to have access to a coherent and robust pathway to L2 in Science AND the individual sciences. Science is a very popular subject and it taken by many students as it explains the world around them according to the guidelines set it in the National Curriculum and provides good opportunities for further study and in the job market.	2020-06-26 20:48:56	ANON-FDGN-6QDX-2	2020-06-26 20:48:56

[No response]	Option A	Because if you start to add more standard in it is going to be an equity issue for every other subject. It will make science a higher ranked subject than others which makes it difficult to justify for other subjects. The whole purpose of this review was to make subjects more equitable. Inequities between subjects has been a huge issue for schools since NCEA started.				2020-06-26 20:51:17	ANON-FDGN-6QDE-F	2020-06-26 20:51:17
[No response]	Option C	This allows for more flexibility in schools and adapt it according to the students. It will help with inequities as teachers can cater courses according to the students in front of them and their interests.				2020-06-26 20:55:04	ANON-FDGN-6QDB-C	2020-06-26 20:55:04

[No response]	Option B	Highly specializing at level 1 will over narrow the students too much. However, schools need options. Every learning situation is specific and unique. We need the flexibility to build within our resourcing and unique environment.	This is very restrictive and doesnt provide any backwards planning for the content needed in higher NCEA levels as well as university. It does not suit many different learning environments	I worry about the combination of Biology and Earth and Space Science becoming labelled as a lower academic science level (as we see already with ESS). Therefore lowering the standard for Biology and the general subject which is one of the most essential in schools right now. Why can't we opt to build our own programs out of the 4 strands?	I mean this is what we have, no? And that is clearly not working. I do think this is just too much specialization. They're 15 years old. They need a good base understanding of each strand	2020-06-26 20:55:21	ANON-FDGN-6QDZ-4	2020-06-26 20:55:21

[No response]	Option B	I think this will allow us to tailor courses to meet a variety of school needs better than the current proposal.some schools need to have more academic level 1 science courses that target students heading into senior sciences and this options appears to provide that option. I love the concept of the nature of science based general science course but it is not a good fit for all schools and all students. We still need to teach some basic content and assess it so that students are prepared for this style of learning and exam based as they progress to level 2 and 3 senior sciences.	I like the ability to choose and tailor content. I don't like the looseness and what appears to be a huge workload needed to develop these courses. I can also see a lack of equity between different schools for these types of assessment. Yes it meets the criteria but it will not work for all schools.	I like the mix of content based learning and nature of science learning. This will provide the broadest range of standards that should suit a wide variety of students and schools. I think Bio and Chem work well together and physics and earth and space. I can see the other option working also but prefer the Biochem mix.	This doesn't really change anything and provides too many standards. While it will allow more nature of science standards to be taught, these may not be chosen if there are so many standards able to be chosen. I don't think it suits the vision of Ncea so well as the other two options. Whichever option is chosen, internal assessments should be provided to schools (password protected and choice of three options per year) with clear marking criteria to ensure consistency between schools. This part of our teaching takes up so much time and causes so much stress and uncertainty between teachers	2020-06-26 20:56:43	ANON-FDGN-6QDK-N	2020-06-26 20:56:43

[No response]	Option C	Different students have different interests and have different abilities - students who enjoy writing and a literacy rich subject may preform better in biology compared to physics	Too broad - level 2 will be a huge step up	Physics and chemistry Biology alone	Much better idea - good knowledge leading into level 2 and 3 Students to choose a science they are more interested in and therefore will perform better - science best suited to their ability	2020-06-26 20:58:44	ANON-FDGN-6QDF-G	2020-06-26 20:58:44
[No response]	Option B					2020-06-26 21:01:03	ANON-FDGN-6QDA-B	2020-06-26 21:01:03

[No response]	Option A	Because everyone then follows the same named standards but have such a broad scope to apply their chosen subjects within those (and overlap those subjects where contexts are appropriate). Communication between schools and with the Ministry would relate to "getting to know" only four standards, rather than trying to get our heads around 12 or even 20 new standards.	Positives - simple (only four to learn and upskill in), broad scope (able to be interpretted and applied in the contexts suitable to the school and to the standard), flexibility in how we can overlap subject contexts, with a focus on the nature of science rather than grouping standards by contrived headings and subsets. I think this supports the broad foundations similar to Year 9 and 10 yet now with national assessment, and schools will determine how much of each subject to weave into their courses to allow for subject specialisation the following year (Year 12). Negatives - do we really know "how" we are going to do this? Without the defining control of contrived standards, teachers may deliver material that is too high in difficulty, too low in difficulty, not enough coverage - until we genuinely have	Positives - some scope towards addressing those schools and teachers that cannot seem to see beyond their own "pre-requisites needed to get into their senior subject". But by having twelve, will four of them not even get used by any school? Yay, we can teach "acids and bases" or similar - that will please many people. Negatives - yay (groan) we can teach "acids and bases" or similar. But we could have done that in the four standards in Option A. Now we would be constrained more, and teach it independently of context. There is no "best" combination. You will never please	Twenty new standards!! What is the point! We have 40+ standards already, so why not just cull out half of them. All we need is to give teachers the confidence to assess and judge student work (consistently and fairly across the country) with fewer standards. Positives of 20 standards - there must be a combination of something for everyone/school. And everyone who wants their subject as a prelude to Year 12 can get what they want. Negative - the only reason that people wanted this 20 standard version is because the four standard version was so vague. Communicate better about what it would look like	2020-06-26 21:04:57	ANON-FDGN-6QD5-Y	2020-06-26 21:04:57

[No response]	Option B	Students are still figuring out what subjects they like/what they might want to continue with through NCEA and possibly into university at year 11. However, the differences between biology and physics (especially in terms of mathematics) can be really off putting. This option has the best balance between having a general science subject so that students can still try to find what they are interested in, and giving them the option to do this without a subject they really struggle with.	A positive of a mixed science class is that it lets students be exposed to all the different parts of science if they are still figuring out what they want to do and allows students who do plan to take two or all three sciences later on at level 2/3 the chance to do other subjects offered. A negative is if a students feels like they struggle with one of the sciences they might be put off from taking a general science class all together because of it (I had friends at school who were put off by physics - I'm currently 22). It might struggle to reach the third criteria. Science splits into 3 subjects the next year. I remember there being a really large jump between level 1 and 2, especially in chemistry, because the content was suddenly so much more detailed. MY other subjects I did not notice this jump in difficulty nor did I notice it	A positive for this option is that students who really don't like/struggle with one of the parts of science have the option to continue with just the part that they are interested/passionate about. A possible negative would be students doing the general subject not getting a as in depth knowledge into a subject as the students doing one of the other two options. And so, when they move into level 2 if those two classes then combine you have different levels of understanding of biology/physics/chemistry. Having biology and physics separated is definitely a good idea. I think they probably have the least amount of	A negative of this option is that it creates a lot more subjects. There are only so many subjects a student can take. If they only have 3/4 optional subjects at level one then students who want to take multiple science subjects under this option wouldn't be able to take other subjects they might only do at level one because they enjoy the subject (especially art subjects like visual arts, history ect). Depending on what career paths they might want to do they might be forced to take all of these subjects which wouldn't give them much variety in their classes. These would also likely fail the first criteria for NCEA	2020-06-26 21:05:20	ANON-FDGN-6QD1-U	2020-06-26 21:05:20
[No response]	Option C	More choices for students who find some topics difficult and means more options for their future.	Hard to tell without details but seems like there's little choice.	Has more choices which is good but the combinations may be limiting. Could be difficult for staffing for some Schools.	Gives the greatest range so most choices for students. Training and PD on this would be helpful.	2020-06-26 21:08:04	ANON-FDGN-6QDC-D	2020-06-26 21:08:04

[No response]	Option A					2020-06-26 21:08:50	ANON-FDGN-6QDW-1	2020-06-26 21:08:50
[No response]	Option B	It has enough specialization yet is not too cumbersome.	This option is not specialized enough and is too broad. It is important to have some depth to level 1 science courses so that students go on to levels 2 and 3 specialist subjects with a solid foundation. Quality over quantity.	I think this is a more viable option and has better merit as it allows for specialized teaching within the matrix. The combination of ESS and Physics as well as Biology with Chemistry is also a possible option. However the current suggestion also works quite well.	Option C is too cumbersome and there is high chance that some specializations will miss out based on resourcing. It is too specialized and does not fit the broader Level 1 qualification.	2020-06-26 21:13:11	ANON-FDGN-6QDM-Q	2020-06-26 21:13:11
[No response]	Option C	Greatest number of options for schools and students				2020-06-26 21:13:40	ANON-FDGN-6QD8-2	2020-06-26 21:13:40
[No response]	Option B	Gives broad Coverage of all science subjects	Too Vague for most Students.	Yes. Better coverage of Science areas	Too many options here	2020-06-26 21:13:19	ANON-FDGN-6QDR-V	2020-06-26 21:13:19

[No response]	Option B	It better supports integration of content strands and authentic contexts. Hopefully moves away from a continued focus on separate sciences.	It reduces focus on just the content to better support and encourage NOS. It does not support integrated options for students.	Supports integration.	Too much choice is the same scenario that we are faced with at the moment. Encourages a focus on grabbing a bag of standards without allowing deep learning. Takes focus away from NOS.	2020-06-26 21:15:13	ANON-FDGN-6QYP-F	2020-06-26 21:15:13
[No response]	Option C	I like variety and more specific standards will allow for less generic assessment				2020-06-26 21:16:09	ANON-FDGN-6QYN-D	2020-06-26 21:16:09

[No response]	Option C	I would select B or C - so it was hard to fill in. In fact I feel very strongly that I would support ANY option that is not option A, with the dreadful proposed 4 Science standards (still dreadful after some tweaking). Option A with its strong focus on 'nothingness content' with high literacy demands assumes students who are motivated and engaged. Many students at Y11 have no idea what interests them and if they do, the Science is way above their abilities / prior knowledge. I strongly desire the retention of some content based AS along side NOS type ones to better position our students for future success in Biology, Chemistry and Physics. If Covid has taught us something, now is the time to have people who understand Science and not ones who will argue the	All negatives. The focus on the Maori view of Science to the detriment of solid real and useful Science will set NZ back by years in the World. A broader foundation qualification is of little value - and all we do is set kids further back behind the rest of the world. This already happens when students are sometimes only meeting Science to any degree in Y9 (the Primary and Intermediate experience is so varied). If we are stuck with the proposed Option A, expect many schools to drop Level 1 altogether, or move to Cambridge - and the early retirement of a lot of teachers who. quite frankly, see this as a crappy move.	As above comment. Some schools have no desire to teach Level 1 Earth Science - and see no need. There is content in our Y9 and 10 courses. Bio + Chem work well together as do Chem + Physics. But option C whee teachers are again able to design courses to meet the needs of students in front of them is the common sense way to go. Then those teachers who love the pseudo Science and socio-Science can teach Science to students who will not progress to be the Doctors and Engineers and Chemists out country needs! Best of luck finding any specialist Science teachers if option A is adopted.	This is the only sensible option if we are to meet the needs of the students we teach - a very diverse group in terms of both abilities and ethnicities in our increasingly MULTICULTURAL NZ.	2020-06-26 21:17:18	ANON-FDGN-6QYS-J	2020-06-26 21:17:18

[No response]	Option B	I think science needs to have contextual components to prepare the higher academic students for the rigors of tertiary education. I think less choice also allows the planet earth standards to be used more. If we did option c then the majority of teachers would continue to choose their courses out of the other three and still ignore the richness that the planet earth standards offer.	Positives are the fact any context can be used to teach NOS (Nature of science). The negatives is in this planning stage insufficient information has been provided so that teachers couldnt see the potential and begin any creative ideas. Also another negative is that with having the. NOS standards so broad and vague, teachers would stick to what they know and probably not offer a broad range of contexts. (although good teachers would). I have no real clue if these proposed standards meet the criteria because the introduction of them is so vague. Science teachers are your black and white thinkers we need more robust examples of what it should look like before we even consider taking this on. If implemented these expert groups need to be made up of teachers who are working in classrooms with real		Limited choice is a positive. Can't think of any glaring negatives. Think it's a step in the right direction to maintain robust curriculum. Fits the seven criteria better but still not perfectly. Again knowing exactly which standards survive is important. Same comments as in option A about what the experts should be doing. I like the way the contexts are combined. Bio and planet earth offers heaps on the way of ecology and sustainability. Chem and bio combo needs to be left to level two.	2020-06-26 21:18:17	ANON-FDGN-6QYD-3	2020-06-26 21:18:17
[No response]	Option C	Choice so we can cater for a diverse range of learners.	Does not cater for a wide range of learners. Change for changes sake. No, it narrows it does not make broader. Give up and change careers.	Better than A, but only just. Bio/ess fit together well.	Choice! Able better to cater for the needs of diverse learners. Won't drive teachers out of the profession.	2020-06-26 21:18:52	ANON-FDGN-6QYY-R	2020-06-26 21:18:52

[No response]	Option B	Ability to offer three science courses will allow for the different pathways year 11 students have without limiting them to a NoS only choice (option A) or the current (or option C) where schools will be unlikely to be able to offer 5 courses given timetabling constraints so end up blending and having only one option. Option B looks perfect, well done and thanks for listening to teachers feedback. Ka pai tu mahi.		As above and as laid out in suggested format, good blend of flexibility and options for students while still offering a NoS course and two “specialist” tertiary aiming courses.	Too much choice/options for timetable	2020-06-26 21:28:15	ANON-FDGN-6QY3-J	2020-06-26 21:28:15
[No response]	Option B					2020-06-26 21:29:53	ANON-FDGN-6QYT-K	2020-06-26 21:29:53

[No response]	Option C	If we are really trying to allow schools to cater for different students, then the more standards available, the better. I like the options that we currently have and this is why I choose Option C, as it is the most closely resembles what we have. As a parent of future Y11/Level 1 students, I would rather that they had many options to work best with what suits their needs and interests. Also, having more standards, allows us to run more internally assessed courses for students who struggle with the stress of exams.	I find this option too narrow and limiting. I think that many schools will opt out of using NCEA Level 1 if this were the only option.	This lies closely with how we have run Level 1 courses in the past. We would run a Physical Science Course (just a semester one) and a Biological Sciences course. We also ran a cross curricular PE/Science with ESS standards. I don't personally think they tie in with Bio, I would like to see more HumanBio back in the subject matrix. As would students.	This one allows the most choice.	2020-06-26 21:33:43	ANON-FDGN-6QY4-K	2020-06-26 21:33:43

[No response]	Option C	Need to provide as many science options as possible. Science is such a wide and diverse subject. Current general science is not specific enough and doesn't provide students with a depth of knowledge or allow them to discover the different areas of science that can spake their passion. They might hate ecology, but love biochemistry but never get to find out, blocking off science as a possible future pathway, when it's the country's future.				2020-06-26 21:40:34	ANON-FDGN-6QYQ-G	2020-06-26 21:40:34
[No response]	Option C	Greater depth and challenge for students. Given the current world situation we need to get more students into science!!!	No detail and lack of knowledge.	Bio and chemistry are a great combination but needs to be content rich	Keeps the depth and challenging content for the most able	2020-06-26 21:40:23	ANON-FDGN-6QYJ-9	2020-06-26 21:40:23
[No response]	Option C	Gives more options for schools to develop different science courses to best suit our students learning while still been able to develop content.	This is my least preferred option as it does not cater to student strengths and place based curriculum.			2020-06-26 21:44:17	ANON-FDGN-6QY6-N	2020-06-26 21:44:17

[No response]	Option C	Options for teachers to offer more custom learning programmes that are better tailored to the interests and needs of their cohort, as well as local contexts.	It reduces options for custom courses. Already we see too many non specialists teaching in the junior and middle science classrooms and this would allow this to more easily continue as content is likely to be further softened in favour of an all generalist skills and little content approach.	A middle ground and closer to the curriculums seen in Australia but the only advantages I see are in a reduction in administration from nzqas perspective (fewer standards to moderate, etc). There are many contexts that can be combined and will be ignored here, e.g. biochemistry, astrophysics, geology and physics...	This provides the broadest set of possible combinations of teaching programmes and would allow courses to be tailored to individual schools and even classes. It may be less favoured by some who would like to see a much more prescriptive curriculum with less choice. Having seen a highly prescriptive curriculum in Australia and how it is assessed, the flexibility offered in ncea and how easily programmes can incorporate standards when so many are available is a massive strength and it would be a shame to lose this. It would help if the MoE provided free pd to schools on how to better	2020-06-26 21:50:27	ANON-FDGN-6QYG-6	2020-06-26 21:50:27

[No response]	Option C	I firmly believe this will give teachers and learners much more flexibility and the ability to capture student engagement. The beauty of NCEA really became apparent during "lockdown". The ability to change, modify and bend to the demands of our learners in an incredibly short time frame highlighted to me the importance of having a broad frame of reference for our learners.	I believe this is too restrictive. I love teaching NOS and believe it is incredibly valuable however I do not want to see this be the only assessment paradigm. I believe it narrows rather than broadens NCEa	This is ok, but still does not provide the flexibility and richness that option c provides.	I believe this aligns much better with our NZ curriculum, caters to the needs of a greater diversity of student and provides a rich learning environment for our student body. It will allow us to design robust, coherent local curricula and it provides the ability to deliver a rich and broadly appealing level 1 to support the pathways for individual learners. After all, as we know, one size does not fit all!	2020-06-26 21:54:23	ANON-FDGN-6QYV-N	2020-06-26 21:54:23
[No response]	Option A	Cover the main four areas. Give a chance for depth, not breadth.	I don’t feel this version is a limitation. I think you continue to support science and pd.	Physics and Earth/Space Science go together. Then put Chemistry and Biology together. This is a much more logical fit.	Too broad and not enough depth.	2020-06-26 21:59:12	ANON-FDGN-6QY9-R	2020-06-26 21:59:12

[No response]	Option B	Simplified system that also has room for students to diversify based on interest area, so can gain credits in recognition of multiple science strands.			Essentially what we already have so I think it's pointless to change the standards to the same hot mess we already have available.	2020-06-26 21:59:21	ANON-FDGN-6QYH-7	2020-06-26 21:59:21

[No response]	Option A	I strongly feel that the new 4 science standards best support ALL students to have equal access to science education at level 1. Having more subjects will involve assessing content rather than NOS, and this immediately creates a pathway option where some students may be directed away from Science (ie. An elitist pathway). A general science education at l1 is in line with the consultation package of NCEA changes. The new standards are bold and forward thinking and can be assessed in any context. Returning to the old ways of doing things only privileges students who already have a high access to education. If schools are running more than one science course at L1, then they are not fulfilling the purpose of a General L1 qualification - the MOE should be deciding what they teach, not	As in the previous comment section	I do not support this option. It will create an elitist view of some of the subjects (chem/physics). There is plenty if time to specialise at L2&3.	This goes against the broad level 1 approach. There is plenty of time to specialise at level 2&3.	2020-06-26 22:19:17	ANON-FDGN-6QYE-4	2020-06-26 22:19:17

[No response]	Option C	C is the preferred option. This will give the maximum amount of students the ability to follow the maximum number of viable work/life pathways. NoS standards available for those who are not expected to continue onto senior sciences but still provide science experiences and knowledge for them to be able to make sense of science in their everyday lives. And subject specialities available for those who expect to follow a science based tertiary pathway, satisfying the expectations of subject specific knowledge required for tertiary entrance.	A is not a viable option. The standards offered are far to vague to be able to add significant value towards building coherent pathways to success in senior sciences. Removing specific subject learning from Level 1 places more pressure on students at Level 2/3 to reach the expected level of understanding required from other stakeholders (tertiary providers) in such a limited timescale. I do not believe it meets criteria 2,3 or 7. If this approach is finalised I do not think the ministry will be able to ensure all schools can teach science effectively. The standards are far too vague, and offer very few options for assessment outside of report writing /portfolios, which will disadvantage ESOL/Pasifica/Maori learners and schools supporting these	B - is marginally more viable in that it offers students going onto senior sciences more opportunities to cement subject specific learning. Only just. Again, I do not think it meets criteria 4 or 7. If this approach is finalised, again more clarity would be required around the NoS offerings. The structure currently offered significantly disadvantages students from non-English speaking backgrounds. With reference to the combination of subjects into matrices - this again brings us to the issue at heart. All science subjects have a small amount of overlap, it is what allows us to understand the	This is my preffered option. It is the option that I believe best meets the 7 criteria, though in order for it to be successful for all learners I think far more thought needs to go into the NoS standards and making them more accessible to ALL learners, not just those with outstanding literacy skills (as this is what seems to form the basis of the standards currently offered.)	2020-06-26 22:20:49	ANON-FDGN-6QYZ-S	2020-06-26 22:20:49

[No response]	Option C				This gives the broadest base out of the three options. It allows choice so that science is appealing to many students. To be most effective the assessment marking should not be prescriptive but be open to recognising a variety of student ideas. This makes teaching and learning open to current ideas (e.g. evolution was locked into old knowledge previously) and tangents of interest. It should not be about guessing what the teacher wants to hear. If specific answers are wanted then the questions need to be specific.	2020-06-26 22:24:47	ANON-FDGN-6QYK-A	2020-06-26 22:24:47
[No response]	Option B	Provides choice while limiting the number of credits. Flexible enough to allow for student interests.				2020-06-26 22:28:44	ANON-FDGN-6QYF-5	2020-06-26 22:28:44

[No response]	Option C	More range of options to offer students.			Prefer this as allows different schools to offer a much wider range of possibilities.	2020-06-26 22:41:54	ANON-FDGN-6QYA-Z	2020-06-26 22:41:54
[No response]	Option C	Allows schools and students flexibility with learning.	Too general..will result in major rewrites of schemes and very little time to do so.			2020-06-26 22:47:50	ANON-FDGN-6QY5-M	2020-06-26 22:47:50

[No response]	Option B	More flexibility for both students and teachers, not as limiting as Option A, but possibility of more structure and getting the broader Science option for all, rather than option C	My main concern with Option A is that there are not enough credits for the students who find Science very difficult and need a huge amount of scaffolding to achieve them. Many of these students do not sit external exams, so option is too limiting. A teacher would not be able to scaffold the learning for the external either, as the range of questions has the potential to be so broad that it would be difficult enough to prepare well-organised highly motivated students for exams, let alone the rest. Sorry, but I haven't seen an exam paper under this new criteria to make a considered judgement on some of the seven criteria you are asking about. Too much is unknown and until this information is properly out there, and all teachers see how it works, there will be resistence.	It seems to me there is more scope to cater for all levels of students under this option. It would cater for the engineering level students who need to be at excellence level in Physics, yet also cater for the less able students who need more scaffolding.	This option would cater very much as is happening at present, and may give too many options, to bring in a broader base as is hoped. What teachers do now is teach to the exam, as there are more kudos in getting excellence's than achieves. I think it is good to limit the number a little and make the overall topic much broader by incorporating each Science into 1 paper, but still allowing students aiming for specific courses to excel at some standards. The biggest thing will be to prepare resources that teachers can pick up and run with, yet be broad enough to offer the flexibility of each school having different clientele, and different	2020-06-26 22:53:06	ANON-FDGN-6QY1-G	2020-06-26 22:53:06

[No response]	Option B	I think this option provides a better balance. It provides students with an opportunity to develop an understanding of some of the key ideas needed at Level 2 and 3 without becoming too specialised.	Whilst you would like to keep Level 1 as a broad, foundational qualification, students already find the Level 2 to 3 jump overwhelming. This option would only exacerbate the issue. We would have to increase the content taught at Level 2 and this would be overwhelming without the previous content knowledge. This is why most schools have prerequisites. Unless university courses are changed we cannot reduce the curriculum at Level 2 and 3.	Allows for more in depth study of the contextual strands, whilst still allowing for a broader range of topics to be covered. I think this is the best fit with the seven criteria. Chemistry and Biology could be grouped together to look at chemistry at biochemistry. Physics and Earth and Space Science could be grouped to look at the basics of astrophysics for example.	This option would allow students who are confident of their path to gain a strong foundation to set them up for success in the future but is unlikely to fit within the seven criteria. Schools could be provided with examples of meaningful courses that are made up of mixed and matched standards. This would provide school's with numerous options for what a Year 11 course would include.	2020-06-26 22:57:25	ANON-FDGN-6QYC-2	2020-06-26 22:57:25

[No response]	Option B	It is best to have some breadth of knowledge at this level, to be able to develop interests and knowledge for future reference. However, having more than 3 or 4 subjects is too clumsy and doesn't allow students to properly focus on each subject and it's key takeaways.	The positives are that students will gain a better grasp on each subject. This will allow them to make better decisions on where they would like to go with course choices in the following years. I don't see any negatives.	The example given offers the best combination.	Teachers from a wide range of backgrounds should be employed, obviously with expertise in the taught areas. It may be an option to have different teachers teaching different matrices in any one class. This could provide a better fit for teachers and students. And it may provide flexibility of teachers to move between schools, to alleviate any shortage of teachers with the required knowledge.	2020-06-26 23:01:44	ANON-FDGN-6QYW-P	2020-06-26 23:01:44
[No response]	Option B	Some choice	Boring for students			2020-06-26 23:24:04	ANON-FDGN-6QYM-C	2020-06-26 23:24:04

[No response]	Option A	Allows the learners to maintain breadth at this level using the important basis of nature of science for scientific exploration.	Positives: allows contextual and hands on science to be experienced by the learners as well as maintaining exploration of all four strands. Negatives: not all components required for level 2-3 specialism may be explicitly 'taught' Yes I believe it meets all seven criteria. Schools would need a short checklist of concepts to cover for each strand within their locally designed curricula.	Positives: The combination of two subjects introduces the idea of inter-disciplinary science. Negatives: The fit of the two specialist subjects may not suit all schools/learners if they are prescribed for externals. It offers less breadth than Option A so doesn't meet the seven criteria as well. A more prescriptive curricula would be required for schools. This lessens the ability for a local curriculum. Physics/Bio good for biomechanics but Bio/Chem also fits well. Physics/ESS is a good fit but ESS could also fit with bio	Positives: prepares learners well for specialism at levels 2&3 Negatives: would need to be very content heavy. Would be a big chunk of learning time, taking away the option for other subjects if science is compulsory at the school. Doesn't meet the seven criteria. Would need to be heavily prescribed.	2020-06-26 23:32:22	ANON-FDGN-6QYR-H	2020-06-26 23:32:22

[No response]	Option C	Gives those who are going on to higher level science subjects a better background but allows other students to access the NOS background.	Negatives - does not extend and prepare students for senior science. Positive - will be great for year 11 who are not going on in science.	The strands should be the separate subjects. Schools could develop a bjo chem course etc by pulling standards from different strands together.	Positives- gives choice to create a course that fits the students interest. MOE could make science compulsory at Level one. More students doing science would mean a better balance could be achieved ie having a general course of the NOS standards and other classes that are more targeted at specific areas of science subjects.	2020-06-26 23:37:16	ANON-FDGN-6QY8-Q	2020-06-26 23:37:16
[No response]	Option C					2020-06-26 23:43:55	ANON-FDGN-6QTP-A	2020-06-26 23:43:55

[No response]	Option C	I like the variety of standards that it would bring and having the option to choose what would suit the needs of learners year to year.	I do not like it, there are not enough options for the different learners especially for lower level or for learners to gain the skills needed for senior sciences putting pressure on their level 2 teachers to teach them the skills and knowledge required on top of level 2 requirements. The ministry need to provide exemplars, guidelines, resources and time for teachers to be able to make and plan changes to their programs.	All Sciences link together however that is normally extremely complicated to explain it properly in depth especially for level 1. The ministry need to provide exemplars, guidelines, resources and time for teachers to be able to make and plan changes to their programs.	Positives are that it gives options to teach specific skills needed for level 2/3 specific sciences. There is a chance that teachers would not change their course dependant on the cohort of learners they have year to year. Yes I do. The ministry need to provide exemplars, guidelines, resources and time for teachers to be able to make and plan changes to their programs.	2020-06-26 23:47:33	ANON-FDGN-6QTN-8	2020-06-26 23:47:33
[No response]	Option C	It means that students are less limited and schools could have a variety of courses based on student interest.	Too narrow	I don't like the combinations.	Leaves schools the ability to have a variety of courses and the flexibility to choose standards that best fit their students	2020-06-26 23:58:12	ANON-FDGN-6QTS-D	2020-06-26 23:58:12
[No response]	Option C	There's more options for different people and they can then fairly aim for the credits in the sections they like or are good at				2020-06-27 00:18:46	ANON-FDGN-6QTD-X	2020-06-27 00:18:46

[No response]	Option C	Leaves options open for schools to create their own specialised courses, eg. Health science	To feed options, very limiting on specialised courses the students love. Can't see a positive. Doesnt set students up well for specialised study in y12/13 and beyond.	This again restricted your combinations. If we put ess and bio together, and physical and chem great. Buy what about courses that suit a combinations of chem and bio e.g. health science and forensic science. Or physics and ESS like a lot of astronomy. I prefer the options we have now to create onteresting courses tailored to student interests.	Great, it leaves options open and means teachers can tailor to their students needs	2020-06-27 01:35:54	ANON-FDGN-6QTU-F	2020-06-27 01:35:54

[No response]	Option C	It provides sufficient scope and flexibility for school curriculum and courses and programmes within them to offer a range of opportunities in the full breadth and depth of science; allowing those aspiring to science pathways to draw on specialised contextual skills and knowledge while still supporting entry-Level courses in general nature of science and its connections with other aspects of the NZC and Learning Areas.				2020-06-27 01:49:32	ANON-FDGN-6QT2-C	2020-06-27 01:49:32
[No response]	Option C					2020-06-27 04:05:54	ANON-FDGN-6QT3-D	2020-06-27 04:05:54

[No response]	Option B	This will allow for students who already know that they will be pursuing a future in the scientific field to choose additional scientific class options togain further understanding of the specific areas of the physical, material and biological world which will support their future study without having to limit their subjects of study at level one too much	I believe a general science option will provide students with a significant basis of the science world and give them an understanding of science processes and principles that will be able to be linked with other subject areas and thus offering students the opportunity to study a number of subjects that would provide a broad qualification, especially for students who may not choose to study science from Level 2 onwards. However, I believe that Limiting the choice to just a general science option, for students who already know that they would like to pursue science study in the future they will struggle with this future study if they don't have the opportunity to be exposed to more specific scientific concepts at NCEA Level 1.	I believe that this is the best option. Especially when considering the opportunities that it will offer students to learn a wider range of foundational science concepts	I believe that this option will limit students from receiving a broad spectrum of education at level one. Those students who may be interested in science may limit their other subjects too much at this point of their education if they feel pressure to take all science options. One possible option would be to limit the number of science subjects that a student can study to two (which is what I see Option B is doing).	2020-06-27 05:59:07	ANON-FDGN-6QTT-E	2020-06-27 05:59:07
[No response]	Option B					2020-06-27 06:57:07	ANON-FDGN-6QT4-E	2020-06-27 06:57:07

[No response]	Option C	OPTION C STEM SUBJECTS are currently and chronically underrepresented and inconsistently delivered without laying out solid foundations. This elective approach shows in adulthood - people are unable of deductive reasoning and understanding the world around them. I am teaching health science at a tertiary level and the lack of basic understanding is shocking when compared to university entry in Europe. Regardless of whether one is to become a scientist, EVERY person should know that we are made of cells, what they look like; know the basics of thermodynamics, how fridges work; and what matter consists of, etc.			I do realise that my response is not as differentiated as requested; I would need to look at the k12 sector in more detail to commend. However, I DO WELCOME this long needed review and whatever is decided, this is my input: STEM subjects are chronically underrepresented and inconsistently delivered without laying out solid foundations. This elective approach shows in adulthood - people are unable of deductive reasoning and understanding the world around them. I am teaching health science at a tertiary level and the lack of basic understanding is shocking when compared to university entry in	2020-06-27 06:59:22	ANON-FDGN-6QTJ-4	2020-06-27 06:59:22

[No response]	Option A	The other options could mean some schools get an unbalanced coverage of science depending on what the head of science decided.	Positives: covers the basics to follow on in individual sciences or for general knowledge if student does not continue on in science. Negatives: to much to cover in one year. The time given to each subtopic would mean such a superficial exposure to the content that I think students would find it difficult to form understanding. Schools would need unit plans, individual lessons with practical activities link to theory. Textbook on the theory so we know the depth required. This will be important for teachers that don't have specialist knowledge in some of the areas eg earth and space science, geology etc. this will ensure all kids have access to the same quality of information. Internal assessment tasks with exemplars. These should not be available to the public so that schools can actually			2020-06-27 07:14:06	ANON-FDGN-6QT6-G	2020-06-27 07:14:06

[No response]	Option C	Allows greater flexibility to develop different courses that suit different students learning needs. Can create general science skills courses for students who will not continue in dviencecst later levels, it specialist courses for students with a particular interest such as health sciences.	Not broader, more restrictive. All students would have to do the same standards, albeit possibly in different contexts, but those standards wouldnt suit students so we could end up making science no longer compulsory at Y11. This would not be advantageous for society.	It is better than A, but making flexible courses would mean limited choice	Most flexibility and options to make courses suitable for a wide variety of students	2020-06-27 07:16:58	ANON-FDGN-6QT7-H	2020-06-27 07:16:58
[No response]	Option B	It allows a choice between physics and bio but still provides a comprehensive coverage of the two areas. Level one should be about more in depth learning in an area but specialisation should only come later.	Option A should be at yr 10 level. At level 1 students are already making choices about there future and have had two years of general subject exposure. They need to be able to choose their direction. If this is the final choice senior teachers will have to share classes as most teachers specialise in either bio or physics/chem . This makes timetabling level one more complicated at it will be a semester course.	Best option, correct grouping of subjects. There must be the option to do both but the choice allows a student to do a science they enjoy without the shadow of the other science they don't want to do hanging over them as a requirement.	Too many options for level one and will result in students trying and changing and moving to level 2 courses without a foundation.	2020-06-27 07:19:43	ANON-FDGN-6QTG-1	2020-06-27 07:19:43

[No response]	Option C	More options and opportunities for students to learn specific parts of science	Don't believe it is in depth enough, considering that many students will want to move on to other specific science subjects in the future			2020-06-27 07:20:38	ANON-FDGN-6QTV-G	2020-06-27 07:20:38
[No response]	Option B	This allows more flexibility and variations of courses based on student interest.	Just does not allow for variety. We have not seen level 2, but don't believe would be Abe to get the foundation for senior levels.			2020-06-27 07:39:45	ANON-FDGN-6QTH-2	2020-06-27 07:39:45
[No response]	Option B	think students aren't aware enough to specialise in level one , so this is good. It mixes areas together but gives much more exploration than option A	It is too narrow. Can't effectively lay foundation knowledge like this. Clearly, the feedback has been negative on this option.	This allows for students to take science and get that foundation knowledge. A very good solution to the feedback given.	Far too many for one subject area. At level 2, it would be a yes, but not for level 1.	2020-06-27 07:41:22	ANON-FDGN-6QTX-J	2020-06-27 07:41:22

[No response]	Option B	Allows for some differentiation whilst still giving a high likelihood of some consistency between schools. Students moving between schools are likely to have a coherent program. There is valuable learning and assessment for students ending their science studies after level 1. At the same time courses can be designed to prepare students well for further studies of science.	Somewhat. While it does encourage students not to load up on sciences at level 1 it is inequitable in relation to other areas of learning, for example languages. In the same way that offering a general language course at level 1 Would lack depth, rigorous and be a poor preparation for future studies, offering only a general science option is limited. This approach will see schools manipulating the standards to nest suit their individual needs driving disparities between schools and communities. This is particularly unacceptable at a time when society needs scientists and scientifically literate citizens en masse	I think this option offers the best balance of flexibility and coherence. This is likely to create the most equity of learning	This is my second preference. The science is likely to be more rigorous and valuable. The down side is that there is so much choice that students in different schools are likely to get a vastly different experience of science. There could also be a temptation for schools to load up students with far to many standards	2020-06-27 07:43:34	ANON-FDGN-6QTZ-M	2020-06-27 07:43:34

[No response]	Option C	Many of the new/proposed standards are poorly written. Having more choices as a course designer would give choice to avoid the badly written standards.	The simplicity of less standards is appealing. To ensure that this option is taught effectively, the standards must be written by experienced teachers who are still actively engaged in teaching AND be from a range of schools. DON'T WRITE BAD STANDARDS. Schools must interpret the standard, AND find explanatory notes AND navigate external moderation that is often poorly executed.	Combining subjects in a forced, contrived way is a poor choice.	Ministry must write standards with explanatory notes in the standard and not in a separate place. Also sub contract the work to paid teachers, not ministry fools.	2020-06-27 08:02:37	ANON-FDGN-6QTK-5	2020-06-27 08:02:37

[No response]	Option C	Obviously C! Science is multi disciplinary...there is chemistry in biology...there is physics in chemistry...you cannot exclude any of them if you are genuine about preserving the integrity of the subject. Our industry requires students to be equipped well with the correct skills and knowledge for University and careers in Science. It takes time (at least 3 full years) to start to build this knowledge and skills...so it must start at Level 1.	NO WAY. There are too many obvious negatives the main one being that you are not exposing students to the full idea of Science. Anyone who approves this option does not have an integral understanding of science and a lot of respect will be lost from the teaching science community. This process needs to be approved by a secondary school teacher with respectable experience and an actual personal education background in science. Anyone who is in the Ministry of Education without this experience and knowledge should not be part of this decision making as they have no idea what the significance of this issue is.	Again...not the complete package. Not going to waste my time.	NO NEGATIVES AT ALL - THIS SHOULD BE THE OPTION for many obvious reasons as explained before.	2020-06-27 08:05:47	ANON-FDGN-6QTF-Z	2020-06-27 08:05:47

[No response]	Option B	I liked the option a, but b will give more customisation opportunities to really develop individual courses. Option c has too many standards.	I like the idea, but it doesn't allow for students to get much experience of all the different areas of science, which is the whole idea of generalizing. It also doesn't allow students who want to proceed with science at level two or aim for university to take more than one science subject. If this is chosen, external marking MUST be done externally, not eventually palmed off to teachers.	This is perfect, as it still allows a more general course, but also provides for teaching some options with more detailed content. This allows those students interested in multiple sciences to take different courses and get a broader experience of science, while still giving plenty of options for a single science course for students who want a less comprehensive experience. In short, it provides the flexibility necessary to truly offer students a choice. If this is implemented, there would need to be flexibility in which aspects of the contextual strands are offered. For example, it is unrealistic to try and jam all biological	This has too many standards and is too similar to what we currently have.	2020-06-27 08:07:26	ANON-FDGN-6QTA-U	2020-06-27 08:07:26
[No response]	Option B	Gives students a broad base before specializing for L2 & L3. Not too specific.				2020-06-27 08:22:56	ANON-FDGN-6QTW-H	2020-06-27 08:22:56

[No response]	Option C	This option allows a mixture of standards giving flexibility to students to choose their learning pathways for the myriad of options available for educational and vocational choices available later on. This option also allows cultural diversity in how science is learned and assessed. This option is far more accessible for students on all levels. Well done MOE!	This option is incredibly broad. This allows a diversity of learning options that can be used for a myriad of learning opportunities in science. The disadvantages though are that the options will be very difficult to level assess, not provide any meaningful indication of a students science content, not indicate a students ability to be able to cope with a Level 2 science., disadvantage students whose schools do not look at the continuity of science education effectively ending their science career. The high dependency on literacy will disadvantage students, if previous examples are to be still developed, L2 literacy skills are required. The lack of numeracy is a concern as 'all' science requires the manipulation of	This option is a forced option, in that it is trying to fit different strands together but until assessment methods and course selection is set out, we have no idea whether it will work. So it is impossible to comment fully. It still has the problems stated above concerning General Science providing no meaningful foundation other then to get students credits. As stated before it also disadvantages students with low literacy and fails to deal with numeracy in science. Assessment of General Science under the format given before will be impossible to standardise.	This is the preferred option, allowing for all the criteria to be satisfied whilst providing a diverse option choice for students so that they can map their learning pathways effectively to vocational courses or Level 2. The options are clear and will allow future employers or educational institutions to see the 'foundation' gained in science. The options available allow for culturally sensitive pedagogy and a diverse and useful set of learning options.	2020-06-27 08:56:52	ANON-FDGN-6QTM-7	2020-06-27 08:56:52

[No response]	Option C	The ability for teachers to be able to give a more well rounded approach into science ready for when students take the leap into level 2 and 3. We do not need them to be learning how to write a report but rather developing their curiosity in science.				2020-06-27 09:01:27	ANON-FDGN-6QTR-C	2020-06-27 09:01:27
[No response]	Option C	Specialisation is required to prepare students for level 2: in physics, a rigorous training using correct vocabulary, calculations and problem solving is required for students to have any chance of doing well. Additionally, having more standards allows students to learn content in depth, rather than surface level understanding.	Negatives: too vague, no specialisation within subjects which disadvantages pupils who want to do one particular science. Would need intense training for non subject specialists to be able to effectively teach the content.	Physics and chemistry require different specialisations and very different ways of thinking. Additionally they do not necessarily fit students' desired career pathways: bio and chemistry for medicine etc. Physics and earth and space science seems a better fit. Negatives; still insufficient specialisation in particular topics to gain fluency or confidence.	Positives: effectively splits the subjects which allows students to link parts of each of physics, Chem and bio together, and choose subjects to specialise in. Standards would have to be carefully designed to cover maximum parts of the subject as possible.	2020-06-27 09:05:56	ANON-FDGN-6QT8-J	2020-06-27 09:05:56

[No response]	Option B	It gives more flexibility of options to those who do not want a straight nos course. Kind of a middle ground allowing teachers who are more conservative in their approach to have some familiarity.	I think this gives flexibility and would allow schools to develop learning programmes that fitted their learners BUT I think for some schools/teachers a lot of PLD and support would be needed and given past history I doubt this would be forthcoming or well and equitably delivered. I thought the SEGs were there to develop the standards I did not know that they would have a role in ensuring the teaching and learning of the stds was effective. How is this going to happen?	I think this is an intermediate step between what is there at present and what has been suggested. I think it may give those who are worried about a big change more comfort and familiarity. I imagine schools who want to keep doing whether are doing and teaching separate physics chem and bio would for example simply do the two physics had and then contextualize two of the general stds as physics. If NCEA is truly flexible do we need it all to be place in what looks like a fixed grid?	Lots of choice of stds. Looking at usage of present stds are these all needed? Will appeal to those who do not want any change.	2020-06-27 09:06:57	ANON-FDGN-6QMP-3	2020-06-27 09:06:57

[No response]	Option A		Broad based education to year 11	Too early specialism Also, are you them going to bring back all the other specialisms that were culled - Media Classics etc	Too early specialism	2020-06-27 09:14:42	ANON-FDGN-6QMN-1	2020-06-27 09:13:27
[No response]	Option C	The sciences are additive curriculum were a large knowledge base is the foundation of further success. Provision for specialized science enables this.	No. Option A fails to provide a foundational qualification. It is narrow and diluted the subject and will create deficits for leaners. The jump to level 2 and level 3 will be larger and student outcomes will be disadvantaged.	No. Option B fails to provide a foundational qualification. It is narrow and diluted the subject and will create deficits for leaners. The jump to level 2 and level 3 will be larger and student outcomes will be disadvantaged. Biology and Earth and space are significantly different and should not be conflated.	Yes - but this is a case of being the least bad. It retains subjects speciliastion in the sciences- which is critical to success at l2 and l3 but the lack of specific detail relating to standards make fair review difficult.	2020-06-27 09:15:39	ANON-FDGN-6QMS-6	2020-06-27 09:15:39

[No response]	Option C	This allows students who are interested in science to follow a general path but also allows for those who have a focused interest to follow a specific pathway - this will be beneficial for those going on to tertiary and help to provide a scaffolded pathway into levels 2 and 3	Yes this allows for a broader qualification at level 1 , privides a taste of general science for those interested and an entry point for science at keveks 2&3; and would potentially make the teaching of science in smaller schools who have teachers teaching subjects without specialist qualifications. This may handicap students who have a specific interest in one of the strands though and in turn lead to disengagement.	This provides students more choice - we should not limit their choices especially at level 1 because we want them to 'taste' a wide range so that they can know what they are actually interested in. Bio and Earth / Space Science work well as do Chem and Physics	This is my preferred option as it provides more choice for students.	2020-06-27 09:27:19	ANON-FDGN-6QMD-Q	2020-06-27 09:27:19
[No response]	Option B	By generalising level 1 it makes a already hard transition into level 2 even harder. With out the option to specialization we disadvantage students. Our chemistry and physics will be more negatively affected	This qualification is too general and doesn't help students in the job hunt or the real world. If we are too general we end up with student how really know nothing. I cant see how this will help us more effectively teach. Teachers are actually competent. They want the best for their students. This is showing a low trust model of management	With some specialization we can personalize it to the needs of the student. We trust our teachers in making decisions that benefit their students.		2020-06-27 09:42:29	ANON-FDGN-6QMY-C	2020-06-27 09:42:29

[No response]	Option C	Provides more opportunities for students with availability of subjects and specializations.	vague. teachers across the country have different predispositions and capabilities. expecting them to teach an interdisciplinary approach may be too advanced. there will need to be a country-wide Pd offered to teachers.			2020-06-27 10:05:20	ANON-FDGN-6QMU-8	2020-06-27 10:05:20
[No response]	Option C	Allows the greatest flexibility, while incorporating the new focus on NoS and assessment structure.	This is too vague and is hard to see how it would flow on to higher levels. It does meet the vision. To support schools, ensure clarity now about how the level 2 standards are to change, so that courses can be developed effectively without the need to change in the short term.	Arbitrary linking of subject areas.	This allows a lot of flexibility of course design to meet the needs of all school students. For real flexibility, it would be helpful to be able to select internals and externals from different strands.	2020-06-27 10:12:02	ANON-FDGN-6QM2-5	2020-06-27 10:12:02

[No response]	Option C	I work at a large College with many streams of classes, taking different standards tailored to the students. Having standards based on the contextual strands is important. A framework like option C would give us as a department much greater autonomy to select combinations of standards appropriate for our students. On a personal note, as the teacher in charge of the Applied Science course (tailored for low ability students), I am still not thrilled about the 50% internal, 50% external requirement. Currently we pick 4 standards from across the Sciences and work through them in an "applications to my future" type of way. They won't handle these new types of externals well (yes, I know they are not exam externals).	I do not like this subject. Even though all the contextual strands are supposed to be included, it would be too easy to make the course biology-centred and drop off the other worlds. Planet Earth and beyond gets little enough showing as it is, and would likely disappear entirely from the teaching in this option. Or: Is the ministry just going to tell us that we are wrong and that this is a good plan, then chuck a few resources at us and tell us to get planning? If this option is implemented, I think I will see massive amounts of failure int he first year, as we simply don't have time in our day to reinvent the wheel to such a degree, for each of our unique groups of students.	Is there any point? May as well go with option C and give us full scope to design our courses.	Of all the possibilities, I am most in favour of this. Departments will have the greatest scope to plan for our courses, and differentiate based on the various types of classes and combinations of students. I think this would also give us the greatest ability to seize what was already working really well in our Science classes and bring it into the new structure of the course.	2020-06-27 10:23:04	ANON-FDGN-6QMT-7	2020-06-27 10:23:04

[No response]	Option C	Condensing the wide variety of Sciences into only 4 standards will severely minimize the learning opportunities in this subject area (Option A). Option B will result in ESS only being explored in contexts relating to Biology, whilst the aspects of ESS that tie in better with Physics or Chemistry (Astronomy, Climate Change) won't fit anywhere any may be left out altogether. Option C allows for schools and students to build highly versatile curriculum that suits the needs and interests of their students, allowing for some L1 courses to be more specialised and others more general, so that all students will gain a foundational understanding of the Sciences without holding anyone back.	It does not meet criteria 2 - as it would not support the inclusions of IMPORTANT and RICH learning. Important material for some students mean foundational understanding in both Chemistry and Physics, so that they are not disadvantaged studying these subjects at higher levels. Rich learning cannot happen when there are only 4 potential Science standards. It is a joke to imagine that schools will teach important Science concepts that are not assessed, as educators are under severe pressure from students, parents, senior management, and the government, to coach their students to pass. Anything not worth credits is seen as a waste of time by everyone except the people trying to minimise the opportunities for credits... It does also does not	Pros: More opportunity for students who want to start specialising earlier to do so, which means they will have less trouble coping with L2/3 in their specialist Science subjects, more opportunity for creating diverse and individualized curricula to suit students needs. Cons: Combining Phys/Chem and Bio/ESS doesn't always make sense as they are all separate areas of Science for good reason, ESS will end up falling to the wayside in favour of a Biology focus due to the popularity and better understanding of hat subject (amongst teachers AND students), this in no way caters for students who enjoy	This is the broadest, more robust approach that allows for a multitude of different learning pathways that will support individual learners by utilising local resources. Removing options will only restrict what will be taught and how, forcing students interested in Science down a more narrow pathway of learning that will almost certainly not suit them all. At least with more options (of Achievement Standards) for teachers/schools to choose from, we will be able to craft Sciece curricula to better suit our students' needs.	2020-06-27 10:27:09	ANON-FDGN-6QM4-7	2020-06-27 10:27:09

[No response]	Option C	More options for standards means more flexibility in designing courses that suit students. Also, I imagine this format will mean that standards will be more contextualised to a science strand, resulting in more specific guidelines of what the assessment should look like or include. This would make things less vague for teachers while still offering flexibility in the way assessments are delivered.	Positives: Less standards to become familiar with. Negatives: There is a risk that assessment details will be vague and open to interpretation since they need to be flexible over the range of science strands. Coherent and robust pathways into NCEA level 2 will be more difficult to ascertain with the removal of strand-specific standards. Unless there is some sort of tag to go with each standard identifying the strand context that it was assessed within, it will be difficult to know what kind of background knowledge students will have in a particular stand before then begin studying it at level 2. For example, one student may have completed L1 standards primarily through the living world context but choose L2 physics as a subject, going on their record of	Better than Option A as it gives as the standards students have achieved give a more detailed picture of what the individual knows within the broader Science subject. However, more new standards to become familiar with (short term issue)	This option provides the most informative information about what students know and are capable of - which is the purpose of qualification.	2020-06-27 10:38:35	ANON-FDGN-6QMJ-W	2020-06-27 10:38:24

[No response]	Option C	Option B looks like you've forced some subjects together in a weird way just to make it look like another option. Option A suggested that all assessment including external assessment would be long form written. This is not how most science is. Also, the nature of science assessments require higher level thinking which students can't access without the subject matter to build on. If anything, you should be making the Level 1 more about content and Levels 2 and 3 about making up wishy washy arguments based on it. Option C gives more opportunity to tailor courses to suit students and their interests. It will give more directed learning and less, 'write a report about something that you feel like'. Most level 1 students could spend a	It is far too broad. All assessment is extended writing, which will exclude many students who enjoy science already. This will see a steady drop in high quality physicists and engineers as they are turned off by the writing aspect of science in Level 1.	I would've thought physics and ESS would have the most cross links in the current situation. Lenses used for observing the universe etc. However. It feels forced jamming them together. Why not just have Science one subject with more standards?	More standards means more opportunity to cater courses to classes and individuals. I see no reason to have them in 5 subjects. Just have them all called science and give us a lot of standards to work with.	2020-06-27 10:58:08	ANON-FDGN-6QMQ-4	2020-06-27 10:58:08

[No response]	Option C	This option allows for specialisation of the sciences within level one.This option allows for level one to have a general certificate for general science students and it does not come at the expense of academically focused students looking to go onto level two subjects.	This option allowing for students to get in level one son certificate. Does not Support academically focused students. The standards as outlined will have difficulty in student authenticity and are not valid assessments. Students moving in the senior subjects at level two from the proposed course as outlined an option and will struggle with the jump into the new curriculum because they would like background knowledge required for the subject. As a science teacher in reviewing the current proposal for option a am wondering whether or not we should continue offering level one science should option a come in. It does nothing to support academically focused students and as some schools are already not offering level one within their program this gives a reason not to offer the level one science as	Not my preferred option. While it allows for specialisation of two subjects why does to it comes at the expense to those students wishing to do three subjects in the following year.	This is my preferred option propose Sofer. While there are more standards being offered I will still like to see the nature of the standards how the students will be assessed and more specifically will this address the content curriculum basis required for students to move into specialist senior subjects in level two. If the assessments offered for option C are very similar to that those assessments proposed an option A it still wouldn't be beneficial for academically focused students.	2020-06-27 10:58:16	ANON-FDGN-6QM6-9	2020-06-27 10:58:16

[No response]	Option C				Yes it would meet the 7 criteria. It would also give more flexibility to schools to develop meaningful subjects that suit their learners.	2020-06-27 11:18:21	ANON-FDGN-6QM7-A	2020-06-27 11:18:21

[No response]	Option C	During year 10 most students know which aspect of science they like or dislike. This option allows for the greatest variety of options for the students. The school will be able to put together the Science course or courses to best suit their students. An extra year of learning in a specific science will allow students to have a greater understanding by the time they reach year 13.	This option allows for criteria 1 and 6, it does not allow for any of the other criteria. One of the biggest issues with the standards as they were proposed is that there is no context or guideline for the level of the contexts that could be made. Criteria 2 can not be met in any robust and meaningful way. Also, the method of assessing the external standards was unclear and pathic in the quantity of content that could be assessed. 600 or 700 words is far too short. The proposed method of assessment is also biased against boys. I can not see how this meets criteria 7 in any way. We have NO idea what is intended for Levels 2 or 3 in any of the science subject areas, therefore, we have no way of saying how well criteria	Other combinations: Physics and Chemistry is a good combination as is Biology and Earth and Space Science. Other options, in order of best to least popular, could be Physics and Earth and Space Science, Biology and Chemistry, Biology and Physics, Chemistry and Earth and Space Science. Having all these options available would give all schools the ability to select which subject combinations to teach from year to year to meet the needs of the current cohort. This will ensure that all schools can teach science effectively. This option is still limited in not allowing students	This does not meet criteria 1, however, this criteria is necessarily the best approach as it fits all the other criteria the most of any of the options. The vast majority of students who are going to pursue science further already know which field(s) of science they like and dislike. By having more options for the students to choose from it allows the students and schools to have the greatest flexibility in the courses that are taken/offered. This will allow the school to meet the needs of their community best. The school will be able to offer as broad or specific science as their community wishes. We will still need to	2020-06-27 12:08:55	ANON-FDGN-6QMV-9	2020-06-27 12:08:55

[No response]	Option B	This allows a range of courses to cater for students interests and needs wholr still ensuring that each course would have a strong foundation in a range of sciences				2020-06-27 12:10:34	ANON-FDGN-6QM9-C	2020-06-27 12:10:34

[No response]	Option B	This option gives scope for students to become science literate citizens through the proposed general science subject. This option addresses widespread concerns about the opportunities for NCEA level 1 students to develop contextual knowledge for further study at NCEA level 2 - 3. The Physical and Natural science pathways are excellent pathways to keep broader knowledge in level one. They make it possible for students to progress via coherent and robust pathways into the NCEA level 2 specialisations. In particular, any subject pathways in the model of option B will give more students access to Earth and Space science standards. In my opinion, learning about Earth and Space is currently a neglected pathway in NCEA levels 1, 2 and 3. This is a significant positive	Option A gives strong flexibility for delivering broader foundational science curriculum. This option is excellent for supporting local curricula and individualised learning. This option will not adequately provide coherent and robust pathways into NCEA Level 2 and further study or training. If this approach is finalised, contextual guidelines for each generic standard should be provided. The guidelines will need to specify what science learning content is required to support a robust pathway into level 2 specialisations. These guidelines must ensure that students are able to enter specialised NCEA level 2 courses with enough prior knowledge to build meaningful connections with new learning.	The Physical and Natural science pathways are excellent pathways to keep broader knowledge in level one. They make it possible for students to progress via coherent and robust pathways into the NCEA level 2 specialisations. In particular, the Natural science subject pathway will give more students access to Earth and Space science standards. In my opinion, learning about Earth and Space is currently a neglected pathway in the NCEA. This is a significant positive feature of option B. An alternative subject matrix configuration to consider is placing placing Earth and Space science together with	I believe this option does not meet the vision of NCEA Level 1 as a broader, foundational qualification.	2020-06-27 12:14:04	ANON-FDGN-6QMH-U	2020-06-27 12:14:04

[No response]	Option B	It offers more flexibility than option A, but is less complex than C to administer. We need to be looking at progression to L2 study, but need to make sure that pupils who are heading into tertiary science subjects are well prepared for university, but aren't holding the other pupils 'ransom' by including lots of content heavy L1 to prepare for L2, to prepare for L3. We need to ensure that all pupils have a chance to become scientifically literate and digitally fluent, but not necessarily 'expert' physicists by L1.	It's okay, but there is a bit too much shoe - horning of stuff in to make it fit. It doesn't seem to 'flow' naturally. The positives are that it is simple, negatives it doesn't offer enough. I looked through the proposals and it didn't quite gel.			2020-06-27 12:14:50	ANON-FDGN-6QMX-B	2020-06-27 12:14:50

[No response]	Option C	It allows schools to provide flexibility of subjects for the students. Option A is too restrictive and the standards as presented appear to be a journalism of science course and does not cater towards a broad range of abilities. Option B would provide more options but the grouping of the specific subjects does will not appeal to many students, especially the bio and ess.	I think that this course as currently designed does not provide what we need for our students. It is far too much of a social take on science with way too much focused on science reporting rather than science itself. This approach will disadvantage a broad range of students especially lower ability students and students whose literacy is not as strong. It also does not provide a good basis for further study in science.	I think that Chem and Bio would fit better with Phy and Ess as the other group. This however does not give schools flexibility. Could there be the option of half courses eg a half course of physics that schools could then pair together depending on what they felt was most appropriate.	This provides good flexibility and gives a good scientific grounding in subjects.	2020-06-27 12:17:33	ANON-FDGN-6QME-R	2020-06-27 12:17:33
[No response]	Option B	I think it is important that there is some diversity in the options for assessment (bio, Chem etc) but too much doesn't support a focus on the nature of science which at this level is a priority.	It is definitely broad. Perhaps not offering enough diversity for students with different needs.		Too many options. This allows teachers to move away from the nature of science focus.	2020-06-27 12:18:13	ANON-FDGN-6QMB-N	2020-06-27 12:18:13
[No response]	Option C	More options in designing your course. Option A limits professional choice.	No positives. Year 9 and 10 provides the broader foundation. This approach could disincentivise specialist Science graduates from going teaching.			2020-06-27 12:40:02	ANON-FDGN-6QMF-S	2020-06-27 12:40:02

[No response]	Option C	Would enable schools to cater for differing needs and abilities of students.				2020-06-27 13:18:19	ANON-FDGN-6QM5-8	2020-06-27 13:18:19
[No response]	Option B	Allows for a greater range of standards without siloing into chem, bio, physics,. etc.	I do not believe it has a broad enough scope, and rather instead seems to turn the subject into social science. Beyond that, it also makes it a bit harder for the development of crosscurricular courses, because it means you can only have one single science-involved course in the school without having an overlap (unless it is being considered that perhaps students can, for such broad standards, get the credits available more than once).	This one works well as it balances choice with cross-curricular relevance. As for possible combinations of subjects, don't combine them in terms of bio, chem, physics and earth/space, but rather on human-centric science (man-made things, human biology, etc) and natural things (plants, geology, celestial mechanics, etc). Even then, you can combine them, while still having the same range of standards. Less siloing should not equal fewer standards.	This one falls too much into siloing of subjects, a concept which, among the sciences, only really exists in high schools (perhaps among singular papers in university courses, but they aren't siloed across the board). This then creates a false image for the students that suggests you only do one science at a time, when, realistically, any science is not constrained to a single field of knowledge.	2020-06-27 13:22:39	ANON-FDGN-6QM1-4	2020-06-27 13:22:39

[No response]	Option B	Option B allows a broad science course to be offered with enough flexibility for course variety depending on student interest and teacher expertise. It will also encourage the Nature if Science standards to be chosen.	Option A is too narrow. I know it can be taught through all strands but until the details are seen, it is hard to judge whether enough flexibility can be brought into programmes. Resources to give examples of teaching and assessment need to be developed as well as nationwide workshops to discuss each standard.	Comments above why I prefer this option. Implementation from MOE would need to be the same regardless of which option is chosen: resourcing and workshops Chemistry and Biology Physics and Earth and Space Science	Option C will cause specialisation of 'pure' physics, biology etc. in Science too early, it isn't necessary. Teachers get too precious sometimes! Nature of Science will be lost with all the other standards offered and I think it's important these standards are the focus of science learning.	2020-06-27 13:31:01	ANON-FDGN-6QMC-P	2020-06-27 13:31:01
[No response]	Option C					2020-06-27 13:39:31	ANON-FDGN-6QMW-A	2020-06-27 13:39:31
[No response]	Option C	Allows students and staff to create more flexible learning through using specialised and generalised assessment opportunities				2020-06-27 13:40:47	ANON-FDGN-6QMM-Z	2020-06-27 13:40:47

[No response]	Option C	Students actually stand a chamce of developing the specialist knowledge they need in order to access the lofty ideals of the science curriculum!	Massive variation in quality and quantoty of science taught at different schools across Aotearoa NZ leading to poorer quality outcomes for grohps of socially amd financially disadvantaged learners is the SINGLE biggest drawback. Ome strong positive is that the assessment tasks have had the content ripped free - allowing them to be assessment only. Now we need a well written, well designed, spiralling, nationally mandated perscription.	Scrub earth amd space sciences, they are literally applied physics, chemistry and biology anyway and could provide avenues to contextualise other subjects. This would allow decent focus on Physics, Chemstry and Biology Contexts. Physics: energy, motion, forces, waves, astronomy, heat transfer, atomic physics. These are the most useful concepts in the modern world in physics. Chemistry: atomic structure & bonding, reaction theory (rates & types) biochemistry & organic chemistry, families of chemicals, pH Biology: ecological theory, cell theory, health & disease (including	Ditch Earth & Space science. Having taught this subject for the last 5 years at years 9&10, levels 1-3, there is nothing theoretical in them that isnt simpky chemistry, physics or biology in applied situations. Or keep them but create medical science, agricultural science, horticultural science, forensic science, engineering science, sports science and other applied physics, chemistr and biology subjects. The problem with these three listed approaches is, that with every school able to decide which science the akonga will be exposed to, then what exactly is this qualificatoon a foundation for?	2020-06-27 14:01:05	ANON-FDGN-6QMR-5	2020-06-27 14:01:05

[No response]	Option C	Our community very much values and cherishes the ability select individual sciences at Y11 and were particularly horrified (as were we as educators) that they were being excluded from that opportunity. Option C is the only option that should be considered. Every other option is limiting choice forcing schools into a very narrow path. We feel as if it would significantly lower our Sciences numbers at a time where we really need to be encouraging students into this course of study.	Positives - No positives what so ever for our school. Negatives it would have horrific flow through effects for our senior Sciences numbers and preparation. Please do not continue with this!!! If this approach is finalised, it would be an absolute kick in the guts for Science teachers.	Positives - Well it isn't quite as much of a dog as option 1. Negatives - again it is limiting choice, the y11 individual sciences were not broken, they had a number of really good standards and we were able to construct varied and meaningful courses to suit our many and varied students. The best combinations would be 1) Chemistry and Chemistry 2) Biology and Biology 3 Physics and Physics	Positives, these are the subjects that our students crave! It meets the NCEA vision (you could probably cull a couple of standards if required) Please do everything you can to maintain these subjects. They have completely misread the public and teaching staff by try to change this. It wasn't broken, it was working very effectively so I dont understand why they need to tinker.	2020-06-27 14:25:04	ANON-FDGN-6QM8-B	2020-06-27 14:25:04
[No response]	Option B	Move away from external exams.. They are not needed for level 1.				2020-06-27 14:28:34	ANON-FDGN-6QNP-4	2020-06-27 14:28:34
[No response]	Option A	Give kids a taste of it all. After this they can specialise	Keep Science broad - allow schools to develop their own strengths in areas with resources they have - don't be so specific or rigid.	Keep it simple	Too complicated	2020-06-27 14:33:05	ANON-FDGN-6QNN-2	2020-06-27 14:33:05

[No response]	Option B	It allows some flexibility and for us to create more than one course.	The focus on NoS is good and it allows us to teach in context but would not allow for our school to continue to have multiple semesterised L1 courses that students could opt in to because they would all have to have the same standards so there wouldnt be enough credits available for students.	This allows more flexibility and we would be able to continue to to have a range of courses on offer where students can take more than one, but keeps the focus broad. Could make the combinations bio-chem, and physical science (Phys- ESS). If other subjects are available like this, I think it is important that any course should contain a minimum of 1 NoS standard.	This would allow a huge range of choices for course which would be nice, but is essentially going to create the status quo. If this happened NoS standards should be a compulsory inclusion.	2020-06-27 15:42:31	ANON-FDGN-6QNS-7	2020-06-27 15:42:31

[No response]	Option A	I believe this option provides opportunities for all in an equitable way. Dividing into pure options can also create greater risk of a Science A and Science B pathway. If we want to ensure truly equitable access for girls, Maori, Pacific Learners or students with particular learning needs, then a general programme at Level 1 has many advantages. A general programme also acknowledges that students learn and progress at very different rates in the early years of high school. Most Year 10's will choose their Level 1 options in August. Many students develop a great deal over the second half of Year 10 and during Year 11. A general science programme gives more students the opportunity to be 'ready' for Physics, Chem and Bio by the	Offering 'pure sciences' can channel students into a very 'science heavy' programme, very early in their school career. I believe a general programme meets the seven criteria, particularly the vision for Level 1 to be a broad qualification, and also our Treaty obligations. Pure Sciences are a 'westernised' construct, whereas general science gives excellent opportunities for cultural responsiveness. In terms of teaching effectively, the simple answer is to support schools and teachers with 'the basics' - what knowledge / skills / understandings are important, and which pedagogies will best support the teaching of that content / skills. The focus should be on learning, not assessing. I believe that one of the External Assessments	Whilst some schools offer 6 subjects at Level 1, many offer 5. For 2 of those 5 to be Science is too much specialisation too soon. The advantage of this option is it gives Science specialist students more Science at Level 1, but we would be unlikely to let a student do 2 Art subjects, or 2 Technology, or 2 Health & PE subjects - so I also believe it is too soon to do 2 Sciences. I believe this option would be to the detriment of Maori / Pasifika / students with special learning needs. These groups find it very challenging to access the pure sciences already and starting those pathways in Level 1	This is much to much specialisation much to early. Students in Year 10 choose their options in August. If they don't choose Biology for Level 1, but decide at the start of Year 12 that they want to do nursing, it will be challenging for them to change pathway. Equally if they decide in Year 12 to do engineering, will they be able to join Level 2 Physics?	2020-06-27 15:43:22	ANON-FDGN-6QND-R	2020-06-27 15:43:22

[No response]	Option C	It gives the kids the best chance of following a science as a career in the future. The only good thing about these proposed changes are to the investigation; rather than being a 'one attempt', a more comprehensive wide ranging approach with multiple opportunities to investigate in different ways is much more scientific. The push to Nature of Science at the expense of subject specific content continues to ignore the fact that Science is a subject that is based on solid understanding of facts. In fact, this whole reimagining of the curriculum fails to address one of the seven criteria - to "support(s) coherent and robust pathways into NCEA Level 2 and further study or training". Skills are there to support the	It completely ignores the fact that "Science" is not one subject. It's like saying French, Korean and Maori are all the same. Each of the sciences has its own essential content and skills. This appears to be consistently ignored. Universities will increase their course lengths to overcome the inadequacies of the student knowledge. The detailed proposals published to explain Option A were awful. They were poorly thought out in terms of a well rounded science curriculum and had limited idea about how complex the ideas were - with sophisticated Level 3 thinking and understanding required in several places. This concerns me with all the future publications. The best thinking was around ESS ideas - it read like there was a loud geologist in the room who swayed the examples at the expense	Well, it's better than Option A, but I am disturbed by the final bullet point. Why is the "Expert Subject Panel" asking me if certain combinations fit together better than the proposed combination? Either the panel knows the answer and is making a pretence of the "consultation process" or the Experts are too expert in their own field to see the bigger picture. In which case they ought not to be on an expert educational panel. Pretending that there is a genuine interest in what I think, yes there are some areas that naturally fit together. Biochemistry overlaps with cell processes and	Option C would give the best opportunity for students to progress to higher level courses as there are better opportunities for subject content to be delivered more comprehensively. You are more likely to get buy in from traditional schools with this approach as they will see the opportunity to deliver their current single science offerings. The five subjects means that there should be more ideas published around what the Ministry / Subject groups / NCEA are expecting to see around evidence to show achievement at different levels. This will make it easier to be consistent. (Currently, when we work off the current standards	2020-06-27 15:48:22	ANON-FDGN-6QMZ-D	2020-06-27 12:33:31

[No response]	Option C	Student agency, enabling pathways for all learners, facilitating choices for learners to pursue their passion and deepen understanding	To broad, students may be ill-prepared for learning at the next level, Assessments too heavily weighted with credits	All disciplines are highly specific but still can be integrated without blending them in this model. Learning can been deeper and more meaningful without combining subjects in this way.	Very positive - students passions and strengths are able to be accommodated with agency at the fore.	2020-06-27 15:48:20	ANON-FDGN-6QNY-D	2020-06-27 15:48:20
[No response]	Option C	Allows courses to be tailored to regional industries, eg oil and gas, agriculture; allows courses to be tailored to teachers areas of expertise, eg chemistry, biology, agriculture				2020-06-27 15:49:32	ANON-FDGN-6QNU-9	2020-06-27 15:49:32

[No response]	Option C	Allows me to start building the knowledge base for students who will continue with a specific discipline. I do not like the current NOS proposals that are too general and will lead to a bigger gap between schools in NZ. Also, if we have decreased the number of stds then we can at least be up and running more quickly as it will be a matter of cutting and pasting the parts that work best. The current 3 science externals are very good and should actually be kept or tweaked at most.	Struggling with positives. Negatives: will create group think as each teacher uses the exemplars- will see 1000s of the same results; rural students, poorly supported students/schools will go backwards; no specific set of learning objectives; will kill science for international students; too much writing- will hamper the boys. We should simplify yes but why reinvent the wheel and throw away so much that actually worked. NOS is boring by itself. Without structure (learning objectives) this will just be geography lessons.	Why can't we call it what it is: chemistry, biology and physics. Has worked well for 100 years. The current science 3 are more than enough. If teachers want to go beyond this and teach some of the otehr stds then that could be part of the internal lot? Agree there is currently too much.	Addressed above. If we try and force subjects together then it will be mish-mash. The developers will wax lyrical about the theme that holds stuff together but why? Why force this? It is such a logical distinction to have the 3-4 main sciences You have to have knowledge before you ask students to write about things. Too much writing in the first option. 2nd is an attempt at an inbetween option but this is not needed. Just remove the extra stds that and that will decrease the overall number.	2020-06-27 15:53:36	ANON-FDGN-6QN2-6	2020-06-27 15:53:36

[No response]	Option B	The Nature of Science (NoS) package by itself is both unworkable and unsound in many ways, previously expressed by many in the survey conducted over the summer of 2019 and 2020. The students who continue with the study of Level 2 biology, chemistry, physics, or earth & space science NEED assessed content during their Level 1 course. To not include that (as option A) would be a tragic error and cannot be glossed over as "we'll teach it but just not assess it" as the flawed response to that survey attempted to explain. Option B allows for schools to craft various courses that fit the needs of various student populations inside that school. This could include 1 or 2 of the NoS science band if that is deemed appropriate. This fits	There are no positives to option A. There is a lack of understanding of how students learn and what must be included in any given course in order to meet multiple criteria for any Year 11 course to be considered successful. Option A, to be blunt, is horrendous. As many of the responses from the previous survey conducted over the summer of 2019/2020 show. Neither the Ministry nor the Subject Expert Group could do anything substantive to alter the flawed nature of only assessing Nature of Science aspects at Year 11. It should never have been attempted and in fact, people on the science expert group were literally lead to believe that other Year 11 subjects would run in parallel with this NoS strand (such as Option B or C above).	Yes, Option B meets the 7 criteria easily. This is an obvious fact to anyone who asks around to see what is currently being done at Yr11 in schools up and down NZ. And no, it does not break the "broad and foundational qualification" philosophy as Yr 11 will continue to be adaptable and offer various pathways while not shutting doors to Yr12 study nor making the hurdle of Yr11 to Yr12 too difficult (as Option A does). The detail of what must be included and what is left up to the school to adapt in the 8 unwritten standards will be critical to Option B's success though. All 4 subject expert groups will need to	The positives of Option C would be yet more choice than Option B for schools to craft courses... but could easily go too far and go against the MoE edict of a broader and foundational qualification / Year 11 course.	2020-06-27 16:32:22	ANON-FDGN-6QN3-7	2020-06-27 16:30:19

[No response]	Option C	Gives students a broad range of sciences from which they can then make choices as to what they would like to continue on with into levels 2, 3 and on into tertiary study.				2020-06-27 17:04:10	ANON-FDGN-6QNT-8	2020-06-27 17:04:10
[No response]	Option C	It would give us a broader range of options to fit with student need and interest				2020-06-27 17:45:57	ANON-FDGN-6QNJ-X	2020-06-27 17:45:57
[No response]	Option C	Content matters. You can't teach the same standard twice in different contexts.	It's a stupid option don't do this please.	This is a less terrible option but please just let us have all the specialised science subjects.	This option. Choose this option.	2020-06-27 17:59:22	ANON-FDGN-6QNQ-5	2020-06-27 17:59:22
[No response]	Option B	More flexibility for contexts for many non forward thinking teachers. This option is a happy medium so should please everyone	Like this but there would be too much of needed for all the old school teachers aka moaners out there.	Many are combining standards already so this could operate with a similar contextualized approach which shouldn't be too difficult even for naysayers	Barely any change. Will be too content driven and not meet the intent of the NoS strand	2020-06-27 18:24:11	ANON-FDGN-6QN6-A	2020-06-27 18:24:11

[No response]	Option C	this gives the students and the school the widest range of topics to choose from and has some (I hope) real science content which forms a better background for scince at level 2, 3 and beyond	positive - can't see any negatives - not enough real examples that would stimulate students and motive the lower achievers. too much focus on report writing which students are not too good at or enjoy, teachers would be pulled in many directions if students choose different contents. Teachers having to mark the internals and teach students how to write reports etc adds to their workload. Unsure of how to do these new standards as not much information has been given, so teachers will have to develop these, again adding to their workload. We need a wide range of examplars that are able to be adapted but they must include detail not just be very generic	positives - some science specific stuff e.g. chem, physic etc, which is more like what the students in the past have done I feel they need so basic chem - atomic structure, different types of reactions, acids and bases, physics - mechanics, electricity, waves and biology - genetcis, microbes maybe plants and animals (digestion) this all depends on what the internals are like e.g. practical investigations, progects and exams. Hard to comment as haven't seen detail. Whatever you do it needs to ehlp prepare them for higher level sciences and give them some general life science background	as above but more of a range of what the school can choose and help prepare for higher level science as many of our students go on to do science at higher levels	2020-06-27 18:24:29	ANON-FDGN-6QN7-B	2020-06-27 18:24:29
[No response]	Option C	We still need specialised science content at level 1 to give the students a better base to be well prepared for level 2 specialised science subjects.				2020-06-27 18:28:18	ANON-FDGN-6QNG-U	2020-06-27 18:28:18

[No response]	Option C	Science is a massive subject with many sub-disciplines. Limiting to only 4 standards for a year level without a 'nod' to the many specialist science subjects doesn't show value to the student of the many different areas of Science they could study in the future. Having just one option means that teachers will generalise too much and yes, it is nature of science rather than specialist content, but the reality is that regardless of all the skills that a 21st century learner needs, there are a number of basic understandings that science students need. This is a chance for schools to design the standards around some of these fundamental understandings to prepare for senior sciences.	I find already that the General Science course makes it very difficult for students to specialise at Level 2 in terms of understanding, let alone going to the present proposal which appears to dilute the understanding even more. Having said that, I have just worked with L2 Chemistry students who had done rates of reaction for both a 1.1 and the 1.5 external and still answered a test question badly. So you could argue that revisiting content doesn't mean they remember it from the past anyway. Some students already know they love Science and may lack options at Level 1 if there is not the chance to do a little specialisation. I understand it meets a broader foundation but.... some teachers are rubbish and have not moved their thinking around education and what a 21st century learner needs because	Chemistry fits with most options because it complements all the other sciences. I go back to my first point - there are too many sub disciplines in Science to leave to the last two years of schooling. We could start diversifying earlier and following passions of students through years 10 and 11 and they could be doing standards for two years if they are ready for it OR students who will struggle at L2 but enjoy science could continue to do more L1 standards.	From my above comments, I obviously see positives in this approach. If you are going to remove History and Geography and Economics as social sciences and just have 4 general standards, then you could that to Science as well but if you are are keeping those subjects separated, then the very least you can do is maintain the specialist sciences because there are lot more sub disciplines in a BSc than there are in a BA.	2020-06-27 18:42:52	ANON-FDGN-6QNV-A	2020-06-27 18:42:52
[No response]	Option A	Because It gives you a lot more time to focus on one thing rather than a whole lot of them at once and it is very overwhelming having multiple.				2020-06-27 18:45:15	ANON-FDGN-6QN9-D	2020-06-27 18:45:15

[No response]	Option C	The Nature of science is investigated extensively in years 9 and 10. Having all of Year 11 as nature of science with no communication or consultation with teachers regarding what it would look like is problematic. The balance between basic science knowledge that is fundamental to being an informed citizen and inquiry learning needs to be met. The Nature of Science is only one (interwoven strand) of the New Zealand curriculum, all strands need to be available to students.	Too limited. No detailed information of content. Lower science literacy in the community. Does not meet the needs of our akonga Does not address the needs of Maaori in science If this option is selected, it will negatively impact schools retention of students in the science subjects at the senior level.	More options is positive. A better option would be 1 standard for each strand.	Lots of options. More choice to meet the needs of the akonga. More potential to include Maaori in science. Able to meet the needs of high academics and students with learning needs.	2020-06-27 18:51:18	ANON-FDGN-6QNX-C	2020-06-27 18:51:18
[No response]	Option B	Level 1 needs a good all round science coverage in prep for more specialised subjects in level 2.	Yes this option would give a good basic coverage.	Chemistry and physics go well together.	Not enough focus on the foundation. The specialty options can come the following year.	2020-06-27 19:04:39	ANON-FDGN-6QNE-S	2020-06-27 19:04:39

[No response]	Option C	This allows schools to build courses that fit their student cohort. Subjects are not stuck together with predetermined matches. Biology and Chemistry fit well together, as do Physics and Biology, as does Chemistry and Earth and Space Science, as does Physics and Earth and Space Science. Having a general science option that focusses on the nature of science is great for the 'general public', who needs to learn how to evaluate information in a scientific way so that they can make evidence based decisions. However, there is still a large cohort of students who want to delve deeper into the strands of Science, who NEED to delve deeper as they are continuing onto academic science careers and need to have an understanding of the scientific concepts and processes	Too limiting. Although the nature of science is great, there are still students who want to delve deeply into the separate science strands - and they flourish when they are given the opportunity. Yes, I believe it meets the criteria. All schools should be able to teach Science effectively if there are enough science trained teachers - working on drawing people into the profession is where the focus should be.	Positives are that it allows for flexibility in that schools could create general science classes that focus on the nature of science but also specialist classes where students can really get their teeth into the knowledge of science. Negatives are that certain subjects have been put together while there are crossovers between all of the science strands - biology and chemistry work beautifully together as do biology and physics, physics and earth and space science work well together as does chemistry and earth and space science - are we limiting people to choose only these predetermined options?	This allows for flexibility within each school. Negatives are that there are so many choices of options for students that there could end up being difficulties if students move between schools who have done different courses, students may feel like they have missed out on important content or that they are now beyond their understanding if they have only focussed on one small aspect through exploring the nature of science. This means that it doesn't necessarily fit with some of the aspects highlighted in the 7 criteria. All schools are able to teach science effectively if they have enough science trained teachers - bringing	2020-06-27 20:14:55	ANON-FDGN-6QNZ-E	2020-06-27 20:14:55

[No response]	Option C	More applicable to students, covers more content that student should know at this level, a more specialised course if they already know what they want to do, looks more interesting, more science content rather than a social science course, better able to sell to parents that science is worthwhile taking, students can take more than one science subject, Option A is too limiting and looked very unexciting. Option C can still be broad and have a vast range of contexts.	Option A is too limiting and looked very unexciting. Very generic and there is no standardised content across the country, students could not take more than once science even if more than one was offered as the AS would be the same, not specialised enough. So much content missed if you are only doing one science. If you want non-specialist and broad, why is science that only subject that this affects and such an important subject? No option here to combine with other subjects as all science students would have to do these AS so no others can be used. Some of the AS did not look like they would be very helpful for students trying to get jobs. Some of AS looked like it should be a social science course. Yes, meets the criteria but the AS were so broad, every school would be doing	Better than option A but not as good as Option C. Still generic but better, more options to cover for content, students now can take two sciences if they wish with different AS, also means that there are more options to use science AS and combine with another subjects for more meaningful contexts for students. Yes still meets the broader foundational qualifications. Only would need PD on the first option A course, the rest we can manage ourselves. Why should the MOE state what combination there should be, surely teachers as professionals	More applicable to students, covers more content that student should know at this level, offers a more specialised course if they already know what they want to do, looks more interesting, more science content rather than a social science course, better able to sell to parents that science is worthwhile taking, students can take more than one science subject. Option C can still be broad and have a vast range of contexts. Employers can see and understand what students have been taught using the 4 'new' strands. Able to use with other subjects as not all AS would be used or covered by all the students (unlike Option A).	2020-06-27 20:34:14	ANON-FDGN-6QNK-Y	2020-06-27 20:34:14

[No response]	Option C	Because nature of science is not a real science - it's a process. If we want to have students studying sciences at higher levels then need more than a process. Knowledge & understanding is important	They simply should even consider this option	Again - students need to be able to look at 'real branches' of science - they should not be artificially grouped together under some mis guided idealogy	Just let science teachers get on with traching actual sciences - our school is looking at dropping L1 science NCEA if we can not access using actual content related science standards	2020-06-27 20:59:56	ANON-FDGN-6QNF-T	2020-06-27 20:59:56
[No response]	Option C	More variety for students according to their strengths and interests. Keeps a broad range of topics, so can work to figure out which speciality they may want to go into.	nothing specific. Feel will lack consistency across schools as to how it is assessed. Students still need certain content and how will this be ensured its covered?	Better than A but don't like combination of two science fields into one. Each one is its own Science field as should be treated as such. They are not like that in tertiary education.	Far better. Each Science allowed to be uts own and students have choice. More room for consistency throughout schools and collaboration through subject teachers.	2020-06-27 21:20:35	ANON-FDGN-6QNA-N	2020-06-27 21:20:35
[No response]	Option C	Gives students and teachers the most choice, so that teachers can adapt their courses to their students needs.				2020-06-27 21:27:17	ANON-FDGN-6QN5-9	2020-06-27 21:27:17
[No response]	Option C					2020-06-27 22:04:31	ANON-FDGN-6QN1-5	2020-06-27 22:04:31

[No response]	Option B	I agree with the thought that there's an almost unmanageably large number of science standards at level 1 at the moment, but I don't agree that the solution is to cut that down to four non specific standards. I think option B is a happy medium, though I would have to see the proposed standards to be sure. Basically if I could trust you not to heck it up, option B, if you re going to pull another "4 standards and they're barely science" then I'd want option C, so you have more opportunity to get at least a couple of them right.	I do not think it would be possible to create courses that allow for "robust pathways into level 2" using only four standards. I also worry that they're too literacy focused - this is important, but essays are a barrier to lots of excellent scientists.	I really like that ESS is given a more even footing with the other "trad" sciences (and I say this as a chemist). I like that with fewer standards courses might be more likely to teach ESS as part of their program. I think that it would be possible to mix and match these to build a bio/phys science course or even anESS course with this spread. I think the combinations work - if I was going to change it I'd go bio and Chem and then phys and ESS but I prefer it the way you've given them here. we need to have really clear guidelines for assessment and marking. Not just shitty tki tasks that	I think this is too many, but as I said above, maybe some of the standards might actually be usable if the panel made that many.	2020-06-27 22:11:02	ANON-FDGN-6QNC-Q	2020-06-27 22:11:02

[No response]	Option C	Because it's the on;y option which vaguely represents an actual science curriculum. Best of 3 bad options.	There are no positives at all.	There are no positives at all.	The positives are that students can still be taught some science, as opposed to social studies which seems to be the fasion. The NCEA vision is dross. Use qualified expert science teachers.	2020-06-27 22:13:32	ANON-FDGN-6QNW-B	2020-06-27 22:13:32
[No response]	Option B	It has a good basic combination of all parts of general science giving students a great taster as well as enough basic knowledge to carry on with any specialised strand the next year.	Too limited and not enough of every section of general science. Too simplistic	I think the combinations work well together as selected	Think this is already too specialised for year 11.	2020-06-28 08:07:21	ANON-FDGN-6QQP-7	2020-06-28 08:07:21
[No response]	Option A					2020-06-28 08:35:28	ANON-FDGN-6QQN-5	2020-06-28 08:35:28
[No response]	Option A	Science already takes a lot of students away from other subjects. One general taster like all other subjects have is suffice.	Students get a taste for science and if it’s for them or not and can the choose it at level 2 if they enjoy it.	Too many science options. A lot of parents and science teachers will out too much pressure on kids to take more then one science in year 11. Taking kids away from other subjects and opportunities from students.	As above.	2020-06-28 09:16:27	ANON-FDGN-6QQS-A	2020-06-28 09:16:27

[No response]	Option B	Gives students that like science a small amount of specific content without over committing in case they realise they don't want to continue in year 12. Option C is far too much choice too soon that can wait until year 12	It definitely allows for students to have a broader selection at level 1 as they can't pick huge numbers of science subjects . Covers all the strands and all secondary schools should be able to staff this as it is general science as in the days of school cert. Nothing should be at a depth in Physics that a biologist or chemistry trained teacher can't teach well and vide versa	Gives more science choices so will not be as broad a year 11 for those that chose this if offered. In my school we offer a huge amount of Science and most end up not coping with the Physics beyond the basic papers that will be in option 1 Chemistry is the cross over one and should be offered with bio and physics options. Smaller schools may struggle to staff this	I disagree with this option 100% as this will result in a very narrow subject choice for those choosing and it is then very hard to change direction in Year 12 . Hard to staff as need physics specialists to do this well	2020-06-28 09:37:16	ANON-FDGN-6QQD-U	2020-06-28 09:37:16

[No response]	Option C	I support the idea of a broad foundational L1 science qualification based on the NOS outcomes. I am worried that without the provision of intensive PLD, a range of pre-moderated assessment tasks (not accessible to students) and teaching resources, science could get lost at Level 1. I would support Option C if the 4 standards for each strand were contexts for the 4 NOS science standards (with the accompanying supporting materials). A school could then choose to cover all strands in a "general' L1 science course or provide "specialist" L1 courses whilst still delivering a NOS centered curriculum. If the standards from each strand become predominantly content assessments and lose the NOS focus, then the intent behind the L1 changes will be lost.	+ NOS driven with the flexibility of individualised contexts - NOS is inherently difficult to teach - a large amount of support and guidance needed. - Limits choice and course design at L1 Ministry and SEGs must provide PLD and a "ready to roll" teaching and assessment package.		See first comment.	2020-06-28 09:57:28	ANON-FDGN-6QQY-G	2020-06-28 09:57:28

[No response]	Option C	This would provide the greatest flexibility to schools in designing courses. Some schools have individual sciences at Level 1 and to continue with anything like their current programmes would need all the subjects in this option. Other schools can choose to provide courses combining different strands, or with a higher internal focus where that works for their learners. Option B is still a distinct improvement on Option A. Choosing Option A will be a disaster for Science education in my belief.	I can only see negatives here. The standards are so vague as to be useless (and given the vagueness of some current standards that is saying something!). The standards read like social studies not Science. Small schools, or schools with staff who are not experienced with this paradigm shift in assessment will struggle to provide courses that prepare their students for senior science. They attempt to teach concepts which are probably beyond a fair few learners at this level. For highly literate privileged learners these standards may be successful. For the majority of learners these standards will be too complex and require a sustained level of engagement that will be beyond them, or success at written examinations which they do not have the literacy to excel at. The success of boys in particular will only	Positives: it will allow much greater flexibility than option A, and appears to have content based standards. Schools that wish to offer a more internals based option do now at least have the option to do so. In some senses pairing chemistry and biology together and physics with ESS makes more sense. ESS has much more in common with physics than it does with biology, and chemistry fits with pretty much everything. However more schools are likely to want a Phys/Chem combination for engineering facing students. Negatives: It does not allow full single sciences as some schools currently	Positives: allows the greatest choice and means that schools can still offer much the same courses they currently do. Allows schools to move to a more NoS teaching framework if they wish but does not force it on them. Allows a wide range of course types - courses aimed at preparing students for senior science specialities can sit along side broad courses aimed at students who will not make science their career but need to have science education to be informed citizens. Negatives: is less likely to produce the widespread paradigm shift that the Ministry seems to want but that many teachers do not seek. Not really	2020-06-28 10:19:52	ANON-FDGN-6QQU-C	2020-06-28 10:19:52

[No response]	Option C	Stop dumbing the system down....our children need to be able to compete with kids across the world and right now aa it stands...they can't and don't have the resilience to work hard and succeed.			Workbooks supplied More base knowledge for students Students have to work hard	2020-06-28 10:34:12	ANON-FDGN-6QQ2-9	2020-06-28 10:34:12
[No response]	Option B	I like the idea of the new standards BUT feel students should have more in depth preparation for L2, and know a bit more about what the subject entails. I chose 2 subject strands, because other strand contexts could be used in the NOS standards	Good for general knowledge, research and literacy in science skills BUT emphasis on literacy will hinder some students	A grounding in 2 strands, and the new emphasis on nature of science. A good all round course, broader than existing Chem- Bio would also be a good combination, it is what many choose in L2. The others are also good matches	Pretty much the status quo but with extra added. Isn't this what the new scheme was trying to avoid.	2020-06-28 10:36:45	ANON-FDGN-6QQ3-A	2020-06-28 10:36:45

[No response]	Option B	I was coming around to the 4 stds you originally set. But B seems like a reasonably broad spread of concepts at L 1. It allows some general and specialisations.	Small number for students to choose and simplifies staffing. If other subjects get more standards urrgh.... Meets the vision but only if other subjects have same number. Make some resources (or allow private contractors time) we can use before we have to teach it instead of thousands of teacher reinventing the wheel to make it work which is what has happened in the past.	Allows some specialisation at level 1. I think the Physical and Natural science options work naturally that is what we used to do at our school before we went to semesters.	Allows lots of specialisation. Too much specialisation at level 1 may not match vision and may as well keep things the same as currently 31 stds.	2020-06-28 10:48:06	ANON-FDGN-6QQT-B	2020-06-28 10:48:06
[No response]	Option A	Because if you offer so many science options you will cut off pathways for other subjects. Some curriculum areas already have to mitigate the “I need to do the three sciences and maths and English so I can’t do x y z subject because we can only do 5” so let’s not cut off pathways at year 11 too. Is t the whole point of this NCEA review, to open up options and broader pathways? This offers the complete opposite!	As above	No thanks. Ridiculous	No thanks. Ridiculous. Not worth even thinking about	2020-06-28 10:57:17	ANON-FDGN-6QQ4-B	2020-06-28 10:57:17

[No response]	Option C	Option A is horrific. To attempt an assessment system of Yr11 "science" without assessing the understanding of any specific science concepts is a mistake that boggles the mind. Option B could work, but may be hamstrung by what few standards are created by assorted subject expert groups. It is assumed the chemistry, physics, biology and earth space science SEGs will be drafting the new elements in option B, not the science SEG. Option C would leave the most flexibility for schools to adapt and tailor multiple courses to fit the multiple needs of multiple parts of the Yr11 cohort in that school. This reflects what currently happens in NZ schools. If the school and community wish to include some NoS assessments from "general science" then	There are more negatives than can be listed. My previous answer and those from the previous survey explain why option A was never a workable plan. There is no way the Ministry nor the Science SEG could ensure schools teach and assess option A's package effectively. 1 or two elements of the package may be utilized by schools who choose to do so, but to have all 4 assessments NoS based is a mistake and will harm the education of students throughout NZ.	This option creates some flexibility to craft multiple courses that more realistically fit the multiple needs of Yr11 students. See above comments in 1st question. The 7 criteria are met, especially the demand for specific subject knowledge assessment that is critical for students who plan on continuing to Level 2 sciences. The yet to be drafted standards will have to be specific and detailed with plenty of provided resources. The 1st few years of NCEA did not have this, although it was attempted. This time the quality and quantity of resources will have to be much better. Your last question	This, by far, is the best option available. Again, the specific science SEGs will have the freedom to draft multiple assessments and schools will have the freedom to pick and mix assessments to create an assessment system for different groups of their Yr11 students. Most schools in NZ no not restrict their Yr11 students to just take "general science", thus option C is by far the most logical choice for Yr11. It, like option B meets the 7 criteria easily and obviously. But just like option B, the detail, exemplars and resources in the yet to be drafted standards is crucial	2020-06-28 11:36:12	ANON-FDGN-6QQJ-1	2020-06-28 11:34:04

[No response]	Option B	More flexibility for schools, but not so much that science courses could be vastly different depending on the school	Lack of content assessment makes it difficult to prepare students for L2 (and determine who could be capable of success in these challenging courses). Lack of buy-in from certain schools might lead to many dropping NCEA to take one of the overseas-based qualifications. We need a wide variety of good sample assessments and exemplars for the NoS standards, and good resources that can be tailored to different contexts.	This gives some content options and is a good compromise - it should ensure all L1 Science courses keep an element of NoS. I think Physics/ESS and Bio/Chem are more natural fits. We need a wide variety of good sample assessments and exemplars for the NoS standards, and good resources that can be tailored to different contexts.	It will keep private and single-sex schools happy, but does allow for courses to be created with no focus on NoS - it is pretty much the status quo. We need a wide variety of good sample assessments and exemplars for the NoS standards, and good resources that can be tailored to different contexts.	2020-06-28 11:56:41	ANON-FDGN-6QQQ-8	2020-06-28 11:56:41
[No response]	Option B	Provides scope from all Science strands ... allowing flexible teaching and learning programs that reflect the local community priorities				2020-06-28 13:22:12	ANON-FDGN-6QQ6-D	2020-06-28 13:22:12

[No response]	Option C	Option A is too general and will make transitioning to level 2 very hard. Option B. Why should students be forced to make a choice between the Physical and Natural Sciences. This leaves option C.				2020-06-28 13:31:42	ANON-FDGN-6QQ7-E	2020-06-28 13:31:42
[No response]	Option C	better prepare students for Y12 and 13 following into Uni			I feel it is more inline with NCEA and the Y11 students can choose what they want without being forced into nature of science. There are many Y11s that prefer to already do the specialist subjects and they might lose interest in Science all together if they can only chose NOS. Many schools might do their own Y11 leading into NCEA in Y12 only as the NOS are not catering for the skills needed in senior Physics for example	2020-06-28 13:43:56	ANON-FDGN-6QQG-X	2020-06-28 13:43:56

[No response]	Option B	Our world is facing increasing specialisation not generalisation, so why should our curriculum not reflect that? Let students be exposed to and interact with all the sciences rather than specific contexts. School is supposed to extend minds beyond their circumstance not cement them in place. I understand the mindset of trying to validate student experience, but at senior school we must move beyond that because scientific literacy provides pathways to social mobility. This is not just from career choices (as in other subjects) but from a real understanding of reproductive choices and substance abuse. I am very concerned that NCEA has focused on literacy at the expense of scientific literacy. I am very concerned that NCEA allows students to wander in an echo chamber that does not	This is too broad, and too onerous for teachers to "make up" contexts that are interesting enough that cover all bases. If I had to do it, I would do - "water" or "food", but this seems a bit "primary".	The positives are that it allows students to reach a greater depth, without losing too much breadth in their education. Students are more likely to have access to expert teachers in their field. I really want NZQA to embrace a bit of multichoice in assessment. Having to write essays all the time is ridiculous and reduces the scope (breadth) of a course as students have to nail every piece of jargon.	Too specific for level 1 and too hard to timetable in smaller schools. Most schools will just offer two anyway specialist subjects, so the other two will be dropped.	2020-06-28 13:47:47	ANON-FDGN-6QQV-D	2020-06-28 13:47:47

[No response]	Option C	To allow students to understand AND participate in the 21C.			To allow students to understand AND participate in the 21C. To continue on in NZ and else where to study and be socially aware for 21C society!	2020-06-28 13:49:04	ANON-FDGN-6QQ9-G	2020-06-28 13:49:04
[No response]	Option A	The other options are just continuing with what is currently in place. Option A is a new way to look at out subject.	Positives - provides a broad base of knowledge without the specialisation that the other options have. It would require significant PLD for science teachers.	Negatives - providing too much specialisation which is going against the purpose of the review.	Negatives - again provides too much specialisation.	2020-06-28 14:57:02	ANON-FDGN-6QQX-F	2020-06-28 14:57:02

[No response]	Option C	It allows more flexibility for schools to design programmes to meet the needs of all students, to ensure that their future goals are achievable.	The focus on Nature of Science is valuable, but has no pathway into the senior school, as there are no general science options at Level 2/3 of NCEA. The wide variety of possible contexts, and lack of focus on science knowledge mean that it is conceivable (and highly probably in some settings) for a student to complete these standards but have very little actually knowledge. With no specialist subjects available at NCEA Level 1, this risks damaging the value of NCEA as a qualification. It is interesting to consider what this approach could mean if used in other subjects such as technology for example - a generic "Level 1 technology" which is all about the nature of technology, but no specialist subjects such as hard materials, soft materials or digital tech.	This option feels like a 'halfway house' where some specialist standards are offered, but these are not necessarily coherent. It has the potential to better connect with senior science options, and would allow for some flexibility in course design but this is stil limited.	This option would provide the best pathway into the senior school, and also provide the most flexibility for schools in designing their programmes. It would allow both schools and students to choose options that best fit their individual needs.	2020-06-28 15:17:30	ANON-FDGN-6QQE-V	2020-06-28 15:17:30

[No response]	Option A	Keeps student options open for future years - specialisation occurs in Level 2. Specialisation can happen if school offer a multi level course for those students that able to. Allows students at Level 1 to have a broader range of subjects rather than doing more than one course in science,	Positives Able to keep science as a core subject in school rather than optional. I believe it gives students a broader science perspective which is what is required in today's world. Negatives Zero To teach the course effectively PLD is required and rigorous exemplars. Teachers need a mind shift from where they are at present - perceived work load a major issue. Clear indication on how the external that occurs over a three week period is going to work so consistency is across all schools.	Option B does what is presently occurring in NCEA - elite choices and narrowing students learning.	Option C does what is presently occurring in NCEA - elite choices and narrowing students learning.	2020-06-28 15:17:53	ANON-FDGN-6QQB-S	2020-06-28 15:17:53

[No response]	Option C	I believe it caters for the whole range of students. Those near the bottom academically, those who sit around where one would expect and then those who are academic. This option would give a lot more flexibility at schools who can create a myriad of targeted Science courses to fit their cohort of students.	No positives. This is too open ended and would not cater for the whole range of students. Those near the bottom academically, those who sit around where one would expect and then those who are ahead (accelerated students). This option would not give a lot more flexibility at schools. This is catered for no one. The broad long long ASs would be too hard for lower ability students and bore academic students. I would leave teaching if this option cam into play.	Limited positives as it does give more choice and may suit average to lower end students potentially. This is too open ended and would not cater for the whole range of students. This option would give a little more flexibility at schools. Okay, but still would not fit our full range of students.	There are NO negatives here. The positives are that it caters for the whole range of students. Those near the bottom academically, those who sit around where one would expect and then those who are academic. This option would give a lot more flexibility at schools who can create a myriad of targeted Science courses to fit their cohort of students.	2020-06-28 15:34:21	ANON-FDGN-6QQZ-H	2020-06-28 15:34:21

[No response]	Option C	Allows a school to tailor individual courses that meet the ongoing needs of their students using the standards from all 5 subjects (Science Matrix as at present)	No positives. Negative -Not enough choice to meet the needs of all students Inadequate preparation for those students who wish to go on to senior sciences. Advise all schools to start Cambridge courses for those students wishing to go on in the sciences	No positives except better than Option A. Negative -Not enough choice to meet the needs of all students Inadequate preparation for those students who wish to go on to senior sciences. Advise all schools to start Cambridge courses for those students wishing to go on in the sciences	Positive -Allows a school to tailor individual courses that meet the ongoing needs of their students using the standards from all 5 subjects (Science Matrix as at present) Yes Ensure that all schools are fully staffed by qualified competent science teachers.	2020-06-28 15:53:54	ANON-FDGN-6QQF-W	2020-06-28 15:53:54

[No response]	Option B	This allows schools to develop a course to prepare students for the level 2 sciences. With only the “nature of science strand” students will see science as a writing subject and a history subject rather than one which uses experiments that students can carry out to solve life’s questions. This will inspire more students to look at careers in sciences, medicine and engineering. It will also allow schools to develop courses which provide a foundation for concepts needed in L2 science, physics, chemistry and biology courses	Making it a writing subject does not truely reflect the character of science. It will also disadvantage students who have yet to be able to properly express themselves in the written report form. Ministry would need to reduce writing and increase practical aspect of science	I am in favour of this option as there is enough to provide flexibility for schools to develop a solid program to enhance the understanding of the science process via the different strands. It also gives schools the opportunity to develop programs to prepare students for the Rigor’s of L2 NCEA.	I am not against this option . It provides more options for schools to use. I guess it provides schools who like specialist science subjects the chance to provide such a course. Personally I prefer a mix and match approach to suit the different communities in which students live. This is very similar to what is available now.	2020-06-28 16:11:04	ANON-FDGN-6QQA-R	2020-06-28 16:11:04

[No response]	Option B	I think there is value in having one external for each Y11 Science sub-specialty which will allow each subject area to seriously assess the content background deemed necessary for success in Y12. I am not convinced four for each Science is necessary.	I think there is enormous value in having standards schools can use to focus on the Nature of Science. Personally, I think the developed NoS standards are great and I would enjoy supplementing a Y11 course with them. I think a course constructed using them alone risks, however, students not being exposed to sufficient content knowledge. I don't think this should be the only option. Many teachers need clearer guidance regarding what content knowledge should be delivered and external, subject-focused standards can provide this.	I think this option is great. I would like to see extensive sector consultation regarding what content should be assessed on each of the externals for each sub-specialty.	I don't mind Option C but feel schools would probably have access to sufficient breadth of standards with Option B. There are benefits to limiting options - It allows for more focused PD and it is easier to maintain consistently high standards with respect to moderation / sharing of teaching practices etc.	2020-06-28 16:55:04	ANON-FDGN-6QQ1-8	2020-06-28 16:55:04

[No response]	Option C	greater flexibilty to allow a teacher/ dept/ school develop a course that fits more than 1 group of students, ie greater individuality possible, esp in bigger schools where mulitple courses can be offered	this would provide a weker understanding of science as no time to develop depth in any area, what is left out (?) and therefore makefpr reduced understanding of concepts for students progressing to higher levels of science learning and threfore increasing pressure at these levels to fill in gaps. There would need to be strengthening of the expert groups as they are not highly effective in their current format, hard to access, limited knowledge across the areas. even smallest schools who often lack science specialists should be able to teach these effectively as no depth of understanding required in specialist areas in this option not highly effective at meeting all the criteria as it will weaken the integrity of NCEA level 1 as an academically	better depth of concept development possible and able to cater to varied needs of students. acceptable over option A for this reason. should be able to better meet the 7 criteria not too worried about the combination of topics	schools able to offer mulitple courses to cater for the varied needs of the students they teach and can make up indiviual courses that may support their other teaching areas. best able to meet the 7 criteria as more option to fit things in to accommodate the criteria across the 20 standards definitely need to have better access to the experts and the experts need to be expert. teacher definitely need access to better PD around the teaching of the sciences, practical and classroom based PD not theoretical pedagogy	2020-06-28 17:20:27	ANON-FDGN-6QQC-T	2020-06-28 17:20:27

[No response]	Option C	Great flexibility to design and deliver courses appropriate to your school communities needs	Lack of flexibility Difficult when students transfer between school - lack of consistent skill/concepts being covered - could lead to students missing out on learning opportunities	Half way between two options - jumble which leads to neither of a good option for students	Provides the greatest flexibility for students to have course appropriate to their requirements and that of their school communities Seven criteria can easily be met with the greater flexibility that this option can provide Ministry and Subject expert groups need to provide clear and distinct guidelines and tested exemplars and subject resources to be used as a foundation point for teachers and learning communities to teach Science effectively - the more grey/fuzzy the standard and support material the less effective the learning / assessment process will be	2020-06-28 17:25:55	ANON-FDGN-6QQW-E	2020-06-28 17:25:55

[No response]	Option C	This would be my preferred option if departments are able to choose different standards out of the different lines.			Positive: wider choice Negative: would like to teach broad foundation, but not likely enough time to fit in every thing I believe to be important.	2020-06-28 17:30:33	ANON-FDGN-6QQM-4	2020-06-28 17:30:33
[No response]	Option C		Positives are more wider range of options, general science base and specialised based science for moving into levels 2 & 3. Negatives - teacher capability to teach the full curriculum.			2020-06-28 18:03:27	ANON-FDGN-6QQR-9	2020-06-28 18:03:27
[No response]	Option C	There needs to be some proper conetnt covered for those that are able to properly prepare them fofr a furure in senior science and uni science and careers in science.	Too much wish washy stuff- ok for primary studnts and teachers with no content knowledge. You wont need science teachers anybody can shrpen the olouring pencils.	This would not be too bad	Ass above	2020-06-28 18:11:49	ANON-FDGN-6QQ8-F	2020-06-28 18:11:49

[No response]	Option C	Good basic knowledge for all potential careers. Would this prepare better for NCEA level2			Workload- can it be delivered well?in the correct depth? in the timeframe? This level is very comprehensive for a Single qualification. Suitable depth to expand in for level 2. Specialist teachers/ well funded labs and opportunities.	2020-06-28 18:52:09	ANON-FDGN-6Q2P-8	2020-06-28 18:52:09
[No response]	Option C	Standards of actual knowledge are plummeting. Too many every player wins a prize is being passed off as improving overall achievement levels. There seems to be a reluctance in general as to addressing the key issues of why our students are NOT as capable as they once were. Treating symptoms is not treating the disease of mediocrity as being sufficient.	For lowest level students, it has some merits. It keeps them being aware of the world around them and being able to be informed, and have a degree of participation in our shared future. We can also make it relevant to social scientific issues, and have people make informed decisions in the future.	Keeping some degree of flexibility for "late bloomers" is of use, but there is still the issue of needing to address under performance. There is still a risk of "dumbing down the system".	This needs to be the real premiere option, and we need to stress the importance of the upper levels of academic achievement as being what is actually acceptable.	2020-06-28 19:02:18	ANON-FDGN-6Q2N-6	2020-06-28 19:02:18

[No response]	Option C	Under option A and B the science in NZ curriculum will be watered down to such and extent that our level of science will be a laughing matter for all the countries in the world. The science in NZ curriculum is at such a low level that students are put off science as they do not find it motivating. For these two options the teachers who will be teaching the courses will not have the passion for the different parts of the science and this will demotivate the students. This is what has happened to science in Australian schools.	This is what should be done at primary schools and not in high school science. The world is going to laugh at this science.	Those students who do not choose Physics/Chemistry line will have no appreciation of these subjects and same will apply to those who do biology/earth and space science. Earth and space science only makes sense after students have a good understanding of chemistry, physic and biology.	Under this option the students who want to pursue science at higher level will have good background and appreciation of science. However, each school must be required to offer chemistry biology and physics as separate subjects to all students who want to do it. At the moment science is given a very very low priority in NZ secondary schools and this is reflected in the low number of students wanting to do science.	2020-06-28 19:41:35	ANON-FDGN-6Q2S-B	2020-06-28 19:41:35

[No response]	Option C	Allows specialisation early on for those students who are targeting a path in the sciences, but allows generalists and those who want to keep options open to keep a toe in science in general.	It will just lead to level one being dropped by academic schools (already the path we are going down). Level 2 will have to be dumbed down in order to accommodate the lack of specialised knowledge coming through. NCEA will be weakened in general.	Will lead to biology being treated as a less academic subject. Will weaken biology at level 2 and 3. No individual chem or physics subjects decreases specialist knowledge gained at level 1, forcing level 2 teachers to play catch up and weakening the subjects overall.	Best option. Allows schools more choice. Enables courses to be designed that are appropriate for individual schools. Quality of specialist knowledge at level one allows for subject strength to be maintained at level 2 and 3. No lowered expectations.	2020-06-28 19:43:35	ANON-FDGN-6Q2D-V	2020-06-28 19:43:35

[No response]	Option C	Option C has the most number of standards and hence the most possible permutations of achievement standards to cater to a range of student interests. In Option A, there are so few standards that someone doing a chemistry context for part of the year yet being assessed/reported on in Nature of Science will end up with a record of learning showing only the Nature of Science standard(s) which were assessed. This means that, even though there may have been very valuable teaching and learning taking places, there is no official record of this or award for this. While Option B somewhat alleviates this issue, it introduces a new problem: Biology and ESS as one pair, and Physics + Chemistry as a second pair, mean	Positives: (1) Each achievement standard aligns to one area of NoS in the NZ Curriculum. Negatives: (1) The achievement standards exclusively report on how well a student meets the NoS strands only. (2) There is no record of whether the student has understood a particular aspect of a specialist science. This poses problems when they change schools, or present their record to a potential employer which ultimately disservices the student. (3) There are no achievement standards, only "significant learning" which is defined as "not to be missed" yet also "not prescriptive" for the specialist areas. This means that these areas are arbitrarily predefined by a small group in 2020 and not up to the decision of the teacher in 2021, 2022	Chemistry sits comfortably in the middle between Physics, Biology and ESS. However, I cannot say that biology marries well with physics or pairs well with ESS - at least not in a 50:50 split of achievement standards. As a teacher, if it were "forced" on my in this way I would still "make it work" by throwing something together, but I would also continue to wonder why we never just went for Option C. Essentially, when you force 2 specialist areas to pair together then this means out of "All possibly contexts and ideas in science" you are now limiting yourself to "those which only exist as		2020-06-28 19:57:45	ANON-FDGN-6Q2Y-H	2020-06-28 19:57:45
[No response]	Option B					2020-06-28 19:58:11	ANON-FDGN-6Q2U-D	2020-06-28 19:58:11

[No response]	Option C	I like the variety of subjects on offer as I think L1 is a great place to introduce subject specific content required for success at the subsequent levels.	I personally think that it doesn't allow students to prepare appropriately for the next level.	I like that it is mentioned standards can be selected from across the 'three subjects'.	Ministry - pay the subject expert groups far more so that there is a reward for the effort applied. Expert groups struggle to find time out of their schools and the amount of work is not really 'worth it' outside of PLD.	2020-06-28 19:59:32	ANON-FDGN-6Q22-A	2020-06-28 19:59:32
[No response]	Option C	Because students can engage in their preferred area, becoming stronger in it and be better prepared for Level 2 in that area.	You're dumbing down science because results are falling. An idiotic response only a politician would favour.	This has some merit at least, but you are still making broad assumptions about students and their abilities to learn because of the falling results. You are not addressing WHY those results are falling. Read MLE's!!	Of the 3 this is the only one that makes partial sense. I'm not actually in favour of your suggested changes at all.	2020-06-28 20:08:30	ANON-FDGN-6Q2T-C	2020-06-28 20:08:30

[No response]	Option C	Scope to build courses for a range of students. Content specific standards important for academic rigour Demand from school community for specialised courses at Level 1	No prescribed content a major concern Inconsistencies and inequity across schools a concern Our school would seriously consider dropping Level 1 assessment	Better than option A - more scope for schools Physics and Chemistry could go together - depends upon detail of proposed standards Biology and Earth/Space not a good fit	Good option. With only 4 standards in each subject it still keeps Level 1 broad. Standards need to detail the specific content expected for Level 1 NCEA and not leave them open to endless interpretations. Some degree of consistency across all NZ schools is important.	2020-06-28 20:15:42	ANON-FDGN-6Q24-C	2020-06-28 20:15:42
[No response]	Option C	All Sciences are vastly different and require vastly different skills: from writing essays and learning facts in biology to problem-solving and using high level maths in physics. It makes very little sense to bundle them up. Keeping them apart allows the students to choose sciences they are interested in and they can do well in, instead of muddying the waters.				2020-06-28 20:16:18	ANON-FDGN-6Q2J-2	2020-06-28 20:16:18

[No response]	Option A	Option B and C do not have the forward thinking the pilot group envisioned and there is too much of a danger of reverting to the old subject divisions and not taking an integrated science approach which is needed going forward	Positives are that it takes science forward into solving real world problems at today's level eg dirty waterways and ocean acidification. Negatives - colleague resistance and may lose some staff to 'Cambridge schools'. It does meet all requirements for a broader educational foundation. Subject Expert Group would need to at minimum have 2-3 days with a group of Faculty heads, staff from school to help with curriculum planning and development. It would be better as small school clusters in an area to allow workshop atmosphere. Worst thing would be to lecture experienced staff and deprive them the opportunity to 'buy in'. Each school send 2 max 3 staff to 2-3 day workshop to develop a delivery plan. Ideally 4-5 schools in a cluster - max 15 people. Would be expensive but let's do	Advantage is that it feels familiar. Negatives - not developmental and forward thinking. Does not meet the 7 criteria in my opinion. Ministry and Subject Expert Groups would need to do less because schools would feel they could handle it and vision would be lost by keeping old names 'physics' etc. Physics plus Earth and Space AND Biology and Chemistry are a better combination.	Even worse - see above.	2020-06-28 20:30:26	ANON-FDGN-6Q2Q-9	2020-06-28 20:30:26

[No response]	Option A	I like the idea of having more flexibility to design and teach programs that can be tailored to the students. I like the standards that have been chosen and like the greater focus on the investigation. This is heading away from the drive to teach too much content and more towards engaging real-life contextual based Science. Well done! I love it. heading more towards the future of Science.	More focus on research and science fair type projects. - Fantastic I would love to move away from the focus on teaching so much content that leaves little time for research and hands-on science investigations.			2020-06-28 20:36:44	ANON-FDGN-6Q27-F	2020-06-28 20:36:44

[No response]	Option C	To allow for the groundwork in the specialised sciences to be established so that the transition to Level 2 has sound background preparation. General science cannot do this as there is significant specialised work required. Biology, Chemistry and Physics are very different subjects and the differentiation between them and specialised learning needs to be established before level 2.	Positive is Nature of Science is heralded. Negative is the topics are too broad and generalised and are not sufficient preparation for those going on in the sciences especially Biology, Chemistry and Physics . The broader science course could be sufficient for those students who do not want to further their science learning to the specialised sciences but does not prepare for Level 2 pure sciences	Slightly better than option A but the same arguments are maintained as the preparation for Level 2 pure sciences requires significant scaffolding. Positive is Nature of Science is heralded. Negative is the topics are too broad and generalised and are not sufficient preparation for those going on in the sciences especially Biology, Chemistry and Physics . The broader science course could be sufficient for those students who do not want to further their science learning to the specialised sciences but does not prepare for Level 2 pure sciences	This better allows for sufficient background learning essential for students progressing on in the 3 main specialist sciences of Biology, Chemistry and Physics. A significant number of students specialise in the 3 main sciences and they require significant grounding in some of the key essentials for satisfactory progression to Level 2 pure sciences. Starting in at Level 2 when specialisation occurs is too late and makes the Level 2 course difficult as there would be little formative exposure and learning .	2020-06-28 21:11:20	ANON-FDGN-6Q2G-Y	2020-06-28 21:11:20
[No response]	Option B	Reduces number of papers, covers all topics	Negatives- too broad, some sciences may not be taught properly	Combinations are interesting- I would put ESS and PHY together, and CHE and BIO.	Best but too many papers	2020-06-28 21:55:02	ANON-FDGN-6Q2V-E	2020-06-28 21:55:02

[No response]	Option A	I think a general understanding of Science is more beneficial for students in general and for society as a whole.	Yes no problem there. The ability to use the scientific method and develop a systematic understand ing of the world is more valuable than the memorized facts and figures.	A good second choice, allowing the compromise between specialisation and development of ideas and systematic problem solving	Nah. Only really big and elite schools can offer these. This just becomes a chance to channel and make students specialise at the expense of learning other strands or more generalised modes of scientific thought	2020-06-28 21:55:04	ANON-FDGN-6Q29-H	2020-06-28 21:55:04
[No response]	Option B	I think it provides a good balance but does not require an over abundance of timetable time.	Less specialist knowledge required so would suit smaller schools with limited departments.	I think these are good combinations as organised in the proposal. I think these combinations would work well with progression to Level 2 and 3.	This looks like it would require students to have less options in their learning at this level as they would be committed to particular areas.	2020-06-28 22:52:26	ANON-FDGN-6Q2H-Z	2020-06-28 22:52:26
[No response]	Option C	It allows students to explore their avenues of interest to the greatest degree.				2020-06-29 07:16:39	ANON-FDGN-6Q2X-G	2020-06-29 07:16:39

[No response]	Option C	More options for students and a less dramatic start to curriculum changes for teachers	Too much change too fast Would be good for the students if it were compulsory- but nothing is at our school!!!!!	Bio and ESS don't necessarily go together and it might put off potential students in either field if they have no interest in the other	Allows for option 1 with a smattering if the others for keen students and/or students who are struggling in other subject areas to make up credits in an area they love A longer lead in time for the "traditional" teachers who aren't used to teaching contextually	2020-06-29 07:36:43	ANON-FDGN-6Q2E-W	2020-06-29 07:36:43

[No response]	Option C	This gives the greatest flexibility to all schools to design a course that best meets the needs of their students - some schools (including my own) run a general science course in one option line and then those students who are keen can opt into a specialist science (either biology, chemistry, physics or earth space science) in a second option line - this works extremely well in my school and under this option this course will still be possible.	I would be extremely concerned about this option being the chosen one as this limits the flexibility for schools to design a course that meets the needs of all their students. I would hope, if this is the chosen course, that my school would opt out of level 1 NCEA so that we can run a course that suits the needs of our students, which I don't believe this course would do. A number of our students are low ability and, assuming the nature of science strands are still going to involve lots of individual research or reading and interpreting information on a chosen subject it would be hard to keep our boys motivated and interested to do this for more than one standard!! I do think that it would allow for a broader foundation qualification but I believe this is also possible with option C. Make sure new	I think it would be better to pair physics and Earth Space Science in one strand and biology and chemistry in the other strand. Schools should still have the ability to mix and match achievement standards from different strands to make up a course that meets the needs of their students. Make sure new textbooks and workbooks (from companies like Scipad) in plenty of time to ensure adequate teaching resources are available without creating enormous amounts of extra workload for teachers. Ensure adequate formative assessments with good quality mark schemes are provided for	Much greater flexibility to meet the needs of all students in all schools. Please ensure that schools are able to still design a course by selecting different achievement standards from different matrices to design courses that best meet the needs of all their students - one of the great advantages of NCEA is its flexibility. Make sure new textbooks and workbooks (from companies like Scipad) in plenty of time to ensure adequate teaching resources are available without creating enormous amounts of extra workload for teachers. Ensure adequate formative assessments with good quality mark	2020-06-29 07:44:32	ANON-FDGN-6Q2B-T	2020-06-29 07:44:32

[No response]	Option B	Option C is similar to what we currently have. Too many achievement standards will divide up content into discrete packages which is what we are trying to get away from. Year 11 Science doesn't need to be entirely separated into different disciplines. It also means that resources such as textbooks etc will be harder to produce and find for our students if schools all do a different combination of the 20 standards. Option A is going too far the other way. You can't ask teachers to adapt every standard to fit whatever context they are teaching - this is too limiting and would create problems with what assessment should look like and how it is done - much like how much of a mess internal standards are at many schools around NZ.	Too simple - schools would have way too much trouble trying to get this to work and so you'd probably just have a NCEA Level 1 Science situation where they only learn Mechanics, Genetic Variation, and Acids and Bases	A good balance - some schools already offer a 'physical science' course with phys and chem together. Biology and ESS don't fit well together though but at NCEA level 1 this is OK	Too many options Most would just do about 6 or 7 of these standards, much like what is the case now with NCEA level 1 Chem/Phy/Bio - most schools offer the NCEA Level 1 Science standards but might choose the odd one from chem/phys/bio	2020-06-29 07:50:01	ANON-FDGN-6Q2K-3	2020-06-29 07:50:01

[No response]	Option C	It is important to continue offering the single-science strand in Level 1. This will give us more flexibility with our programmes and allow us to cater to our more able students. We will also be able to develop programmes for groups of students that are geared to their interests rather than a one-size-fits-all approach. More specific standards and tasks will also take some make administration and moderation easier with less 'grey-area'.	Positives - More defined relationship with te ao Maori; Based on 'Big Ideas'; Will tie in nicely to our junior curriculum programme – e.g. NOS assessments; Assess externals when ready and not at the end of the year?; 50/50 credit split Negatives - Some of the possible activities seem too general and too simplistic – especially for more able students; Increase in teacher workload; Decrease in authenticity for all of these standards will be an issue - assessment unfit for purpose; How will these assessment modes flow into Level 2 and 3 specialised subjects?; May discourage people from entering and encourage people to leave the teaching profession; Will more schools opt not to offer Level 1 Science?; Decreased focus on a set of consistent Knowledge /Content when it is needed for expertise	Positives - More standards offered - more choice developing programmes; Merging subjects together can allow us to create links between them easier Negatives - What will the standards look like?; Increase in teacher workload; Decrease in authenticity for all of these standards will be an issue; How will these assessment modes flow into Level 2 and 3 specialised subjects?; May discourage people from entering and encourage people to leave the teaching profession; Will more schools opt not to offer Level 1 Science?; Decreased focus on a set of consistent Knowledge	Positives - More standards offered - more choice developing programmes; Fits with the model of 50/50 internal/external nicely; Keeps the single strand focus for schools who wish to maintain this; Allow us to cater to more able students; Offers flexibility in programmes we can offer across the cohort; Can be more inclusive for reasons stated above; Takes the grey-area out of teaching certain standards that are too broad and general; Depending on how the tasks are structured, this may not increase teacher workload; Will not affect authenticity of the tasks; Will enable us to cover of depth and breadth in Level 1	2020-06-29 08:07:51	ANON-FDGN-6Q2Z-J	2020-06-29 07:45:44
[No response]	Option C	To allow varied courses that suit the needs of all learners.				2020-06-29 08:28:56	ANON-FDGN-6Q2A-S	2020-06-29 08:28:56
[No response]	Option C	the best				2020-06-29 08:36:57	ANON-FDGN-6Q25-D	2020-06-29 08:36:57

[No response]	Option C	Option C will mean we can provide comprehensive options to our students that cover the required specialist knowledge they need to build to access higher level science education	I do not believe it meets the seven criteria as giving a broad foundational knowledge does not necessarily set students up for success in future higher level science pathways. Instead, this will limit student options as students who want to take science further will be limited in their knowledge, giving them a disadvantage in higher education.	I believe we need four Science options to be able to allow students wanting to take these further to gain a specialised foundational knowledge to allow them to succeed in their higher education pathways.	This will allow students to choose their own pathways, giving a greater sense of student freedom, whilst ensuring students who want to specialise can do so, giving them an advantage at higher levels of science education. In order to ensure al schools can teach these standards effectively, perhaps a specialist group could be set up where curriculum driven PD is provided to ensure schools are clear about the expectations of what is taught for each standard.	2020-06-29 08:37:28	ANON-FDGN-6Q21-9	2020-06-29 08:37:28

[No response]	Option C	This option provides us with more scope to build courses that suit the needs of our learners.	I do not believe that this option meets the varying needs of learners which was the fundamental aim of NCEA. It will also be difficult to provide a firm foundation for Level 2 courses. I do not believe it meets the 7 criteria.	While this is a better option than option A it still provides less scope for building tailored courses.	I believe this is the most desirable option. It certainly meets the 7 criteria	2020-06-29 08:38:19	ANON-FDGN-6Q2C-U	2020-06-29 08:38:19
[No response]	Option C					2020-06-29 08:47:59	ANON-FDGN-6Q2M-5	2020-06-29 08:47:59

[No response]	Option C	It is great to see the general science standards as they provide opportunities to explore issues in our world and our communities However I support option C. Each of these four main strands of Science have significant concepts which underpin further study in the pure Science at NCEA Level 2 and 3. In my own subject, Physics there are four critical areas, starting with mechanics,. The other three areas are waves, electrical systems and heat/atomic physics	Yes, I believe it does meet the seven criteria given in discussions about Level one However, it is equally important that the NZ Curriculums support teaching of the skills of Science, including higher order thinking skills associated with the specific concepts related to the Scientific process. It would be all too easy for generalised NOS Standards to lead students to present very superficial reports, with little of the deeper understanding of Science Another worry about Option A, it that these kind of Standards take considerable amounts of teacher time to assess, hence increasing workload issues.	Option B does appear to offer a nicely concise package of Standard. This would assist students to make sensible choices for a scientific study pathway without overloading their programme of learning with too many subjects I do think the Chemistry/Biology and the Physics?Earth Space Science might be a better matrix grouping	The positives are that Option C significantly increases flexibility, provided schools are not required to offer all five subjects I believe it offers the broadest option for a foundational qualifications A major negative is resourcing, both of time, teacher availability, cost and equipment/lab space. A major commitment to teaching of STEM subjects at all Levels, including years 8 to 10 would be required by the Ministry of Education. Certainly not just a short-term funded project. It is import to realise that a big part of New	2020-06-29 08:53:51	ANON-FDGN-6Q28-G	2020-06-29 08:53:51

[No response]	Option C	I want more flexibility and choice in how I choose the standards to differentiate for my students	too rigid, not clear	its ok but I dont like the lack of options available, reduces choice for students	Likelihood of lots more options may be available in terms of extending academic students as well as for priority students	2020-06-29 08:56:54	ANON-FDGN-6QSP-9	2020-06-29 08:56:54
[No response]	Option C	Provides more course options for students of various academic levels.				2020-06-29 09:12:56	ANON-FDGN-6QSS-C	2020-06-29 09:12:56
[No response]	Option B					2020-06-29 09:14:30	ANON-FDGN-6QSD-W	2020-06-29 09:14:30
[No response]	Option C	More scope for specialist science knowledge to be learned at L1 for those who want and need the challenge. Builds knowledge in preparation for L2 and L3 specialist sciences, making them more achievable. Helps develop deeper knowledge through the years for those taking a pathway into tertiary science of any kind. Still has the option available for NoS Science for those not heading in that direction.	Negatives - too narrow for those students wishing to continue in higher NCEA level Sciences. Positives - good scope for general science knowledge and understanding for those who are less academically focussed for Science.	I think that all options can fit together, depending on the needs of the students at the school so this option would require flexibility in choosing which strands go together and make up the Science course. Could be more difficult to keep consistent across schools if that is the aim.	As explained above - I believe this is the best option. Not all schools need to offer all standards - would depend on needs of students at the particular school. This option offers the best level of flexibility to challenge students who want and need it, whilst also covering those who need a less specialised approach.	2020-06-29 09:28:28	ANON-FDGN-6QSY-J	2020-06-29 09:28:28

[No response]	Option C	In order for NZ to progress as a nation our Science Graduates need to be competent academics and more rigor needs to be introduced into our courses not less. The Nature of Science is a Philosophy based Science course it will never produce Scientists capable of engaging in research and finding cures for illness, or developing new materials that are more eco friendly, or building structures that are safe and earthquake proof. Playing around with the content and assessment of Science requires WIDE engagement of qualified scientists and Science educators not the few narrow views that the Ministry always consults.	How is it possible for only Nature of Science to be the only thing that is assessed and still meet the seven criteria as a broad foundational qualification? The simple answer it does not!! The assessments for the first option are Nature of Science approach and are a good foundation for a Philosophy of Science course. If the government chooses this option, I do believe there will be very limited access to Science careers for students who are forced to study this option. Students who study option A will be very aware of social issues around Science as a subject but will not have the foundational knowledge to be successful at Level 2 Scientific disciplines which requires the knowledge of a large amount of content to be able to study Science at University. People who study this course will be good philosophers but	Option B is certainly better than Option A in that it provides a broader approach to a study of the Scientific disciplines. It would seem that the Ministry is intent on dumbing down the assessment and the opportunities we should be making available for our students in the 21 st century. Science is a complex and wide ranging discipline and to narrow the scope of its study reduces a countries ability to solve some very complex issues facing them. Option B and least broadens the scope of assessment and a broader approach will be adopted by schools in teaching Science. You are dreaming if you think people will teach the	This is the only course that meets all seven criteria if we wish to provide a broad foundational course in science that makes people aware of the social issues around the study of science as well as providing the foundational underpinning to study an academically rigorous subject. It is a no brainer as to which Option we should be considering. Option C	2020-06-29 09:34:11	ANON-FDGN-6QSU-E	2020-06-29 09:34:11

[No response]	Option C	It gives schools more choice over what they would like to cover as compared to the other two options.	It does not allow enough choice for schools to teach courses that are tailored to their community. It focuses to heavily on nature of science	This allows more choice and includes content apart from nature of science, but I don't think allows enough scope for schools to meet the needs of their community.	This one allows the most choice which is a positive thing for schools as it allows them to adapt courses to suit the needs of their community	2020-06-29 09:38:33	ANON-FDGN-6QS2-B	2020-06-29 09:38:33

[No response]	Option B	Allows flexibility for teachers and students. Might be a good stepping stone for some schools to get more into teaching NoS courses. I am leaning also more towards choice A but am being conservative.	We need to be future focused and this option allows for this. Teachers could teach these strands in any context so some choice here. Courses could end up being very similar at the same school though which may reduce the variety for students if teachers are not careful. Science also involves knowing and understanding content/concepts before you can apply them to a problem solving or Nos Activity. Don't think it allows for as broad options as could be available. The Ministry would have to provide examples of these strands in different contexts.	Broader choice for all. Good stepping stone for some schools who haven't been NoS centered in their courses. My favourite choice. Provides most flexibility without loosing focus on NoS and content. Could be developed so a course have a mix of the Nos and the content strands. e.g. Living world, Earth and space, NoS and Nos. I think you should allow flexibility for schools to mix the strands as needed by the students. Some students might like a biochemistry course for example! This would allow schools to be broader for the needs of students. Please don't prescribe what we have to put	Don't like this one. Not much change from what I am doing at the moment with juniors. It does highlight NoS more than before but some schools could still opt out of this. It needs to be more of a focus for change to happen and to unify schools across the country. Could lead to vastly different experiences for students which if doing no NoS could mean those students are disadvantaged in the future...	2020-06-29 09:50:10	ANON-FDGN-6QS3-C	2020-06-29 09:50:10
[No response]	Option C	More choice for staff and students	Lack of choice- will students be prepared for further study options?	I like this one but it has less options		2020-06-29 09:50:16	ANON-FDGN-6QSN-7	2020-06-29 09:04:22
[No response]	Option A	flexibility for teaching and learning				2020-06-29 10:10:53	ANON-FDGN-6QS4-D	2020-06-29 10:10:53

[No response]	Option C	It allows for greater flexibility in tailoring courses to student needs e.g. an integrated course Earth Science course for those who are interested in Geology/Geography, Applied Science courses that link to other subject areas, subject specialist courses (bio, chem, phys, ESS), and the ability to cater for those who struggle more academically - tailor their course to suit learning needs. It also better supports those students who wish to continue on in Science in terms of developing a solid understanding of the core concepts and skills onto which L2 is built. There is already a big step up to L2 and the proposed option A course would only further exacerbate the issue. Having contextual strands also helps students better identify which areas of science they are most	Positives are the "work done in school but marked externally" approach of the externals Negatives - very hard to give students the context knowledge required for out in the workplace (especially those heading to industry), students can go through a course with an understanding of what "scientists do" and the impacts of science without actually learning any science knowledge that they can apply to their lives in the future. This is because students struggle to apply theme based learning to their personal lives. It basically fails points 3 & 4 and from a community perspective will also fail point 7. It is hard to convince people of the value of a course if the course is based around a way of thinking and doing rather than subjects. What is being proposed is very	This is much better than Option A, but the restriction of having certain subjects paired together makes it harder to tailor learning programmes to the individual learner.	Negatives - the matrix is more complicated Positives - you can cover a much broader range of content, and having the NoS included makes this a much stronger matrix than the one currently existing. With this matrix it would also be unnecessary to have a subject specific matrix for each of the individual science strands (bio matrix, chem matrix...). This matrix is also much more flexible in terms of catering to individual student needs.	2020-06-29 10:12:45	ANON-FDGN-6QSJ-3	2020-06-29 10:12:45

[No response]	Option C		the scope is too narrow.		Ensure that teachers have a range of expertise and can collaborate and share in areas of strength. Ensure that students become aware of the range of areas of scientific study and find an area which may link to their own passions without requiring them to become scientists if this is not in their nature. ie allow room for artists and sports people to study anatomy to connect with and enhance their passions.	2020-06-29 10:15:20	ANON-FDGN-6QSQ-A	2020-06-29 10:15:20

[No response]	Option C	More choice enables more flexible course design to meet the varied needs of ako. Option C enables both option A and B to be utilised as well/instead if that suits ako needs.	It fails on all counts.		Option C solves all the issues raised about "subjects fitting together more naturally" that option B raises. Empower and enable teachers to design courses that best suit the needs of ako rather than courses that fit nicely with each other. I assume all of these standards could be mixed and matched to produce different courses? Restricting this would be ludicrous and myopic.	2020-06-29 10:17:00	ANON-FDGN-6QS6-F	2020-06-29 10:17:00

[No response]	Option B	I think that it gives flexibility for schools to both have students specialising if they want to, and also to offer a general science course that will develop scientifically literate students.	I like this option as well - especially if we are looking to have Level 1 be a foundation year to work on the skills and some of the information required at Level 2. I think it meets all the criteria because it will allow schools a large scope to personalise the learning and to bring in matauranga maori that pertains to the students. I think example standards and maybe example outlines for courses would help teachers to plan their courses, especially if they are not familiar with general science courses.	I think this option is a good compromise to allow schools that want to specialise the opportunity to do so. It still leaves enough scope for a broad foundation. As above example standards and course outlines would be useful. I think the pairings are the right way to go for a broad foundation, however the physics/ess and chem/bio do also fit well.	I don't this option is good as it is basically the status quo and will not provide a broad base for students entering Level 2. Nothing will really change for those schools that are currently specialising and so their students will not recieve a good grounding in all the sciences. If you use this approach then there will be no need for extra help as schools will just continue doing what they have always done.	2020-06-29 10:27:17	ANON-FDGN-6QS7-G	2020-06-29 10:27:17
[No response]	Option C	It provides choice and flexibility				2020-06-29 10:39:12	ANON-FDGN-6QSG-Z	2020-06-29 10:39:12

[No response]	Option A	This allows greater flexibility in course design, and is at the heart of the NZC document. Unless it is mandated it will continue to be ignored nationally by many teachers. Love the standards. Plus no need to specialise at Y11, most students do not continue past Y11 with science therefore course should reflect this, and provide a broad coverage.	All positive, really like it. Flexibility, addresses NOS which has not happened before, will meet the needs of more students. Yes it definitely meets the seven criteria PLD will need to be provided to teachers to help support their implementation	Positive caters for those teachers who cannot move away from the traditional approach. If we had to have extra standards, then this would be more contextual. Does not really lead to a broad qualification as many schools will not adopt the NOS standards and just use the content ones. Physics and Chem. in one , and Biology and ESS in other as combinations	No positive, it is just what we already have with the addition of the NOS standards which will not be done by many, as the other standards would be more familiar to most teachers and therefore offer comfortability, rather than challenging their thinking to prepare a more future focused programme to their Y11 students. No it does not meet the needs of a broad, foundational qualification, it will be very directed, and like what we have now, so no change. Nothing would be needed as it would be just status quo for teachers.	2020-06-29 10:50:25	ANON-FDGN-6QSV-F	2020-06-29 10:50:25
[No response]	Option C	Greater range and flexibility				2020-06-29 11:08:51	ANON-FDGN-6QSH-1	2020-06-29 11:08:51

[No response]	Option C	So the students will have enough knowledge to move into level 2 and 3 of the individual subjects	This is ridiculous, not enough will be learnt and a GIGANTIC step backwards for any of the students wishing to head into Eng, Med and anything that involves higher learning sciences.	Why would you have 2 specializations??? There are 3 other main sciences, how will you choose which one to drop?	Only real option if we care about any of our top jobs not being taken by smarter overseas people moving here, due to the lack of knowledge from our own students	2020-06-29 11:09:07	ANON-FDGN-6QSX-H	2020-06-29 11:09:07
[No response]	Option B	This would provide a strong base for students going onto seniors specialist sciences whilst allowing students to do other subjects. Option C might be too specialised too early.	Simple, one subject. Might limit knowledge needed to be built on in latter years. Students do not have as many links to build knowledge and understanding upon.	Provides some options for students going into sneior school with knowledge to build upon.	Might be too specalised for students at this level.	2020-06-29 11:20:25	ANON-FDGN-6QSE-X	2020-06-29 11:20:25

[No response]	Option C	Gives the widest range of specialist science options to best prepare students for specialised science in Level 2, plus increases the chance that students will find at least one standard interesting and engaging, possibly driving them to pursue further science education	Would require a large amount of writing, which could be prohibitive for certain students. Does not guarantee that students will gain sufficient base knowledge to succeed at Level 2	Better than option A, however still creates an environment where certain areas of science may not be taught in sufficient detail to help students succeed in Level 2. Additionally, combining subjects requires some level of higher order thinking, that might prevent success of students	Appears to provide the best range of subjects and the requirement for all schools to teach the range of subjects in sufficient detail for students to succeed at Level 2 Science. Similar enough to the current NCEA Level 1 system that huge overhauls will not be required. This can help to prevent the case where student learning is inhibited because teachers have had to change the entire curriculum	2020-06-29 11:25:22	ANON-FDGN-6QSB-U	2020-06-29 11:25:22

[No response]	Option C	Flexibility and option of having tailored courses for low ability and high achievers.	Far too generic. No opportunity to teach 'pure' science. Very watered down.	Don't like this at all. What will happen is that Physics and Chemistry will become the 'harder, only for the smart kids' option and Biology will be looked at as 'easier' science.	The greatest range of flexibility. Assuming that we can mix and match as we do now, this will allow for teachers to pick standards of interest to their students and balance that with the knowledge, skills and interest of the teacher too. This option also allows for a better pathway into Level 2 and 3 and then beyond into university study.	2020-06-29 11:26:40	ANON-FDGN-6QSZ-K	2020-06-29 11:26:40

[No response]	Option C			I believe it meets the seven criteria. It has more options to choose from, which can be appropriate for different programmes for level 1 Science. This option can lead to Level 2 and level 3 Chemistry/Biology/ Physics. The combinations Physics and Chemistry subject matrix fits in well. The subject option groups could ensure that the content covers the basics which could lead to specific subjects in Level 2 such as chemistry/physics/biology etc.		2020-06-29 11:28:29	ANON-FDGN-6QSK-4	2020-06-29 11:28:29

[No response]	Option B	Option C is too close to the status quo and option A is a step too far at this stage. I think B has a much better balance between the nature of Science strands and context strands.	The positives of this approach is the flexibility it enables in terms of context. Schools and students can explore different learning in greater depth and engage interests in some areas. Research skills should be able to be taught better. Students should be able to develop greater thinking skills. Negatives include: The depth of understanding needed in some of the contexts may be too controversial or too difficult for some students to gain a full grasp. Writing abilities would need to be much higher than they are presently. Research skills will need to be taught well from an early age. The foundation knowledge for level 2 and 3 will need to be clearly spelt out for students and teachers so that students can cope with later levels.	Option B is my preferred option as it a good compromise between needing to work through the nature of science strands and giving the academic students the academic rigour they need moving forward. It would allow for some more creative courses to be developed where students would be able to explore some interest areas while still gaining a thorough understanding of key ideas. With the aging science teaching fraternity, it would be less of a challenge for them to understand how to teach the standards and fit the new nature of science standards into the matrix. Can't see any obvious negatives	I am not in favour of this as it feels far too close to the status quo. The positives would be that it would be less work for teachers. The negatives would include that we would have much the same as what we have now. We have a system which is much better than School certificate, but is not perfect. This idea would get students thinking far less and just put them through the same as what they are doing currently.	2020-06-29 11:30:58	ANON-FDGN-6QSF-Y	2020-06-29 11:30:58

[No response]	Option C				It provides more options to cover all science strands to enables the learner to have a taste prior to choose a specialty in higher levels. Students who move school could be disadvantaged as there will disparity between schools and their offered courses.	2020-06-29 11:32:48	ANON-FDGN-6QSA-T	2020-06-29 11:32:48
[No response]	Option C	I teach an all internal science class for those pupils who are not continuing in science at Yr 12/13. It is sad to see this not continuing at many of these pupils are losing the opportunity to cover a wide variety of learning in Science as the domination of obtaining external credits will over take quality and coverage of content.				2020-06-29 11:43:32	ANON-FDGN-6QS5-E	2020-06-29 11:43:32

[No response]	Option C	it gives students greatest choice and opportunity to learn and progress in different subjects. This choice is the only only one which meets the needs of the curriculum. I hope the decision is based on what is best for students and not saving money by reducing the number of standards to be written,reviewed, marked etc.	i see no positives. it just restricts student and teacher choice. Science could not be taught effectively with this option.	positives are it is better than A with more choice but negative is it is still too restrictive and would not allow science to be covered in the scope necessary for an ongoing science research/ science innovatively led development / progressive society. other combinations would not help every combination of subjects is a reduction in choice for students and Science taught/learnt.	Positives are this option provides the choice and opportunity for students to learn properly about all Science. It will not restrict a science knowledgeable society which can benefit all. subject expert groups need to revise/rewrite standards, exemplars, specifications etc. Ministry needs to stop trying to cost cut at the expense of students learning	2020-06-29 11:58:35	ANON-FDGN-6QS1-A	2020-06-29 11:58:35
[No response]	Option C	More variety to meet the needs of all students.				2020-06-29 12:03:01	ANON-FDGN-6QSC-V	2020-06-29 12:03:01

[No response]	Option B	This was a hard decision, because I don't like any of the options. Option B is the most balanced in terms of keeping everyone happy - not too many standards, ability to bring in some specialist content, but ensuring that the NOS standards are still valuable in a matrix - particularly with the option of developing an internal only course for students. Option A is just not good enough for NZ, and Option C is ridiculous.	Option A represents an assessment matrix that was developed under the assumption other subject standards would assess content. When it became evident that there was going to be no other subjects, the NOS standards became completely inappropriate for assessing L1 Science. They could be fun to use, but they represent a massive shift for most of the educators in NZ. They are highly conceptual yet lack the detail for students who go onto a science specialty in L2. I believe that if Option A is the only approach considered for the future, the standards needs to be changed to ensure there is some mandated content assessed at L1. Option A would be more palatable if there was evidence that this style of assessment actually makes a difference for success in science. This means trials, research	Positives - at least students who love science will be able to access some specialist content rather than conceptual ideas which are complex and not easy to pin down. It gives more of a pick and mix option for teachers and curriculum leaders to develop courses around the needs of their school. Negatives - This option is a forced plan which assumes that 2 standards per specialist area fulfils the needs. For example, the NOS standards are already quite "bio and ESS" heavy in their high literacy requirement. Do they even need specialist standards? Where as the numeracy requirements of Chem/Phys means that they need	This option is even more ridiculous than A or B, and is a knee jerk response to teacher's complaints from around the country. On the surface it appears to fit the bill and more traditional schools will be happy, but the idea of 10 externals in Science removes any progress from this learning area. Its completely predictable that the SEGs will just stick to what they want in L2/3 standards and it will be a filtering mechanism for senior specialties. For example - Physics would probably do Mechanics, Electricity, Waves and Investigations. These would then feed into L2, and L3 and schools will just filter and sort	2020-06-29 12:06:52	ANON-FDGN-6QSM-6	2020-06-29 12:06:52

[No response]	Option C	Offers a pathway for non science students to study some science as 1 subject- and it offers specialisms so future engineers can study physics, future pharmacists can study chemistry and future doctors and vets and farmers can study biology in more depth which will offer a better foundation for those going onto specialist science degrees.		Physics and chemistry as 1 option and chemistry and biology as another	Having a 'broader' foundation is only of benefit to non scientists. If anyone wants to go on to study a science based subject at university or work in a particular area then they will need more depth, eg get a job in a lab after school so chemistry and biology as separate subjects is better	2020-06-29 12:13:54	ANON-FDGN-6QSR-B	2020-06-29 12:13:54
[No response]	Option B					2020-06-29 12:18:48	ANON-FDGN-6QS8-H	2020-06-29 12:18:48
[No response]	Option C	So we can successfully incorporate science knowledge and test it at an appropriate level. It comprehensively covers the required specialist knowledge they need to build to access higher level science education.				2020-06-29 12:23:23	ANON-FDGN-6Q8P-E	2020-06-29 12:23:23

[No response]	Option B	It is a compromise of streamlining the standards on offer, whilst still retaining some structure from the specialised subjects.	I do believe that this option is too open. The standards would have to be very general (as it is not linked to any specific content) which would then force each school/teacher to invent their own content to be taught. This would mean a huge increase in workload waiting for us in 2021. I can see how it is well intentioned in view of the seven criteria, however, any changes need to consider the workload of teachers. This option is unrealistic.	This is more of a compromise that starts to address the seven criteria. By adding the specialised subject strands I would hope that the content would be broadly prescribed and clear with some limited flexibility to add local context by individual schools. It would mean an increased workload that is hopefully manageable if the standards are not too bread and general.	This is very similar to the status quo, just limiting the overall number of standards. This would be the safe option, considering that there has been a lot of upheaval due to Covid this year.	2020-06-29 12:30:19	ANON-FDGN-6Q8N-C	2020-06-29 12:30:19

[No response]	Option C	More range and can make individual plans for students depending on their career pathway.	Very limited and quite reliant on a few standards with extra work. Quite in depth for students to achieve. Low decile schools at a disadvantage.	Choosing the combinations relies heavily on the pathway the student wants to go. Becoming a nurse chemistry and biology are important, not biology and earth and space science. So each school needs to tailor the programs according to student needs.	I believe this is the best option as it provides more options to tailor courses to students needs and use the learning environment in your area. The ministry and subject expert groups need to take into consideration schools access to different environments, expenses, student needs in different decile schools and teacher expertise in the different strands. Smaller schools often have IEP for student learning, whereas big school offer varying science classes with different content, so this needs to be taken into account also.	2020-06-29 12:41:33	ANON-FDGN-6Q8S-H	2020-06-29 12:41:33

[No response]	Option C	This allows schools choice and flexibility, we can select some NoS standards and some more contextual standards. Specialist courses can be created using the additional standards and these will no doubt contain some NoS aspects as well.	Positives - very little. NoS covered well, but there will be major issues otherwise with student (and teacher!) boredom, frustration with the high literacy requirements, lack of academic rigour in the assessment (need an exam of some sort), lack of preparation for Level 2 Sciences, widening the gap between high and low achievers, I could go on and on..... This option cannot work effectively, regardless of how much support is offered, it will be a disaster for NZ Science Education for years. A óne size fits all approach like this would be a big step backwards.	An improvement on option A for sure, with more choice and flexibility, and hopefully not as ridiculously high literacy requirements as option A. I would still keep the 4 strands separate, mashing them together at this stage is not necessary, there are links between the strands higher up at Level 2 and 3. Teachers can select standards for different strands to make up their courses as they see fit - the one size fits all approach will be a big step backwards, in my opinion, removing one of the best aspects of NCEA.	Plenty of positives - has choice and flexibility to create appropriate courses for different groups of students, prepare them properly for Level 2 courses, can still use the NoS standards as well. Will still be considered rigorous if there is at least one examined paper for each strand. Ministry could advise that at least one NoS standard is included in any Science course.	2020-06-29 12:43:04	ANON-FDGN-6Q8D-2	2020-06-29 12:43:04

[No response]	Option C	Because it is the best option for our pupils at our school.			Gives a nice broad range and option for all pupils to excel. I do believe this is the best vision for NCEA Level 1 as it is broad and gives a good solid base. Ensure that the specialist areas/papers have plenty of resources to help teachers inexperience in these subjects.	2020-06-29 13:03:44	ANON-FDGN-6Q8Y-Q	2020-06-29 12:57:30
[No response]	Option C	Wider base for good overall science knowledge				2020-06-29 13:12:28	ANON-FDGN-6Q8U-K	2020-06-29 13:12:28

[No response]	Option C	This structure is a far better preparation for the requirements of Level 2 subjects.	Looks like an end qualification rather than something that will prepare students for Level 2 study. I don't think it meets all seven standards. This structure will be far too general and project-based, and cannot see where factual knowledge fits into this. Very likely that Biology will predominate over other science subjects, given that most science teachers are biologists. Will not achieve subject balance. Schools very unlikely to accept this, or to reverse any decisions to opt out of Level 1 based on Option A.	Better than Option A. Physics and ESS fit well, Bio and Chem could fit together too. MoE would need to develop Physics and Chemistry ability among the mainly Biology teacher cohort. How does this structure fit with future Level 2 subject structure? What would students do with a Level 1 Science qualification like this? Would it be a ticket to Level 2, or would it stand alone? Schools that are considering opting out of Level 1 are unlikely to change their minds after seeing Option A, but Option B could be useful to smaller schools with fewer subject specialists.	Prefer this option. Maintains a broad approach, and would be a reasonable preparation for Level 2 subject study.	2020-06-29 13:49:11	ANON-FDGN-6Q82-G	2020-06-29 13:49:11

[No response]	Option C	Having more specialised options at Level 1 allows for a natural transition in L2. It will also give them a foretaste of what the subject entails.	The broad based approach is a good concept. I am a believer in mastering some of the core subject before looking at a more integrated context.	I prefer this over option A but would prefer a deeper look at the core subject areas.	This is my 1st choice as I believe that it sets students up to approach broad topics or questions with a deeper understanding.	2020-06-29 13:50:28	ANON-FDGN-6Q83-H	2020-06-29 13:50:28
[No response]	Option C	The ability to tailor the year for a well rounded general science course, but still have the ability to teach specific subject related papers to aid students in specialization in future studies.	Would not set students up well as there is not the ability for in-depth study on a specific strand of science. The general broad structure could lead to a superficial understanding of science.	There could be several different options for subject groups as chemistry and biology fit well when considering biochemistry. Earth and Space also has some clear links to physics and chemistry through astronomy and geology respectively. So confining biology to only one other subject is a limiting factor. With increased flexibility of sub-topics with clear links to other subjects to create a full paper could help improve this idea.	The ability to still offer in-depth teaching and learning on a particular subject is ideal. If there is also the ability to couple subject areas together for larger learning and assessment opportunity this would help with the "broader" approach wanted.	2020-06-29 13:57:27	ANON-FDGN-6Q8T-J	2020-06-29 13:57:27

[No response]	Option C	It allows for flexibility for stdeunts who have strengths in differents areas of science	It doesn't set students up with a foundation for level 2 - negative See no positives	The combinations are correct and fit more naturally than other options.	Allows students to have a broader view of science and pick where their strengths are and interests are, as well as where communities can follow their interests and strengths by using what is around them to provide real connections.	2020-06-29 14:36:46	ANON-FDGN-6Q84-J	2020-06-29 14:36:46
[No response]	Option B	gives options to include some specialist standards but not too many. Nice balance between flexibility and specialization - want to be flexible but keeps it at the foundation level too soon	Lack flexibility for diverse student groups and doesn't lay the ground work to excel in senior sciences (y12 would be teaching y11 and 12 in one year)	I think physics and earth and space fit well togeather	Too many options and therefore allows schools to create speclised courses at y11 which leads away from the foundational qualification ideal. Also a huge amount of work rewriting this many tasks	2020-06-29 14:39:19	ANON-FDGN-6Q8J-8	2020-06-29 14:39:19

[No response]	Option A	I think at Level 1 it is still important for students to have a full overview of science, rather than specialising in disciplines so early. In practical terms I think most students will be taking 5 subjects, with Maths and English compulsary. Offering specialised courses will actually limit students from what they are able to do outside of science and we are still trying to grow well-rounded people. All the disciplines really do interconnect and I think we need to maintain that as long as possible. In the bigger picture, I do worry that Biology and Earth Science are starting to become disciplines which are considered 'spud science'. We see to demand less and less of those studying them and I can see self-selection and 'guidance' into a natural science course cementing that reputation. I think	Well geez, putting all this into one feedback section is a big ask. Positives: It's a catch-all which allows links between different parts of science to be made. As it's 1 course it's unifying under what we expect a L1 student studying science to have learnt. It makes things less confusing: science is science. Negatives: Some people will have a cry about it not allowing so much for individuality. But I disagree, the contexts can still be mapped to the students while covering the same content. The standards have to be *really* well designed before they're implemented, to avoid course design becoming 4 units, 1 unit per term. Yes it fulfills the criteria. What really needs to change is how specific the science curriculum actually is. As a new teacher it's a huge challenge to 'read	Nah well the thing is if a kid wants to do Health science, they'll be expected to take both specialised subjects to get into the courses in Y12. That, plus English, plus Maths, means they really only 1 get other Arts or Commerce etc. option which I think is a bad move so early in school. It could make a nicer balance to match Bio and Chem, and Physics and Earth. A more even balance of language vs. mathmatical thinking. And it would stop Bio and Earth being considered the spud subjects of the sciences.	No. Just no. It's exactly the opposite of a broad balanced approach this review is supposed to be helping with. Plus it's a real shame for kids to miss out on their favourite topics just because they had to prioritise other areas of learning.	2020-06-29 14:44:14	ANON-FDGN-6Q8Q-F	2020-06-29 14:44:14

[No response]	Option C	This options offers maximum flexibility for learners and schools. It is possible to respond to the cohort and teach from the local curriculum if events arise during the year with this level of choice. We will also be able to cater for more neurodiverse and other diverse learners with a range of standards to use to assess their needs. It will also be possible to tailor a range of Level 2 courses to suit our school if we can scaffold back to level 1 and have choice here. If we have to teach remotely, more achievement standards means that more flexibility is available. It is a much more equitable option.	This option limits the ability to teach different branches of the Science curriculum effectively. I do not believe that it reflects the flexibility inherent in NCEA.	The positives are more flexibility that Option 1 and the opportunity to group Sciences together, however it does not allow for as much scaffolding as Option 3.	This option has the greatest flexibility and ability to respond to all students as there are more standards to choose from. The learning that students do can be better assessed with more standards and there is a greater ability to personalise for different classes and individual learners with different needs.	2020-06-29 14:46:33	ANON-FDGN-6Q86-M	2020-06-29 14:46:33

[No response]	Option C	It allows for schools to adapt their science programme to best suit their students. It is not a 'one size fits all' approach that option A gives.	Terrible idea. Too broad and not enough content knowledge. It might be good for students who have no intentions of continuing science but does not help out our students who are looking to study sciences in the future. There is a big enough step going from L1 science to L2, this will make it worse	Better than option A but makes it difficult for future biochemists or Astrophysicists who are forced to take 2 science subjects and spend 1/2 the year learning about content that is not relevant or an interest to their future. Switching to chem/bio and phys/ESS would create the same problem, it is better for schools to be able to make up their own systems for how they would like to teach science.	Best option. It allows for schools to create their own science programme how they best think it would suit their students. The general science programme could be used for students who do not wish to continue science while the contextual strand classes can better prepare students for L2 and L3 science programmes.	2020-06-29 14:49:09	ANON-FDGN-6Q87-N	2020-06-29 14:49:09

[No response]	Option C	Allows students to follow their passion in a science by being able to provide a courses in 5 areas. and I am guessing this would cater for skills and knowledge in particular areas.	I want flexibility particularly if we decide to use some of the standards at the lower levels. criteria 4 suggest that.	Again I would prefer to pick standards suitable for students. Students have completed generic science up to year 10 and offering some flexibility can help to maintain interest. option b is sort of the option if we cant agree on A or C Option C please	yes I believe this offers flexibility to teachers. Teaching Science effectively i ssomething teachers need to own and buy into. it will need to be ongoing to ensure new persons coming into science teaching recieve the required PLD	2020-06-29 14:52:18	ANON-FDGN-6Q8G-5	2020-06-29 14:52:18
[No response]	Option C	It is important that students are able to study a specialized Science if they wish to. General Science does not challenge the more motivated students. This option also allows schools to offer courses to a cohort which gives them more choice.	No I do not. The course does not offer enough subject content and background knowledge.	Possibly chemistry and Biology.	This option allows for a broader selection of study with a greater degree of rigor. It covers a wide area of the Science curriculum. This will allow Science to be taught effectively. Students who move on to Level 2 of NCEA will have the foundation to successfully study the senior Sciences.	2020-06-29 15:01:38	ANON-FDGN-6Q8V-M	2020-06-29 15:01:38

[No response]	Option C	Means there are specific standards for each subject to focus on but gives teachers options to add in content for learning.	I fear that students will opt out of taking Science with less credits available to them. Although this should not be the reason, the reality is that Students often choose subjects based on the number of credits available for them to achieve. Positive is that it opens up assessments to be about different contexts. Negative is that if students achieve a standard on one context they may be unmotivated to learn about other contexts.	This option is ok, adds extra specific Science. I like the idea of one of each subject for internal and internal but would question what these would cover. Again how many credits would be available, are other subjects changing the number of credits.	Still prefer the idea of subjects being separate as students need subject specific info to carry into next level. Also at level one students are still driven by credit number. How many students will stop studying Science if they have small amounts of credits available to them.	2020-06-29 15:10:55	ANON-FDGN-6Q89-Q	2020-06-29 15:10:55
[No response]	Option C	We need to prepare students thoroughly for a career in Science	too restrictive	Biology needs to be more prominent	most comprehensive	2020-06-29 15:18:26	ANON-FDGN-6Q8X-P	2020-06-29 15:18:26

[No response]	Option C	More options for students. The declarative knowledge that is too important to be left to chance is actually assessed so that it won't be left to chance by teachers.	It meets criteria 7 - content knowledge ensures this is a robust national assessment. For all options but particularly this one teacher need resource for matauranga Maori. In addition we need modelling on how to approach this - particularly for standards where critiquing of the science is also required. We need modelling on how to achieve the delicate balance between culturally responsive and scientifically rigourous.	Negative is that Biology and ESS is a strange fit. Biology and chemistry to make Biochemistry would be better and then you have Physics and ESS making astrophysics options.	Positives are more flexibility in making courses for students.	2020-06-29 15:22:55	ANON-FDGN-6Q8E-3	2020-06-29 15:22:55
[No response]	Option C	ability to construct a course for year 11 with a broad focus	Students will not be sufficiently prepared for level 2	Different combinations of subjects are needed ie. Biology with Chemistry	Broad range of choice for students to complete standards in different subject areas in Y11 so they are open to going into each of the different topics in Y12	2020-06-29 15:39:34	ANON-FDGN-6Q8B-Z	2020-06-29 15:39:34

[No response]	Option C	Because it is more specific for the different strands of science. Gives students a good idea of how science differs at Level 2 and 3.	I think students would find this course quite confusing as it is not specific to the different strands of science - therefore it would make it hard for students to be able to pick courses in further years or decide which area of science they enjoy.	I think that this is slightly better than option A as there is more structure to the different areas of science. The best combination of subjects is biology and earth/space science, and then chemistry and physics.	This option is the best. It gives schools many options to alter their courses to allow for all of their students to access the learning. It also allows students to get a strong idea of the strands of science and which ones they enjoy. This can be taught efficiently as science teachers generally are stronger in one area of science, therefore will be able to teach their strand of science to an appropriate level for the students.	2020-06-29 15:39:54	ANON-FDGN-6Q8Z-R	2020-06-29 15:39:54

[No response]	Option C	it is the best of both worlds and is the least change possible - ps where is the ag hort stream? ps why have you added in NOS? it seems to be a 2007 left out option that has been gaining ground over the last 13 years I suspect it is coming from the teachers of NOS Where did NOS come from? Why is it here? Is it real? Is it socuial science for science? what is its content? is it a failed 1990s - 2000s idea that si now redundant? trace where and who developed NOS and ask Universities if it is now or was ever real current or useful? i think its some sort of history of Science or Science through Gender studies eyes or Science through indigenous or Maori eyes Is it still useful accurate	This is a grey mush stupid option and is too free form even for me (which is saying something) It is a non curriculum a do whatever you like - its total freedom but no direction no connection no analysis this is a random choice and an abnegation of the whole new curriculum process it says do whatever you want its a grey blancmange option quivering with its own self importance and rectitude but ultimately a flummery or a fool and will be a NOS PD junket It begs to be rorted by teachers and the externals cover too wide a universe to be assessed reliably All externals should be dropped as all they teach is how in a panicked 3 hours - how to sit 3 hour exams	This is some weird compromise that will please nobody This all seems to be a covert attempt to introduce NOS as a subject this just makes science worse its 4 subjects plus NOS so now its worse than it is now we need to teach internals ONLY All externals should be dropped also there is no matauranga maori nor pasifca option i would suggest a Matauranga Maori (Essential mandatory must pass course) Internal An optional Pasifica Science Course (Internal) A Nature of Science (NZ or Aotearoa Centered) (Internal)	it is the best of both worlds and is the least change possible - ps where is the ag hort stream? ps why have you added in NOS? it seems to be a 2007 left out option that has been gaining ground over the last 13 years I suspect it is coming from the teachers of NOS Where did NOS come from? Why is it here? Is it real? Is it socuial science for science? what is its content? is it a failed 1990s - 2000s idea that si now redundant? trace where and who developed NOS and ask Universities if it is now or was ever real current or useful? i think its some sort of history of Science or Science through	2020-06-29 15:47:34	ANON-FDGN-6Q8K-9	2020-06-29 15:47:34

[No response]	Option C	Allows more flexibility for schools to pick standards that are relevant for their students. Means that we are not so pigeon-holed.	positives: simpler standard layout, very general negatives: only scope for any school to offer one "line" of Science in year 11. No possibility for students to take more than one science option. Very high literacy focus in these standards with no room for schools to move on this. It definitely makes Level 1 more broad, but maybe so broad that it's irrelevant? Science students do need foundational understandings of science concepts in order to move forward. These standards take away any need for this which makes it more broad but doesn't help students who are actually genuinely interested in pursuing Science as a career to get a good grip of what it's like. Hard too make calls about Level 2 options having not studied anything similar. If this is the finalised option, ministry needs	Positives: some compromise between general and specialist standards Negatives: Only a few standards offered in each specialist area Broader than it is now, but still allows students to get a bit more of a real feel for what studying science at Level 2 and 3 may be like. At the moment it seems that broader has been taken to mean not very foundational! I think the bio/earth and space and chem/physics works well. In reality any combination works.	Positives: allows schools a lot more choice and the ability to craft programs of study to suit their students. Some content strands would be good as learning content is an important skill in itself if students do want to go on to study science. Negatives: Lots of standards. Not as general I think this epitomises BROAD and FOUNDATIONAL. It allows us to learn foundational ideas to each of the science strands as well as some really general standards. I think most schools would currently offer a variety of Level 1 Science courses and I believe that this option allows us to continue this. It is interesting that	2020-06-29 15:53:49	ANON-FDGN-6Q8A-Y	2020-06-29 15:53:49

[No response]	Option B	It includes both Nature of Science and content-specific standards, but without being unwieldy in size. Option C seems very much like the status quo. There are too many standards.	Positives: Simple and good as a broad introduction to science. Negatives: The subject-specific content could be hidden or lost. It could be used flexibly by schools but I worry that it would not really support a transition to level 2 or 3 where content knowledge becomes more important. A risk for reputation for NZ qualifications, given that I'm not aware of anything like this in the world. (But maybe that's a good thing?)	Positives: Fairly simple Negatives: Combining of Physics with Chemistry, and Biology and Earth Science, is a bit artificial. Why these combinations? One might put Physics with Earth Science and Chemistry with Biology for example. This option does allow flexibility with learning and could be used as a basis to transition to levels 2 and 3.	Positives: Explicitly covers the full range of science skills and content. Negatives: Too many standards. This gives flexibility, but maybe too much. Schools would need some guidance on how they are expected to navigate through it. Could easily be used to help students progress to levels 2 and 3 in any science subject.	2020-06-29 16:02:05	ANON-FDGN-6Q85-K	2020-06-29 16:02:05
[No response]	Option B	Some concrete structure and science knowledge, but still with flexibility	Way too waffly			2020-06-29 16:04:25	ANON-FDGN-6Q81-F	2020-06-29 16:04:25
[No response]	Option A	Not necessary to specialise in sciences at Level 1. Should provide a good broad knowledge for both the science leaver and the science progressor.	See comment above	This would be a nice alternative at Level 2 but not necessary and doesn't meet the need of a broader foundational certificate at level 1.	Doesn't meet the need of a broader foundational certificate at level 1.	2020-06-29 16:05:05	ANON-FDGN-6Q8C-1	2020-06-29 16:05:05

[No response]	Option C	We can provide comprehensive options to our students that cover the required specialist knowledge they need to build to access higher level science education.				2020-06-29 16:09:49	ANON-FDGN-6Q8W-N	2020-06-29 16:09:49
[No response]	Option C	Provides maximum flexibility and allows schools to be responsive to the cohort of learners in front of them				2020-06-29 16:29:40	ANON-FDGN-6Q8M-B	2020-06-29 16:29:40
[No response]	Option C	This will ensure the new Zealand curriculum is covered involving all branches of science. It will provide diversity of course and option to a variety of learners. Just a note: one size does not fit all and the option A and B is exactly that.	This approach will diminish the teaching of science across schools. The areas of the curriculum will not be covered.	Science is not a subject but a combination of knowledge fir for a purpose. To be able to understand all brunches of science a minimum knowledge of each branch is needed so a whole picture can be seen.	To meet students needs a range of subjects needs to be offered. Options means students can explore different aspects of science and not narrowing to one direction.	2020-06-29 16:38:39	ANON-FDGN-6Q8R-G	2020-06-29 16:38:39

[No response]	Option C	Gives the chance for some academic rigour and science, rather than it becoming a literacy assessment.	I don't believe that there are any positives for this option. If we are wanting a broad foundation qualification then our students need a broad exposure to all the science strands. We are in danger of turning our students off science if this option is adopted as it has a massive literacy bias. Our male students would find this option absolutely horrendous. Pleased do not go for this option, it will be extremely detrimental for science in schools. Our students actually need to learn the basics of the strands before they are required to write adnauseum about it.	I think we need the 4 separate strands for our students to be sufficiently prepared for L2 and 3 in separate sciences.	Can't see any negatives. This option allows for schools to build a wide ranging science course at L1.	2020-06-29 16:41:42	ANON-FDGN-6Q88-P	2020-06-29 16:41:42

[No response]	Option C	We are really approaching personalised learning and the more there is to choose the more learners feel that they can excel in their chosen area of preference.	Positives - open ended assessment Negative - generic approach does not suit learners who struggle with Scientific Method. Does not support pathway to level 2 Learners are credit focussed and have the culture of placing emphasis on gaining credits rather than learning.	Living World which is heavily based on literacy. Material World & Physical World are have less literacy but should be kept separate to focus on skills pertaining to each area offering personalised programmes of interest. BioChemistry is popular but could be included by the teacher contextually in the Chemistry programme or Biology programme. Bring back Chemistry skills in the Material World and bring back Physics skills in the Physical World to meet criteria seven where the NZQA qualification is recognised as good as Cambridge or International Baccalaureate exams	Insufficient numbers of qualified Science teachers is not a valid reason to simplify the matrix. The ministry could attract more teachers into the specific fields of Science using the same strategies used in the "Girls in Science" promotion in the 1980's and 1990's. The modern "Scientist do not all wear white lab coats" promotions are a good start because they show real people purposely doing Science. Encourage people in industry to return to the teaching profession!	2020-06-29 16:59:24	ANON-FDGN-6QKP-1	2020-06-29 16:59:24
[No response]	Option B	Still allows for breadth while increasing the building of science knowledge / skills for higher levels of Science	This has good breadth but limits the exposure for those Science students going on to science at university	This still allows for both breadth and expansion of skills	this makes the course way too narrow and does not allow for breadth of learning at level 1	2020-06-29 17:08:11	ANON-FDGN-6QKN-Y	2020-06-29 17:08:11

[No response]	Option B	Science is a huge curriculum area. Cutting the current number of standards down to 4 would severely restrict opportunities for students to explore the sciences at Level 1. It is important to have a meaningful course that prepares students for the senior sciences. Option 1 does not provide this. Option 2 is a good compromise between option 1 and 3.	I find it difficult to see any positives with this option.	I like the mix suggested. Many schools currently offer a physical sciences course which is made up of the current chemistry and physics standards. The rationale behind this is that there is a lot of required knowledge needed for L2 Chemistry and Physics that then leads on to L3. A general course at L1 does not adequately prepare students for L2 Chem and Physics. This is not such an issue with senior Biology. Obviously, for schools to be able to teach science effectively they need to be able to employ subject specialists.	This option is similar to the current range of standards available. I do not dislike this option but believe option 2 is more streamlined and provides enough for students to get a meaningful course.	2020-06-29 17:14:39	ANON-FDGN-6QKD-N	2020-06-29 17:14:39

[No response]	Option A	Too many option lines at secondary schools are swallowed up at Level 1 by three or four science options. It has decimated other subjects and does little good to students who still have to study multiple sciences at higher levels without major benefit.	Yes it meets the criteria. Having a level one student's options dominated by science discredit the institution and qualification. This is the only way forward.	Going from one to two is pointless. Stick with one.	A complete capitulation to pressure from the wrong groups.	2020-06-29 17:37:15	ANON-FDGN-6QKY-A	2020-06-29 17:37:15
[No response]	Option C	It allows the students to engage with science, not the social science of option 1. It also seems to have been completely forgotten that huge numbers of students actually enjoy science	It is boring drivel	Marginally better tha A,but still discrominates against students who enjoy science .	It allows students who want to study the chance to do so	2020-06-29 17:38:04	ANON-FDGN-6QKU-6	2020-06-29 17:38:04

[No response]	Option C	The specialisation would afford sufficient depth of content to support subsequent years' study.	Ill-defined generalist approach. Please don't pick this one.	Space science and physics are a natural pairing given stellar nucleosynthesis and nuclear physics at level 2. At this time space science standards are shoved to the wayside as physics courses pick mechanics, electricity, nuclear, and waves standards to fit into their limited annual programme. This will likely continue with this regime.	This runs a small risk of paralysis by indecision. As science depts try to outline the programme at their schools, each specialist area will try to favour support for their own strand.	2020-06-29 17:47:25	ANON-FDGN-6QK2-3	2020-06-29 17:47:25
[No response]	Option C	This provides pathway to L2 Bio Chem and physics. it also provides an opportunity have have different science courses at L1 There are standards which may require less report writing ie short answer questions of investigation which cater for a wider range of students.	Option A assessment incorporate alot of literacy skills, which can disadvantage learners. It also does not provide a pathway to L2 sciences.	This option does not allow for contextual strands .	it is the best option	2020-06-29 17:50:30	ANON-FDGN-6QK3-4	2020-06-29 17:50:30

[No response]	Option B	Streamlining without losing curriculum specific preparation for L2/L3/university	Too generic, hard to provide enough content to prepare them for future study/work	Good compromise of both worlds. I think phys/chem and bio/earth combo works well, but you could also do phys/earth and bio/chem. Schools can probably decide that for themselves with the flexibility of some specialised standards to choose from.	Status quo. Doesn't really adapt to meet the broad criteria and it looks like you did nothing. Schools could continue to provide their own tailored combinations to suit their own student body.	2020-06-29 17:57:18	ANON-FDGN-6QKT-5	2020-06-29 17:57:18

[No response]	Option B	This would allow more options for both science for all and science for the future scientists.	There will need to be a lot of resource shaping to develop material that is suitable for the option one standards. This will require time and sharing amongst science teachers. We are generally good at this as long as we are given the time. Depending on the context used, the standards could be very good at opening up understanding of science and how science works. As a pathway into level two. That is not as likely to occur unless the contexts at level one are prescribed for those going into particular sciences at level two. Already the gap between level one and two in chemistry is massive if certain level one chemistry standards are not taken. while students can do this and get good results. The majority find the pace at level two daunting.	It has both the science for all standards and standards that will suit science for scientists. It may not have enough choice for those wanting to do pure sciences. some students are very focused on science and would not get enough choice with option B however it would force many to do the nature of science strand rather than just paying lip service to it. The mix of physical sciences and life science is used in some schools for those going forward in those subjects.	Could equate to the same old same old with many teachers just choosing to teach the same old content driven science classes that they have always taught.	2020-06-29 18:24:56	ANON-FDGN-6QKJ-U	2020-06-29 18:24:56
[No response]	Option C					2020-06-29 18:29:38	ANON-FDGN-6QKQ-2	2020-06-29 18:29:38

[No response]	Option A	Offers a general experience before greater specialism at L2 onwards	Clear and meaningful exemplars needed for internal and external assessments. Consistent external moderation			2020-06-29 18:40:46	ANON-FDGN-6QK6-7	2020-06-29 18:40:46
[No response]	Option C					2020-06-29 18:46:32	ANON-FDGN-6QK7-8	2020-06-29 18:46:32
[No response]	Option C					2020-06-29 18:48:48	ANON-FDGN-6QKG-R	2020-06-29 18:48:48
[No response]	Option C	Because the death of specialisation is a terrible thing.	Students should be allowed some specialisation at level 1,	A better option, but not as good as C.		2020-06-29 19:01:43	ANON-FDGN-6QKV-7	2020-06-29 19:01:43
[No response]	Option C	more diversity in topics	how do you moderate this?	limits student choice for higher level subjects		2020-06-29 19:02:44	ANON-FDGN-6QK9-A	2020-06-29 19:02:44
[No response]	Option C	Have high standards				2020-06-29 19:06:56	ANON-FDGN-6QKH-S	2020-06-29 19:06:56
[No response]	Option B	Allows more specific teaching of content, without adding too many standards at Level 1	Too narrow, doesn't set students up for Level 2	I like that combo, and I think it strikes a nice balance.	It has too many standards	2020-06-29 19:13:07	ANON-FDGN-6QKX-9	2020-06-29 19:13:07

[No response]	Option B	This option seems to offer the best of both worlds - the NoS strand is an important one that all students should be exposed to. However, there are some students for whom this will not be "enough" and who thrive on the more knowledge-based curriculum that the other 2 strands will offer. Option A would not suit those students. Also, for those students who intend to pursue a career in Science, the greater depth that would be covered in the non-General Science would suit them. However, the choices in Option C appear to go too far away from the NoS option - many would just not offer the NoS standards but make their own "general science" course from the remaining standards				2020-06-29 19:20:32	ANON-FDGN-6QKE-P	2020-06-29 19:20:32
[No response]	Option B					2020-06-29 19:45:12	ANON-FDGN-6QKB-K	2020-06-29 19:45:12

[No response]	Option C	More opportunities for students to take more 'science' subjects so they don't have to take other random subjects just to ensure they gain the required number of credits. Lots of students at level 1 choose to take 2 or more science subjects	Too restrictive	I don't feel it is right to combine any of the sciences as they are so different and require quite different skills	Great! Much more flexible and plenty of options for students to specialise or generalise	2020-06-29 19:46:40	ANON-FDGN-6QKZ-B	2020-06-29 19:46:40
[No response]	Option A	Less is more. School is to gain foundations across the broad scope and students shouldn't be making a decision to narrow down to the sciences when they are only half way through year 10 (picking classes for year 11)				2020-06-29 19:48:44	ANON-FDGN-6QKK-V	2020-06-29 19:48:44
[No response]	Option C	Allowing students to specialise early is an ideal way of engaging them, particularly those who have a career in mind. Only offering general science will not push and develop those who need extension.	I think this will limit options for students and not help them understand specialties.		I feel this is the best option.	2020-06-29 19:52:30	ANON-FDGN-6QKF-Q	2020-06-29 19:52:30

[No response]	Option C	This option provides a variety of combination of standards a school can offer to suit the needs to the students. It provides a pathway and the opportunities that will enable the students to specialise in various science options at L2 and L3.	Negatives: Does not supports coherent and robust pathways into NCEA Level 2 and further study or training. It does not meet the seven criteria. It is too restrictive. I do not have any positives. The Ministry and SEG should just drop this option.	This option has some merits but not enough choices for schools to offer to their students. It does not meet the seven criteria.	This option is the one that meets the seven criteria the best. There are more choices to combine and if chosen well will provide the pathway to L2 for the students. The school has the obligation to provide a combination of standards that will ensure students needs are met.	2020-06-29 20:06:49	ANON-FDGN-6QK4-5	2020-06-29 18:14:22

[No response]	Option C	Good scientific thinking requires good knowledge of basic facts. Keeping the knowledge domain small allows learning the evidence-based critical thinking that that science relies on (using basic facts and argumentation). A broader knowledge domain would making teaching scientific method quite a lot more difficult.	(Might fail criteria 3) For those students moving into specialist Science subjects in Y12 (and beyond even to Uni), it is important to give them a taste of the specialist science. This option does not appear to clearly state what will be taught.	What does this achieve? It sits in neither camp. Why offer this at all? I can see the argument for A. I can see the argument for C. This looks like it has just been plunked in the middle for no reason other than "let's put something in the middle!" Just no.	Why do we teach science to students who will not follow scientific careers? My answer, is "so they can participate/understand discussions that democracy has about issues with some scientific footing." (eg Are we handling Corona-virus epidemic well? Are we handling this in an evidence-based manner?) This is, I guess the "Nature of Science" thing. But I don't see a way of teaching Nature of Science without specific reference to specialist domains. OK, in real life these domains have overlap, but that happens at a later stage in Science education. Start small. Specialist subjects allow you to start small. What can MoE and	2020-06-29 20:09:04	ANON-FDGN-6QKA-J	2020-06-29 20:09:04

[No response]	Option A	Nature of Science is the overarching strand of the curriculum and provides a basis for all the content from the other strands.	Positives: promotes scientific literacy, may be more accessible to a wider group of students Negatives: you may not have subject experts teaching NoS standards relevant to their subject area, or it may end up all the standards are NoS with an emphasis on that expert's area; teachers are at risk of losing their jobs More PD would be necessary for NoS	NoS is really important - they need to push it more. I think you need a combination of biology/chemistry in the matrix. It keeps more doors open for students down the track. You will run the risk of pigeoning students into specific strands too early. Selecting specialised subjects in Level 1 is too early. If they change their mind it is harder to back pedal and that could impact on their university entrance requirements.	Way too much for students to be doing. I agree that Planet Earth and Beyond is under represented but you will spread the content too thin with this option. Teachers will need to overhaul their schemes of work and scale back so support on what the expected AOs needs to be very specific.	2020-06-29 20:09:58	ANON-FDGN-6QK5-6	2020-06-29 20:09:58

[No response]	Option C	This process provides a greater coverage of the curriculum in areas that require greater depth of knowledge. Hopefully better preparation for level 2 NCEA other wise students will be ill prepared for level 2 and this will flow on to level 3 a d then to university. As an HOD of science and having taught the curriculum in my opion I would rather develop my own level one course that I feel would advantage the students I teach.	Positives is it teaches some of the curriculum in depth but not all. Students need deeper understanding of the physics and chemistry otherwise the jump to level 2 is too high.	There are foundational ideas that are nessary for level 2 subject areas These would be: Genetics Mamals as consumers/plants Acids and bases Selected reactions Mechanics Electricity and magnetism If these could be algamated and taught without loosing the Intergity of the standards then it could be good	Ensure that there is coverage of the standard and that each area is covered to enough depth to prepare for level 2	2020-06-29 20:31:37	ANON-FDGN-6QK1-2	2020-06-29 20:31:37
[No response]	Option C	It gives students exposure to a wide range of subjects at which they can then undertake in Year 12/13 and the future. It is more directed learning and meets the needs of the "normal" student. Students need direction, tests and clear, achievable goals especially in their first year of NCEA.				2020-06-29 20:37:07	ANON-FDGN-6QKC-M	2020-06-29 20:37:07

[No response]	Option C					2020-06-29 20:48:11	ANON-FDGN-6QKW-8	2020-06-29 20:48:11
[No response]	Option C	To best prepare students for specialist subjects at L2 I believe the students need to have the opportunity to study Bio, Chem and Physics units in L1. There is already a significant step up from L1 who have only studied general science. Those students who have taken the opportunity to study Additional Science courses (including Bio/Chem/Physics specific standards) have a better general understanding of the concepts.	Make sure the General science units include a range of concepts from across the sciences. For example, the units with Biology in should not be completely focused on Genetics.	Chemistry and Biology should be together and Physics with Earth and Space Science. This would enable aspects e.g. Biochemistry and cross-curricular links e.g. rates of reaction in the chemistry context and in the biological context (e.g. enzymes, mammals and digestion).	Provide a range of standards that include practical skills.	2020-06-29 21:00:13	ANON-FDGN-6QKM-X	2020-06-29 21:00:13
[No response]	Option C	More options for students and schools to design relevant courses.	Limited.			2020-06-29 21:08:57	ANON-FDGN-6QKR-3	2020-06-29 21:08:57

[No response]	Option C	Students should be able to start specializing and/or taking multiple science courses at level 1. Students at Avondale College currently benefit from doing both science and human biology at level one. Option C would keep the door open for science enrichment for students who already plan to take multiple sciences in level 2 and level 3.	I am fearful that this limited Science curriculum will not best prepare our future scientists for further study. I'm also anxious that the modes of assessment will lead to even more limited development of broad science understanding.	If this structure is chosen schools must have the option to align gettin the 4 strands in a way that worked best for their community. This is preferable to Option A.	Yes Yes Yes!	2020-06-29 21:11:44	ANON-FDGN-6QK8-9	2020-06-29 21:11:44
[No response]	Option A	Students don't need to specialise till higher levels giving them a broader base is better and allows them to have a wider range of options in Year 11 rather than starting to specialise into Science	It definitely meets the terms of a broader foundational subject	I believe that this is not broad as it is directing students to specialise early	This is similar to the current situation and we have too many students studying specialist science in our school at year 11 already when they need to have a broader range of subjects to keep their options open	2020-06-29 21:18:53	ANON-FDGN-6QHP-X	2020-06-29 21:18:53

[No response]	Option B	Balance between providing students who are going on to study the specialists sciences at Year 12 without specialising too early. Even at Year 11 our students still need an exposure to a wider range of subjects as many still are not sure what direction they wish to proceed in for future education/careers.				2020-06-29 21:19:42	ANON-FDGN-6QHN-V	2020-06-29 21:19:42
[No response]	Option C	Each school has a choice of what would work well for their students.	Too restricted, and is not giving a good path for future studies at L2 and LS in the separate Science subjects.	A better option than A but only works if the students know which path works for them. Does not allow flexibility which is a huge benefit of the matrix used at present.	The positive is flexibility of courses, especially the different ability of the students studying Science. Allow choice from the schools Gives a better pathway to Science studies at L@ and 3 and tertiary.	2020-06-29 21:20:21	ANON-FDGN-6QHS-1	2020-06-29 21:20:21
[No response]	Option C	Allows for more optiobs				2020-06-29 21:48:11	ANON-FDGN-6QHY-7	2020-06-29 21:48:11

[No response]	Option C	The NCEA system was introduced partly to provide choice and flexibility. This is the only option that gives schools the ability to choose courses that suit their learners and keep them interested. In my school we currently offer mainstream ncea level 1 but we are able to offer biochem and physchem subjects. These are popular options as since students don't like 'general' science courses and want to specialise.			I only see positives for option c as it's a much less drastic move for NCEA compared to the first option a, which I really do not like at all. Teachers and students will still have some flexibility to choose standards that will interest their students. Please please make standards clear and transparent stop the waffle we have to decipher currently, and then teachers and students will know what they need to achieve the standard. It would be amazing if we could get a secure online system (not open like tki) where we can access lots of different assessments and teaching materials/learning resources for the	2020-06-29 21:58:15	ANON-FDGN-6QHU-3	2020-06-29 21:58:15

[No response]	Option B	I think that option B provides a balance in the tensions between specialist knowledge and general knowledge. I'm excited to see NoS have a more prominent place in the standards and see this as essential for community-based projects and for connecting with matauranga Māori.				2020-06-29 21:59:24	ANON-FDGN-6QH2-Z	2020-06-29 21:59:24
[No response]	Option C	This allows for specialism at an early age for those who want/need it, whilst also giving schools the option to create great courses from all 4 areas of the science curriculum	I believe this is too condensed to expect students to be able to specialise at L2 and L3	Whilst this is better than option A I believe it is still to condensed and specialised. I would however agree that combining chemistry and physics would be the best combination.	I think this is the best option. "science" is too broad to condense down into 1 subject at L1 and expect students to be able to specialise later in their schooling. To ensure all schools are able to teach this effectively, allowing courses to be created from all 4 areas would be an ideal.	2020-06-29 22:23:14	ANON-FDGN-6QH3-1	2020-06-29 22:23:14
[No response]	Option B	It allows some specialisation but not too much	It would not be enough for bright students	You would be missing environmental science	That’s too much for a broad course	2020-06-29 22:35:38	ANON-FDGN-6QHT-2	2020-06-29 22:35:38

[No response]	Option C	In order for students to be successful at level 2 science subjects they need a solid detailed content at level 1.	No	The subjects are and have been separated for good reasons. At level 2 and 3 the students need a foundation of content acquired at level 1	Meets the criteria and only option if we are to achieve scientific literate students and citizens	2020-06-29 23:00:11	ANON-FDGN-6QHJ-R	2020-06-29 23:00:11
[No response]	Option A	A number of other subjects have to keep it general. Giving science the chance to have these individual Subjects is not comparable with what you have done to subjects like commerce Most students do well with general Science in Yr 11 and then specialist science in yr 12 and 13	A number of other subjects have to keep it general. Giving science the chance to have these individual Subjects is not comparable with what you have done to subjects like commerce Most students do well with general Science in Yr 11 and then specialist science in yr 12 and 13	I don't think this is necessary you don't need to specialize	Not needed if and provides too many sci options based on the other options for students to choose from	2020-06-30 05:31:20	ANON-FDGN-6QHQ-Y	2020-06-30 05:31:20

[No response]	Option C	It offers a wide variety of choices.	Great in theory but a shocker to deliver in practice! The scope of the external is unlimited and that puts students at a major disadvantage in my opinion. The background knowledge and connectedness of all Science disciplines is not considered in the junior school (in my experience) and there are distinct topics taught (Acids & Bases for example) which are very rarely put into context. Support from the Ministry and subject expert groups at the school where I work is meagre, to put it politely, so this option will put a huge amount of strain on the Science teachers we currently have to develop new resources that are fit for purpose. Teachers are very wary of the promises about exemplars etc as these are very seldom fit for purpose. Level 1 is largely irrelevant anyway as credits at higher levels count back	Level 1 is largely irrelevant. Support of Ministry and Subject expert groups at the school where I work is meagre, to put it politely. Existing resources can be used with minimal modification which will put less strain on existing teachers. Lead in from junior school would also need to be adjusted and this creates extra work for those teaching in these areas.	Level 1 is largely irrelevant. Support of Ministry and Subject expert groups at the school where I work is meagre, to put it politely. Existing resources can be allocated to specific areas with minimal adjustment and this will alleviate workload. This approach would also fit better with junior programmes where specific topics are taught within the 4 strands of the curriculum.	2020-06-30 06:00:32	ANON-FDGN-6QH6-4	2020-06-30 06:00:32
[No response]	Option C	Subject discipline boundaries are respected.				2020-06-30 06:37:41	ANON-FDGN-6QH7-5	2020-06-30 06:37:41
[No response]	Option C	Greater flexibility	Far too narrow	Still too to narrow	Perfect lots of flexibility	2020-06-30 07:03:48	ANON-FDGN-6QHG-N	2020-06-30 07:03:48

[No response]	Option C	Allows students to explore and engage in science through the streams and contexts that interest them rather than being forced into a narrow box. We want to grow interest and engagement in Science, not turn kids away from it because of a lack of flexibility.	Option A doesnt give the guidance and choice that students need to engage. Contexts will depend entirely on the school and the teacher in front of them. I've already heard one teacher say that they'd teach the entire L1 year through physics context only - how is this fair to students who enjoy and thrive on chem or bio?	Biology and Chemistry would be more of a natural fit together as a subject matrix. This option is better than A as it ensures students are getting a range of options that isnt teacher-specific.	This option give the most flexibility and range of topics to increase student engagement. By giving a range of contexts and ways of teaching/learning/achieving the standards students are more likely to be passionate about what they are studying and this would make an organized, invested teacher more effective at teaching.	2020-06-30 07:04:30	ANON-FDGN-6QHV-4	2020-06-30 07:04:30
[No response]	Option C	Allows schools to tailor courses to their students needs and abilities.	It's too broad. The leap to Level 2 is already large. This would make it that much further and potentially put more students off studying sciences at senior level which I think is contradictory to the needs to NZ	This narrows the pathway. Students would either be studying a Biological pathway or Physical pathway. This is contradictory to the stated aims of having a broad course.	You could have a compulsory component that covers all strands and then allow schools to choose the extra parts.	2020-06-30 07:43:00	ANON-FDGN-6QH9-7	2020-06-30 07:43:00

[No response]	Option C	It gives more flexibility in being able to build a course to suit the students. In most schools science at Y11 is compulsory. Being able to have a course for those not interested in science and a course for those intending to become scientists is much easier if we can tailor the courses to suit. We are also able to offer specialist courses to the gifted and talented.	I think this would mean many schools would drop science at Y11. This would put NZ on a back foot. We'd end up with a nation of people who didn't do Science at school and start believing all the misinformation that the american's believe. It has too narrow a focus, with no flexibility	This is better than option A, but it still doesn't give the flexibility that option C gives. Those low ability students who don't like science need optons	See above	2020-06-30 07:43:05	ANON-FDGN-6QHH-P	2020-06-30 07:43:05

[No response]	Option A	Strips away archaic silo-ing of subjects which is an industrial construct. Focused on the place of science in the world and allows rich cross-curricular work that helps student understand there is no such thing as humanities, sciences, maths - they are all connected and are about curiosity and innovation. Links much better with big pictures thinking around issues like climate change, poverty etc.	Positives listed above. Negatives are that teachers whose identity and self-esteem is bound up in subject knowledge will find this threatening and will struggle to make the shift. Therefore, significant resourcing (much like the TKI tasks early on in NCEA) and clear exemplification will be needed so that teachers gain confidence and can later be moved to developing their own task/programmes. Professional development to shift thinking is also key.	To me this is no different than status quo. Still separating learning into subjects which is not future focused and forward thinking. Parents and communities who do not understand the need for change will then prioritise the Chem/Physics over the Earth/Bio. Maybe force a change in their thinking by combining Physics/Earth and Chem/Bio?	Don't see this in the spirit of moving NCEA to a future focused and forward thinking qualification that understands the huge shift in education that is occurring.	2020-06-30 07:56:36	ANON-FDGN-6QHX-6	2020-06-30 07:56:36

[No response]	Option C	It is important to continue offering the single-science strand in Level 1. This will give us more flexibility with our programmes and allow us to cater to our more able students. We will also be able to develop programmes for groups of students that are geared to their interests rather than a one-size-fits-all approach. More specific standards and tasks will also take some make administration and moderation easier with less 'grey-area'.	Positives - More defined relationship with te ao Maori; Based on 'Big Ideas'; Will tie in nicely to our junior curriculum programme – e.g. NOS assessments; Assess externals when ready and not at the end of the year?; 50/50 credit split Negatives - Some of the possible activities seem too general and too simplistic – especially for more able students; Increase in teacher workload; Decrease in authenticity for all of these standards will be an issue - assessment unfit for purpose; How will these assessment modes flow into Level 2 and 3 specialised subjects?; May discourage people from entering and encourage people to leave the teaching profession; Will more schools opt not to offer Level 1 Science?; Decreased focus on a set of consistent Knowledge	Positives - More standards offered - more choice developing programmes; Merging subjects together can allow us to create links between them easier Negatives - What will the standards look like?; Increase in teacher workload; Decrease in authenticity for all of these standards will be an issue; How will these assessment modes flow into Level 2 and 3 specialised subjects?; May discourage people from entering and encourage people to leave the teaching profession; Will more schools opt not to offer Level 1 Science?; Decreased focus on a set of consistent Knowledge	Positives - More standards offered - more choice developing programmes; Fits with the model of 50/50 internal/external nicely; Keeps the single strand focus for schools who wish to maintain this; Allow us to cater to more able students; Offers flexibility in programmes we can offer across the cohort; Can be more inclusive for reasons stated above; Takes the grey-area out of teaching certain standards that are too broad and general; Depending on how the tasks are structured, this may not increase teacher workload; Will not affect authenticity of the tasks; Will enable us to cover of depth and breadth in Level 1	2020-06-30 08:09:08	ANON-FDGN-6QHB-G	2020-06-30 08:09:08

[No response]	Option C	At Dilworth, we believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually arranged around mathematics, physics, chemistry, biology and	Negatives We do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA ie How the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification. The change to both external standards to be a common assessment activity based on unfamiliar contexts and marked by NZQA, sounds good but there is a wealth of science educational research devoted to the fair assessment of NOS, with an acknowledgement that summative assessment of NOS is very difficult (Aydın et al., 2013, Allchin, 2011). The challenges required to provide fair, valid assessments that actually reflect NOS values should not be underestimated. The	negatives a bland middle ground that achieves nothing	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount	2020-06-30 08:29:23	ANON-FDGN-6QHK-S	2020-06-30 08:29:23

[No response]	Option B	These are the current options provided at my current school and other local schools. This variety of options provides a range of opportunities for students working at a variety of levels.	Limiting in providing Science aimed at students working at different levels and does not provide an option for an additional science at Y11.	Awesome, this is the way science currently works at many high schools across NZ... A fantastic compromise in meeting the diverse needs of Y11 students...		2020-06-30 08:29:50	ANON-FDGN-6QHF-M	2020-06-30 08:29:50
[No response]	Option C					2020-06-30 08:32:41	ANON-FDGN-6QHA-F	2020-06-30 08:32:41
[No response]	Option C	To allow choice so that relevant courses can be developed for different learners				2020-06-30 08:33:44	ANON-FDGN-6QH5-3	2020-06-30 08:33:44
[No response]	Option C	This option allows schools greater flexibility to serve the needs of their community.	I fail to see any positives here, it is by far too restrictive and limiting. It does not meet with the criteria numbered 2, 3, 4, 5 and 7.	This option more closely meets the 7 criteria. But there are still limits with how well it serve criteria 2,3,5,7.	This option more closely fits the 7 criteria. It is important to maintain NCEA credibility in the wider community. It has taken years for it to become an accepted method of student assessment and confidence in it would be impacted significantly if the changes are perceived as a veering away.	2020-06-30 09:35:36	ANON-FDGN-6QHC-H	2020-06-30 09:35:36

[No response]	Option C	Allows for more depth into each of the scientific disciplines and will better prepare students for higher-level science study			Flexibility for schools to offer standards that are suitable and relevant to the students in front of them.	2020-06-30 09:37:19	ANON-FDGN-6QHW-5	2020-06-30 09:37:19
[No response]	Option C	more coverage of the curriculum				2020-06-30 09:39:02	ANON-FDGN-6QHM-U	2020-06-30 09:39:02
[No response]	Option C	It gives us more options to be able to make up a number of science courses that best suit out students. At the moment we have four different Yr 11 Science courses that are suited to the different levels and interests of the students that are in the courses	Negatives : Option A is a terrible course option. Having all the assessment tasks as report writing is a bad move and disadvantages students who find report writing hard. I have noticed that that boys find report writing hard and under-achieve compared to girls. No flexibility to adapt Science courses to our students with such a limited number of standards avaliable. Postives: I don't see any positives for students at all	Negatives: it is a mish -mash of options Positives: None really	Positives: More scope for schools to adapt courses to suit their students better. Better preparation for Level 2 Science courses. Negatives: None that I can see	2020-06-30 09:46:46	ANON-FDGN-6QHR-Z	2020-06-30 09:46:46

[No response]	Option C	It offers a range of the different science strands which students should be exposed to and offers schools choice in which contexts they can teach. It is also similiar to the way students are currently tested.	Science shouldn't just be based on the NOS strands it needs some context for beyond level 1 science subjects.	Requires all schools to have well qualified and highly component teachers. Smaller schools will need access to good remote teaching resources in order to offer all specialist science courses. However, there is still the option of offering only the NOS standards.	Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. Give schools different options at y11 for different courses that can be created for akonga We need sufficient PD time and exemplars of relevant resources.	2020-06-30 09:47:28	ANON-FDGN-6QH8-6	2020-06-30 09:47:28
[No response]	Option C					2020-06-30 09:56:00	ANON-FDGN-6QCP-S	2020-06-30 09:56:00

[No response]	Option A	Level playing field. Focus on science for all, from which specialisms develop in year 12 and beyond	Main negative is that subject associations prefer a specialist model for the curriculum and appeasement may be difficult. It better meets the criteria for level 1 and allows for a greater range of local curriculum content. Having a range of pre-approved, ready to use internal assessments will make it easier to achieve a uniform standard in the initial phase and local assessments could be developed as required later. A resource bank of NOS activities would be useful.	The broad balance nature of the curriculum is lost.	The broad balance nature of the curriculum is lost.	2020-06-30 10:07:15	ANON-FDGN-6QCS-V	2020-06-30 10:07:15

[No response]	Option C	Offers a greater range of subjects. caters for students of all ability Gives a far better background for students who want to pursue Level 2 and 3 Science subjects particularly those going onto tertiary education	Positives- could link in with what we cover at a junior level particularly nature of science assessments Negatives - many of them 1) Not enough academic science - particularly for able students, will students have enough background knowledge to cope with Level 2 etc 2) Too general, what is meant to be taught 3) Increased work load - far too much marking, will be an incentive for me to leave teaching (as an older teacher) 4) academically challenged students need direction, this is too 'wishy washy'. I certainly refute the idea that this meets the vision of NCEA Level 1 being a suitable model for Science,particualrly criteria 3,4 and 6. I am sure that this approach would be detrimental to our	Positive Obviously more standards offered. I would need to know what would be the actual content taught Negatives too many internal assessments, work load issue students particularly boys do not like the internal assessments where there is a lot of writing. it is bad enough with the genetics topic AS 90948 where our male students perform poorly compared with Chem and physics AS 90944 and AS 90940	Positives More standards on offer greater flexibility allows a programme to cater for students of all capabilities better depth of knowledge can be taught negatives none, this is the way to go One aspect of Science I would like to reintroduced that used to be in the very old prescription at Level 1 is Microorganisms, Teaching viruses and bacteria is very relevant particularly with the way of the world at the moment	2020-06-30 10:10:07	ANON-FDGN-6QCN-Q	2020-06-30 10:05:53

[No response]	Option C	Giving students MORE choice of standards to study is so important . This is restricted in the other two options .	This looks as if it is going to be a very prescribed course . This is not ideal . It is nice to give students a choice of standards to study which is an effective way of engaging students from the start.	This would work , 12 options are better than 4 . The vast majority of science teachers in NZ do a range of standards across the current matrix. Combining areas like Chemistry and Biology is not needed as many of the current standards combines different sciences where you will cover aspects of several areas of science in that unit that is appropriate to the topic being taught .	Best option by a mile. Students chose the areas they want to study with help from their teachers . Again the vast majority of NZ Science teachers give a wide variety of topics covering all the areas of Science at Year 11. This is to give our students ideas on what Science areas they would like to study further at level 2, 3 and beyond . You will have a better chance of covering all 7 criteria. To monitor if this is being done in schools, surely this is the role of the District Science advisors ???	2020-06-30 10:15:06	ANON-FDGN-6QCD-D	2020-06-30 10:15:06

[No response]	Option C	The Science curriculum emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. It is important for schools to have choice - for example, whether they offer the broad Nature of Science standards being proposed, or choose to offer the more specialized Physics, Chemistry, Biology or Earth & Science standards, or to choose whether they offer a blend of these standards, to best suit their ākonga. It is also important to give students at Level 1 the experience of taking genuine externally assessed examinations, i.e., in the same style as the current Level 1, 2 and 3 externals	Strong emphasis on NOS and relevance of science to the ākonga Strong emphasis on mātauranga Māori I do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA The internal standards currently require non-traditional forms of assessment eg report writing and videos, which are time-intensive for teachers and students, and require a high level of literacy from students. I do not think that only NOS focussed standards will adequately prepare students for the Level 2 and 3 sciences. With the assessment totally focussed on NOS the incentives to thoroughly learn the basics of the separate sciences, and the skills needed to do this, will be lost.	Positives A compromise between Options A and C Negatives It will probably satisfy neither set of goals	Allows schools to offer several science options at Year 11. Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. Requires all schools to have well qualified and highly component teachers. Smaller schools will need access to good remote teaching resources in order to offer all specialist science courses. However, there is still the option of offering only the NOS	2020-06-30 10:42:21	ANON-FDGN-6QCU-X	2020-06-30 10:42:21

[No response]	Option C	Because it preserves the maximum flexibility of standards across subjects. Quite frankly, I don't trust NZQA's ability to select appropriate topics for the standards in Option B. For physics, for example, which topics would you choose? Mechanics AND Electricity and Magnetism are both vital topics and they tend to be externally assessed. And what about waves and heat? You could combine them into one paper, but that still makes 3 assessments total on physics. How would you choose between them? Option A is terrrible, as I believe a lot of other teachers have told you.	I gave feedback on this option in a previous survey. It was not positive.	Tell me what the content of the proposed standards would be and then I will be able to comment on this option properly. Without more information I cannot tell you if I believe it to be a valid or valuable option. Certainly it does generalise the Level 1 qualification but how can I be sure the standards offered would be appropriate? It may be that they are still too general to provide schools with the options necessary to create robust and coherent pathways for students, and to provide students with the foundational knowledge necessary to succeed at Level 2. The step up between Level 1	Positives: - Preserves flexibility - Allows schools to tailor approaches and standards to the needs of their students - Offers the most robust and comprehensive selection of standards for each specialisation. Option C offers allows schools to design their courses carefully and with their particular students in mind. It offers opportunity for students to follow their passions and find pathways that lead them to Level 2 and beyond in a well prepared, robust, and coherent manner. It also preserves what little international credibility I believe NCEA has. I	2020-06-30 10:44:53	ANON-FDGN-6QC2-U	2020-06-30 10:44:53

[No response]	Option A	This is the preferred option to allow teaching and learning to focus on skills and competencies that will ensure students are able to adapt to many other experiences outside of the science domain. The current focus on content over skills creates too much of a focus on Science as a collection of knowledge rather than a tool that all people use every day. With a focus on the NOS we are able to ensure students continuing with science have skills and strong broad bases in understanding to enable them to move into the senior science where they can engage with specific content as they select subjects they have interest in at level 2. This option also allow all students to gain useful skills and possibly a passion for science as this gives all akonga great ability to	Option A allows flexibility and allows each group of learners and teacher to co construct the learning in a way that all learners can feel excited about. Without limitations on the content required we as educators can explore new science and dig into exciting ideas to support the emerging capacity of our students. Currently in our school our junior science program is focused on the NOS with some content included. As students move into level 1 science this is entirely disrupted and many students are turned off by the tight requirements of standards and many teachers struggle to work within narrow bands of content when students interests extend beyond the requirements.	This half measure option would likely not help student engagement and would result in many students and whanau feeling unsure and confused when given options. Will selecting a certain subject cut them off from future options in level 2 or 3? Will selecting Physical science be easier or harder? Will different options result in students getting certain teachers? With a half measure system we find ourselves unable to move effectively in any direction.	This approach continues down the same direction we are heading. Prioritising content over capabilities and skills. This focuses on traditional teaching and learning techniques which historically disadvantage our Maori and Pacifica akonga. This option limits our abilities as professionals to explore with our students and instead focuses us again on simply "ticking boxes" of known data points and assembling them in a certain way. The higher order skills of making a strong argument from data / evidence is the only useful outcome for any student taking a course like this who does not go	2020-06-30 10:54:45	ANON-FDGN-6QC3-V	2020-06-30 10:54:45
[No response]	Option C	Easier to make a course for a diverse group of students. Others are all too narrow	Too restrictive. Dumbing down of subject.	Earth Science is stand alone	Great	2020-06-30 10:56:11	ANON-FDGN-6QCT-W	2020-06-30 10:56:11

[No response]	Option C	Option C is the best choice because it includes the necessary single subject breadth but also encompasses both options A and B to give the greatest overall range and flexibly. This option has been insightfully created to allow for the much-needed science subject options, thus has the best balance for enabling courses to be designed with broad foundational content that would be able to meet the widest range of student learning pathways.	'Sciences' are a domain rather than a single subject. Sciences offered in schools includes the 4 subjects (Chemistry, Physics, Biology, and Earth Science) characterised as the Material, Physical, and Living worlds, and Planet earth. The Nature of science, while representing worthy attributes that contribute towards scientific learning, do not represent a discrete subject. Generally, when a course of 'Science' is studied it is made up from the 4 science subjects and recognises the different learning attributes for each subject. The main role of the Nature of Science is to be in support for the foundational learning of the unique concepts and content of these 4 science subjects. As such the 'Nature of Science' does not contain any specific subject matter, and is thus not able to independently fulfil the purpose of providing a	Whilst this is a significant improvement on Option A, there seems little point in pursuing this option when Option C exists, because this represents a less flexible version of Option C. It provides for some ability to design appropriate courses for students needs, but not the same range as in option C. The ability of choose from a range of standards on the matrix means that those who preferred this option would be equally satisfied with option C because it would enable this option as well. In terms of the suggested combinations of the subjects the ability to build a course from across	This is the best option due to its wide-ranging ability to enable flexible learning pathways and cover all of the science subjects. The ability to select from up to four standards from each of the science subjects allows the design of broad based courses that meet the foundational content needs for progression in any particular schools uniquely designed level 2 and 3 specialist courses. The separation into science subjects helps to avoid contextual overlap occurring within a course and ensures the important concepts for each of the science subjects is able to be directly included in student learning. This framework is better suited to	2020-06-30 11:08:05	ANON-FDGN-6QH4-2	2020-06-29 22:50:51

[No response]	Option C	I don’t see why all three options have to have 50% internal. It is becoming obvious that the students achievement are on the decline and NZQA is trying to maintain the reputation of “world class” education by lowering the standards. Being a marker for level 1 science, getting 8-9 out of 24 for achieved is a joke. I wouldn’t imagine any other OECD countries would accept a 33% grade for a pass. Stop lowering the standards!				2020-06-30 11:28:18	ANON-FDGN-6QCQ-T	2020-06-30 11:28:18

[No response]	Option C	Option C is the best choice because it includes the necessary single subject breadth but also encompasses both options A and B to give the greatest overall range and flexibly. This option has been insightfully created to allow for the much-needed science subject options, thus has the best balance for enabling courses to be designed with broad foundational content that would be able to meet the widest range of student learning pathways.	'Sciences' are a domain rather than a single subject. Sciences offered in schools includes the 4 subjects (Chemistry, Physics, Biology, and Earth Science) characterised as the Material, Physical, and Living worlds, and Planet earth. The Nature of science, while representing worthy attributes that contribute towards scientific learning, do not represent a discrete subject. Generally, when a course of 'Science' is studied it is made up from the 4 science subjects and recognises the different learning attributes for each subject. The main role of the Nature of Science is to be in support for the foundational learning of the unique concepts and content of these 4 science subjects. As such the 'Nature of Science' does not contain any specific subject matter, and is thus not able to independently fulfil the purpose of providing a	Whilst this is a significant improvement on Option A, there seems little point in pursuing this option when Option C exists, because this represents a less flexible version of Option C. It provides for some ability to design appropriate courses for students needs, but not the same range as in option C. The ability of choose from a range of standards on the matrix means that those who preferred this option would be equally satisfied with option C because it would enable this option as well. In terms of the suggested combinations of the subjects the ability to build a course from across	This is the best option due to its wide-ranging ability to enable flexible learning pathways and cover all of the science subjects. The ability to select from up to four standards from each of the science subjects allows the design of broad based courses that meet the foundational content needs for progression in any particular schools uniquely designed level 2 and 3 specialist courses. The separation into science subjects helps to avoid contextual overlap occurring within a course and ensures the important concepts for each of the science subjects is able to be directly included in student learning. This framework is better suited to	2020-06-30 11:41:04	ANON-FDGN-6QC6-Y	2020-06-30 11:41:04

[No response]	Option C	It offers diversified learning opportunities and acknowledges that students have strengths in different areas. Better supports pathways into Level 2 and into trades.	Many students struggle to learn the complex language that is contained in the biological Sciences but excel at Physics and vice versa. There are no positives. It doesn't help students into Level 2. It doesn't help good Scientific citizenship.	Still no.	Gives pathways to level 2. Supports Scientific enquiry. Allows learners to excel in their field of choice. Doesn't compare learners to the same degree that option A does.	2020-06-30 11:47:16	ANON-FDGN-6QC7-Z	2020-06-30 11:47:16

[No response]	Option C	Prefer Option C At Tauraroa Area School we believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually	Positives: ● Strong emphasis on NOS and relevance of science to the ākonga ● Strong emphasis on mātauranga Māori Negatives: ● We do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA ie How the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification. The change to both external standards to be a common assessment activity based on unfamiliar contexts and marked by NZQA, sounds good but there is a wealth of science educational research devoted to the fair assessment of NOS, with an acknowledgement that summative assessment of NOS is very difficult (Aydın et al., 2013	Positives ● A compromise between Options A and C Negatives ● As with many compromises it will probably satisfy neither set of goals 3 Feedback on Option C (five subjects) Please consider: What are the positives and negatives of this option? Do you believe it meets the seven criteria, particularly the vision of NCEA Level 1 as a broader, foundational qualification? If this approach is finalised, what could the Ministry and Subject Expert Groups do to ensure all schools are able to teach Science effectively? Positives ● Allows schools to use the great	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount	2020-06-30 11:51:59	ANON-FDGN-6QCG-G	2020-06-30 11:51:59

[No response]	Option C	Science is a diverse subject - we cannot have just 4 standards. Our students should be exposed to all the strands. Please do not limit us	NO. You are limiting the teachers and student choices	NO You are limiting the teacher and student choices.	Positives - it gives us choice - broad balance choice for the students. Yes, it meets the 7 criteria Point 3 - How will you ensure that the 4 current standards are taught effectively in all the schools? I think that the same principals will be valid here. Trust the teachers, moderate and give us PD	2020-06-30 11:58:10	ANON-FDGN-6QCV-Y	2020-06-30 11:58:10
[No response]	Option C	Best basis for future study. Best basis to understand the world around us, how it affects us and how we affect it. More international model, our students are competing globally	negative not at all suitable. does not prepare students for a global economy. Broad but absolutely no depth or basis	negative not at all suitable. does not prepare students for a global economy. Broad but absolutely no depth or basis	Godd best of all options	2020-06-30 12:06:20	ANON-FDGN-6QC9-2	2020-06-30 12:06:20

[No response]	Option C	This gives more options for the students to specialise in different areas. It also allows to maintain a high level understanding of the content in science for those who wish to continue to study science at a higher level. It also is allows for the Nature of Science to be integrated with the 4 general science standards with the more specialised topics.	It is very limited in choice and seems to have diluted the content of the level one science topics. I can't see how all areas of science can effectively be taught and covered within only these 4 standards. The positives are there is an emphasis on applying science knowledge and integrating the science content rather than compartmentalising. However as said before a lot of content will get lost with this making it harder for those students who wish to continue with science at level 2.	There is more choice but still quite limiting combining the 2 specialist subjects over 4 standards.	This seems to be the best comprise. There is choice available for students to specialise in the areas they are interested in and still having the opportunity to integrate the NoS standards and apply their understanding.	2020-06-30 12:07:22	ANON-FDGN-6QCH-H	2020-06-30 12:07:22

[No response]	Option C	To prepare students for senior study in all of the Sciences, they need to get a good grounding at level 1. Only option C will give this opportunity.	Positive - It is a dumbed down version and most students will pass Negative - it will do nothing to prep students for senior sciences. It will prevent students from experiencing in depth science ideas. Some will not be exposed to all of the possible science topics.	+ It would be more foundational - It would probably not prepare students for senior science subjects. You would be limiting students to 2 sciences. Combo of Physics/Chem and Bio/EOS is probably best	+ Serious science students who wish to move to Uni will be able to have a good foundation before L2. It gives more flexibility for different groups of students - More assessment	2020-06-30 12:11:20	ANON-FDGN-6QCX-1	2020-06-30 12:11:20
[No response]	Option C	Because at this age children should be learning about the different types of Science and not finding themselves disadvantaged because they didn't complete the correct topics in L1.	This is just making the qualification even easier, it is already not even close to the rigor of most other countries.	This requires the children or the teachers to make a decision about subjects that may then disadvantage them at a later date.	All the sciences need to be included at L1 but they need to still be rigorous courses not just a vague overview.	2020-06-30 12:21:33	ANON-FDGN-6QCB-B	2020-06-30 12:21:33
[No response]	Option C	It allows schools and students greater flexibility in what could be covered in a course.				2020-06-30 12:22:45	ANON-FDGN-6QCZ-3	2020-06-30 12:22:45

[No response]	Option C	Content acquirement is of high import in high school science as most primary curriculums do not include science as a topic. Without a focus on content as an assessment criterion, students will remember the required content knowledge better. As well, it will prepare them if they wish to pursue a degree in science as those courses also have assessments that are content driven.	PROS: Nature of Science is extremely useful to develop critical thinking skills. CONS: NOS can be extremely abstract and students will struggle to link content learned with the thought processes involved unless excess time is dedicated by the teacher to forge these links. Summary: Too much focus on skills and thought processes will develop a better fluid intellect (logical problem-solving). However, not enough development of content knowledge will find students struggling to develop crystallised intelligence (working memory).	Very odd mixture of subjects. Biology linked with Earth and Space Science Chemistry linked with Physics. Should be much better with: Physics linked with Earth and Space Science Biology linked with Chemistry	Best flexibility, will allow schools to pick and choose content-driven topics and nature of science-driven topics throughout the year as topical.	2020-06-30 12:26:50	ANON-FDGN-6QCE-E	2020-06-30 12:19:42

[No response]	Option C	This is the best option due to its wide-ranging ability to enable flexible learning pathways and cover all of the science subjects. The ability to select from up to four standards from each of the science subjects allows the design of broad based courses that meet the foundational content needs for progression in any particular schools uniquely designed level 2 and 3 specialist courses. The separation into science subjects helps to avoid contextual overlap occurring within a course and ensures the important concepts for each of the science subjects is able to be directly included in student learning. This framework is better suited to support the Crowns obligations under Te Tiriti o Waitangi through providing a larger range of standards and	no	no	This is the best option due to its wide-ranging ability to enable flexible learning pathways and cover all of the science subjects. The ability to select from up to four standards from each of the science subjects allows the design of broad based courses that meet the foundational content needs for progression in any particular schools uniquely designed level 2 and 3 specialist courses. The separation into science subjects helps to avoid contextual overlap occurring within a course and ensures the important concepts for each of the science subjects is able to be directly included in student learning.	2020-06-30 12:29:54	ANON-FDGN-6QCK-M	2020-06-30 12:29:54
[No response]	Option C					2020-06-30 12:32:29	ANON-FDGN-6QCF-F	2020-06-30 12:32:29

[No response]	Option C	Science needs to be content based especially if students are hoping to succeed in L2 and L3 subject specific courses, eg L2 and L3 chemsitry with a potential route into third level. As it is too mnay students are struggling with the more rigorous and content specfic knowledge needed at L2 and L3, nevermind university. We need to stop dumbing everything down.	This option is another option that dumbs everything down, a race to the bottom and the lowest common demoninator. As it is we are struggling to retain students in senior courses, with a significant number who do enter, eg L2 not having the requisite background knowledge to succeed properly at L2. Level 1 maybe a foundation qualification, but like all foundations it needs to be strong eough to support further more specialist learning, and not too broad.	This seems like a fudge / compromise. which instead of meeting the best requirements from both option a and c falls in between.	There are no real negatives. Although the nature of science is important it is more important for the sake of science education that students are sufficiently prepared with the foundation knowledge in subject specific areas. This is not the case now where many feeder level 1 courses are spread to thin and students struggle in L2 subjects due to lack of adequate background foundation knowledge.	2020-06-30 12:42:47	ANON-FDGN-6QC5-X	2020-06-30 12:42:47

[No response]	Option B	this allows some flexibility in delivery and also scope to swap or change subjects related to the class and how they engage with NCEA. The options stay small but allow some specialisation. I dispute the need for 50% external assessment at this stage as not all learners are as good at exams and not all exams are written in a way that makes NOS easy to interpret. It stops the specialisation at year 11 but allows some flexibility are the main gains.	everyone would be on exactly the same footing in terms of knowledge entering level 2 however it is the devil of the detail (still not obvious to those of us not running the trials) how the standards are going to run in small departments or those with just one specialist. A package of resources that we can pick up and run with would be very helpful and the ability to add extra or local contexts if available. It could be seen as very limiting as we currently have quite a number of standards that we can match to learners. It will have to specify very carefully what you should and should not cover to remain a robust qualification.	Positive is that there is more choice. The flexibility is available and may take some time to iron out all of the specifics. If Science is to be taught effectively it requires a subject specialist with the subject specific knowledge to ensure that this is effective. All science is not related to relevant everyday life well by non specialists. Science overlaps everywhere and earth science fits more naturally with physics or biology, physics and space have always been taught together. Chemistry overlaps both physics and biology in different places and I cannot see how you cannot make links between all the topics.	If this option is undertaken then you are choosing the status quo. It will allow some schools to specialise and others to narrow down what they do. If level one is to become a foundational qualification then we have to limit choice, which in turn limits creative teaching and engagement.	2020-06-30 12:48:20	ANON-FDGN-6QC1-T	2020-06-30 12:48:20

[No response]	Option C	This provides greater diversity of learning for students as it allows for some initial specialisation at level 1. It means that there is more opportunity for students to develop combinations of science learning that can feed into a variety of senior science courses that a school can operate.	No I do not think that it meets the seven criteria. I think that this will limit the variability of what can be learned in Science and will not allow for possible specialist areas to be taught at level 1.	Each of the branches of science is a subject in their own right and should have the potential to be examined as such.	This option allows greater flexibility and diversity of specialist science subjects at level 1.	2020-06-30 12:54:48	ANON-FDGN-6QCW-Z	2020-06-30 12:54:48
[No response]	Option C	Broad selection of standards to cater to students interests.	Positives - a broad programme Negatives - may lose interest of students who do not enhiy all areas of science, drop in student numbers who are not interested in all of the sciences in a general course, stops schools creating unique courses, such as marine biology.	Positives - more flexbility than A Negatives - still very limited.	Positives - Allows schools to create unique courses.	2020-06-30 12:55:49	ANON-FDGN-6QCM-P	2020-06-30 12:55:49
[No response]	Option C					2020-06-30 12:57:39	ANON-FDGN-6QC8-1	2020-06-30 12:57:39
[No response]	Option C		similar to what has already been said			2020-06-30 12:57:12	ANON-FDGN-6QCR-U	2020-06-30 12:57:12

[No response]	Option B	simple.but more choice of specialist subjects	too general			2020-06-30 13:06:31	ANON-FDGN-6QUP-B	2020-06-30 13:06:31
[No response]	Option C	Because there is too much material to cover in just lvl 2. You should offer 1 external and 1 internal for each of the specialist subjects. This limits the number of standards but allows for teaching of something from each subject.	Lots of scaffolding needs to be provided. At the moment there is nearly nothing to support your proposal.			2020-06-30 13:26:52	ANON-FDGN-6QUN-9	2020-06-30 13:26:52
[No response]	Option C					2020-06-30 13:30:14	ANON-FDGN-6QUS-E	2020-06-30 13:30:14

[No response]	Option C	More standards gives greater flexibility to cater for a wider range of learners. Also allows "double" Science courses. I don't believe that the current fours standrds provide enough scope to include sufficent 'hard science' to adequately prepare students for level 2 bio / chem / phys. Having more standards to chose from might enable us to include sufficent content from each leanring strand to actually prepare students for the level 2 standards.	The four standrs currently proposed are crap! They might cater for less able students, but they have more social studies in them than actual science. Someof the 7 objectives have been met, but with total disregard for a science course that actually prepares stduents for the sciences. I would abandon level 1 completely if these were the only standards I had to chose from. Also, good luck finding anyone to mark the "externals" I know several markers who have indicated they wouldn;t want to touch these standards.	This brings in some greater flexibility to have soem more specialised science standards with some actyual content that might prepare students for level 2. I would actually consider this option if I had any faith in the SEG preparing them, or the review process surrounding them. The feedback sought on the first four draft standards was ludicrous. What a joke! - questions on the accuracy of the title, but no oppertunity to give feedback on the standards as a whole, thier lack of content or the pedagogical views that were used to generate them. The first draft standards are complete garbage	Having 20 standards might require another SEG or SEGs to produce them. They might even be led by someone whose been a cassroom teacher this decade. Theres ultimately a better chance that at least some of the 20 standards will enable to teach some real science.	2020-06-30 13:39:33	ANON-FDGN-6QUD-Y	2020-06-30 13:39:33

[No response]	Option C	At St Margaret's College we believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually	Positives: ● Strong emphasis on NOS and relevance of science to the ākonga ● Strong emphasis on mātauranga Māori Negatives ● We do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA ie How the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification. T he change to both external standards to be a common assessment activity based on unfamiliar contexts and marked by NZQA, sounds good but there is a wealth of science educational research devoted to the fair assessment of NOS, with an acknowledgement that summative assessment of NOS is very difficult (Aydın et al., 2013, Allchin, 2011). The challenges required	Positives ● A compromise between Options A and C Negatives ● As with many compromises it will probably satisfy neither set of goals	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order	2020-06-30 13:40:41	ANON-FDGN-6QUY-M	2020-06-30 13:40:41

[No response]	Option C	It allows for specialist knowledge to be developed practiced and assessed so students going into Yr12 NCEA have the required prerequisite knowledge to excel.	Totally outrageous railroading of our subject content by presumably ideologically driven non science specialists.	NO	Much more balanced to allow the requisite specialisation required	2020-06-30 13:57:33	ANON-FDGN-6QUU-G	2020-06-30 13:57:33
[No response]	Option C	More options for a range of students				2020-06-30 14:05:01	ANON-FDGN-6QU2-D	2020-06-30 14:05:01
[No response]	Option B	Best aligns with senior curriculum. Adding more options makes staffing difficult, and increases time for teachers to design and implement a huge variety of standards.				2020-06-30 14:19:26	ANON-FDGN-6QU3-E	2020-06-30 14:19:26
[No response]	Option C	There needs to be greater diversity at level one.	This option for not allow science to be taught in a diverse way	If the 4 topics are split further then they can be better paired to create better courses	More on the ground support for teachers	2020-06-30 14:19:28	ANON-FDGN-6QUT-F	2020-06-30 14:19:28
[No response]	Option C					2020-06-30 14:22:41	ANON-FDGN-6QU4-F	2020-06-30 14:22:41

[No response]	Option C	If we are going to take the development of Science knowledge in Nz seriously, then the basics of the subjects need to be continually developed. We have the idea of a spiral curriculum where ideas are touched on a many levels and this needs to continue. If Option A was the option selected, then very little Science would be taught even though theoretically we should cover a very wide range of topics, teachers would still concentrate on what was in the assessment. Students would not be prepared for the individual sciences at Level 2 and 3.	If Option A was the option selected, then very little Science would be taught even though theoretically we should cover a very wide range of topics, teachers would still concentrate on what was in the assessment. Students would not be prepared for the individual sciences at Level 2 and 3. This option is aimed at those students who are not continuing with the Sciences and does not prepare the more able students for Level 2 and 3. these students also have poor literacy skills and the fact that all standards require written reports will disadvantage these students.	Better than A as it allows some better progression to Level 2 and 3 Sciences.	Would allow very good progression to Level 2 and 3. Courses could be created to cater for all levels of students.	2020-06-30 14:30:03	ANON-FDGN-6QUJ-5	2020-06-30 14:23:17

[No response]	Option C	I believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. I would like to see a formation that aims to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually	Positives: ● Strong emphasis on NOS and relevance of science to the ākonga ● Strong emphasis on mātauranga Māori Negatives ● We do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA ie How the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification. The change to both external standards to be a common assessment activity based on unfamiliar contexts and marked by NZQA , sounds good but there is a wealth of science educational research devoted to the fair assessment of NOS, with an acknowledgement that summative assessment of NOS is very difficult (Aydın et al., 2013	Positives ● A compromise between Options A and C Negatives ● As with many compromises it will probably satisfy neither set of goals	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount	2020-06-30 14:37:00	ANON-FDGN-6QUQ-C	2020-06-30 14:37:00

[No response]	Option A	I like the simplicity of the L1 standards and keeping the focus on the application of scientific ideas. It still would allow the teachers and schools to teach any range of content that they wish (from the curriculum) but it removes all the hoop-jumping and massive discrepancies between skills and content that currently exists. I like the concept of having the freedom to teach your own content but assessing their skills/knowledge in similar ways.	I think that this option caters for all of the 7 criteria. Although, superficially, it may appear to contradict the 7th, I think this will depend more on the difficulty of the internal and external tasks and moderation. If it is dumbed down in term of difficulty and too easy , then I would be concerned that the NOS focussed standards could undermine the qualification. However, if there is still a requirement for level-specific ideas and content then there is no need for this to happen. I think a lot will hinge on the exemplars provided by the ministry as this will guide the teachers. Personally, I think teachers will still be able to teach to the ability of their students and own cultural contexts and so they should not be so concerned about under-preparing the students for L2 onwards. I would be concerned at the other options were	I think that this is counter to the 7 criteria as it forces more specialisation and variation into the qualification. Essentially, the more you specialise, the more there will be variation in student learning. It could also close off options to students in L2 and L3 who have chosen certain courses and standards.	Status quo that does not help move forward with any of the 7 criteria.	2020-06-30 14:37:23	ANON-FDGN-6QU6-H	2020-06-30 14:37:23

[No response]	Option C	More flexibility to meet student needs and reflect community, whanau etc	Positives: simple and straight forward, reduced assessment loading for students and teachers; Allows for flexibility Negatives: does not cater for a wide range of abilities.It is unclear whether all students would be expected to sit the 4 standards. Limited opportunity for achievement. Teachers need PLD time and money to support them into looking into how we could make this work for all students and cater for a wide range of abilities	Allows for more diverse courses to run than option one. I do not believe that there should only be 2 contextual strands as this limits flexibility Teachers need PLD time and money to support them into looking into how we could make this work for all students and cater for a wide range of abilities	This is my preferred option. It allows schools to develop courses in line with their unique student abilities,aspirations and local needs. It provides for more opportunities and contexts with which to weave Te Tiriti as based on the needs of Tangatawhenua in relation to the "resources" of the local area It gives more agency to individual schools to develop their own courses and make informed choices based on their own visions for their educational facility I would like to see a couple of "compulsory" standards in this mix, so that all students at level 1	2020-06-30 14:37:41	ANON-FDGN-6QSW-G	2020-06-29 12:06:42

[No response]	Option C	Allows schools that have been extending students with specialist physical science or biological science courses to do so giving students a head start into level 2	Positives Focuses on Nature of Science Negatives To general.	A compromise.	Allows schools that have been extending students with specialist physical science or biological science courses to do so giving students a head start into level 2	2020-06-30 14:42:30	ANON-FDGN-6QU7-J	2020-06-30 14:42:30
[No response]	Option A	I think the focus on NoS enables us to engage students in science for citizenship. I also think it will encourage teachers to incorporate Mātauranga into our courses. I think we can add any of the disciplinary content to any of the standards, so there is no need for other subjects.				2020-06-30 14:52:26	ANON-FDGN-6QUG-2	2020-06-30 14:52:26

[No response]	Option C	We believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and produce students with good scientific literacy. The proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways are. Professor Gluckman (2011) identified that there are at least two distinct objectives of science education at secondary school. The first is that of pre-professional education which is traditionally for careers needing	The positives for this option include the strong emphasis on NOS, promoting scientific literacy, and the relevance of science to the students. There is also a strong emphasis on mātauranga Māori. The negatives for this options include the following: It is going to be challenge to provide fair and valid assessments that actually reflect and test the NOS values and skills. There is a huge risk that these assessments turn students off from science and they will not continue with science. The internal standards currently require non-traditional forms of assessment for example, report writing and videos. These are time-intensive for teachers and students and they also require a high level of literacy from students. In terms of how the subject fits with the	A positive is that it is a compromise between option A and option C A negative is that as with most compromises, the goals of neither option will be met	The positives of this option include: It allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their students. This option allows the flexibility to create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. It also allows schools to offer several science options at Year 11. This recognises both the importance of science and the need to cover a significant amount of content in order to adequately prepare for careers in science. There is even the possibility of	2020-06-30 14:53:39	ANON-FDGN-6QUV-H	2020-06-30 14:53:39

[No response]	Option C	It is the only option that allows for flexibility in course design, to suit the unique requirements of our students, that is if we are going to be able to select from the various subjects to create a course with 18 to 22 credits. If the requirement is going to be to offer the full subject packages as indicated, will mean that this will not be a viable option, as the timetabling and staffing requirements will be beyond the reach of the average NZ secondary school. We already are experiencing difficulties in sourcing specialist Science teachers, and requiring specialist teaching at Level 1, will put too much pressure on people that are carrying the Level 2 and Level 3 often as solo teachers for specialist subjects.	Insufficient coverage of the topics provided. There will have to be duplication with more than one assessment coming from one "subject area" which will be problematic. One assessment per standard is a maximum of 16 credits in the course, which, given the average credit load per subject is 18 to 20, puts a greater demand on other subjects, to the detriment of the STEM focus we are supposed to have. The standards available are not known, so it is impossible to judge whether the skill development for senior specialist sciences will be able to be addressed in this proposed course. With the specialist requirements of Level 2 subjects barely being met by the current Level 1 programs, it is hard to see how this proposed course will be better at providing a broad base of skills. This option does a very poor job at meeting the 7 criteria	This option creates more problems that it solves. If a school has to offer three science subjects in Level 1, it has massive implications for timetabling and staffing. The primary reason why most school offer a L1 science course id to prevent monopolization of the timetable, as your specialist science candidates will feel the need to take both the "specialist science" courses, which means their subject package will be Language and Mathematics (both compulsory) and two science courses, making it hard to have subjects outside the sciences to get traction, leading to competition for students in subjects with	Stated above	2020-06-30 14:59:46	ANON-FDGN-6QU9-M	2020-06-30 14:59:46

[No response]	Option C		Too little choice and not enough flexibility to cater for our diverse learners.	Too little choice and not enough flexibility to cater for our diverse learners.	We like option 3. This is because: 1. It offers maximum flexibility: - You can choose from a greater range of achievement standards so more flexible - You can respond to the current cohort and change the course during the year if there is more choice. Also can respond to new opportunities that arise (eg local curriculum) during the year. - You can alter the course if we have to teach remotely again as again, more choice. 2. More choice of standards means it will be easier to cater for a diverse range of learner and therefore will provide equity across all learners. Option C allows	2020-06-30 15:10:48	ANON-FDGN-6QUH-3	2020-06-30 15:10:48
[No response]	Option C	A more comprehensive and interesting broad-based course.				2020-06-30 15:21:55	ANON-FDGN-6QUX-K	2020-06-30 15:21:55

[No response]	Option C	Closest to what we have now.. Not enough detail.. this questionnaire shows you have not listened to professional practicing science teachers.				2020-06-30 15:22:48	ANON-FDGN-6QUE-Z	2020-06-30 15:22:48
[No response]	Option C	more flexibility, enables teaching to greater depth which is better preparation for L2	I don't believe it meets criteria 1, 3, 5 and 7. I don't believe this option provides depth needed for Level 2 Sciences. I think there is too much research - students need a variety of ways of learning	Still doesn't provide enough flexibility and opportunity to extend those students who want to progress into senior Sciences.	Positives are that there is a lot more flexibility in putting a courses together for a range of different students.	2020-06-30 15:28:14	ANON-FDGN-6QUB-W	2020-06-30 15:28:14

[No response]	Option C	As a low decile school we have a 'gap' that our student need to bridge to access Level 2 and 3 Science courses. Having a greater range gives us the flexibility (which we currently have with NCEA and wish to keep) to create courses to better meet our student needs.	No - it is broader but this does not meet our students needs. We can already teach science effectively thanks - this is about assessment. And Option A makes the assessment drive the learning programmes rather than a measure of students success in our programmes. If Option A is put in place then learning programmes with schemes need to be provided over all strands with relevant assessments....because this is the level of change that is being suggested.	No - is neither one nor the other. Lacks flexibility to provide courses we want	Yes - greater flexibility, allows us to meet student needs. This is a foundational course for our students wishing to go onto Senior science and a Science career Can use in our year 10 programme without narrowing options. Negative - none - that why we want	2020-06-30 15:29:20	ANON-FDGN-6QUZ-N	2020-06-30 15:29:20

[No response]	Option C	It is important for schools to have choice - for example, whether they offer the broad Nature of Science standards being proposed or choose to offer the more specialised Physics, Chemistry, Biology or ESS standards, or to choose whether they offer a blend of these standards to best suit their ākonga. It is also important to give students at Level 1 the experiences of taking genuine externally assesses examinations.	Positives: ● Strong emphasis on NOS and relevance of science to the ākonga ● Strong emphasis on mātauranga Māori Negatives ●I do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA ie how the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification. The change to both external standards to be a common assessment activity based on unfamiliar contexts and marked by NZQA, sounds good but there is a wealth of science educational research devoted to the fair assessment of NOS, with an acknowledgement that summative assessment of NOS is very difficult (Aydın et al., 2013	Positives ● A compromise between Options A and C Negatives ● As with many compromises it will probably satisfy neither set of goals	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount	2020-06-30 15:32:33	ANON-FDGN-6QUF-1	2020-06-30 15:32:33

[No response]	Option A	this is broad enough that you can adapt your context to your classes.	this is broad enough that you can adapt your context to your classes.	this is quite broad still. gives students a reasonably large curriculum to access, which means they can be well prepared for level 2 science without having to take more than 3 subjects in science.	this is so categorized I feel like this would have too many subject options, and students wanting to take science might feel pressured to take many subjects in science at level 1. which limits their exposure to other subjects.	2020-06-30 15:41:49	ANON-FDGN-6QUA-V	2020-06-30 15:41:49

[No response]	Option C	To truly give students the opportunity to achieve in sciences, they need to potential to choose to focus on certain areas. The most able students might study separate sciences. Those who need to be able top engage with science, but not necessarily go onto further education can do a General Science course.	Negatives: This is not good preparation for single science subjects post level 1. There is too little time available to make this meaningful for those students who want to achieve and follow a science career pathway. Positives: I don't see positives with the subjects in this arrangement.	Positives: This is better than the first option in that at least there are opportunities for students to specialise in those areas that they want to move into. The only issue is whether the joining of subject areas allows for in depth teaching. Negatives: Having Physics and chemistry together and biology with ESS seems artificial. Surely student choices are best to create combinations (e.g. bio and chemistry as suggests, or physics and ESS).	Positives: This has the most potential to enable student choice - e.g, a student takes General science and bio / chem / phys / ess depending on preference. Negatives: Does the general science have to be taken by all students, in which case do the students opt to take an additional line / semester(s) for the next subjects, i.e. would the idea be to have bio, chem phys optional subjects as well as general science?	2020-06-30 15:52:44	ANON-FDGN-6QU5-G	2020-06-30 15:52:44
[No response]	Option C	Offers a wide range of options for students. In depth content			Some students may be limited in very specific content areas. In depth content	2020-06-30 15:55:30	ANON-FDGN-6QU1-C	2020-06-30 15:55:30

[No response]	Option C	This enables flexibility for schools to offer both academic programmes with the 4 specialised subjects as well as the more general nature of science options. It retains the content knowledge as well as skills based learning.	Negatives- too broad. Removes the content knowledge. Does not prepare students adequately for senior sciences and then future university study. Students will struggle to engage in science and we will lose them.	Negatives- potentially restricts students with how they have combined the subjects.	Positives - flexibility- We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. - Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order to adequately prepare for careers in science.	2020-06-30 15:58:04	ANON-FDGN-6QUC-X	2020-06-30 15:58:04

[No response]	Option C	It is easier for schools to offer the broad Nature of Science standards being proposed, or choose to offer the more specialized Physics, Chemistry, Biology or Earth & Science standards	Pluses: Strong emphasis on mātauranga Māori More context based Minuses: I dont think that having only NOS focussed standards will adequately prepare students for the Level 2 and 3 sciences. With the assessment totally focussed on NOS the incentives to thoroughly learn the basics of the separate sciences, and the skills needed to do this, will be lost	Positives ● A compromise between Options A and C Negatives ● As with many compromises it will probably satisfy neither set of goals	Positives ● Allows schools to use the great strength and current advantage of the NCEA system Can have student centered / focussed courses,tailoring to the needs of ākonga. ● Allows schools to offer several science options at Year 11. Negatives ● Requires all schools to have well qualified and highly component teachers.	2020-06-30 15:59:00	ANON-FDGN-6QUW-J	2020-06-30 15:59:00

[No response]	Option C	I prefer option C (although potentially could work with option B), as I would like therange of chemistry options to mix in with the general science nature of science course. At our school we have a HUGE uptake of students who take sciences (including multiple senior sciences) into Level 2 and Level 3. Due to this we offer a variety of L1 courses that cater for both students keen to delve deeper into the sciences. One course is a general science course that does both externals and internals from across the L1 science and other individual science standards that are offered currently. This occurs across one blockline in the timetable. However for those more keen and interested in carrying on in science they tend to take a course we call Double Science. Which is a general science	I do not think that option A would give the students we cater for at our school the best opportunities to engage with the sciences. Despite the broad nature of these new standards - I do not think that having only 4 standards will meet the needs of all learners in such a diverse school. Doesn't offer enough choice for students who are passionate about science at school. The internal standards currently require non traditional forms of assessment which are time intensive for students, such as report writing, and require decent literacy for students. With regards to … How the subject fits with the policy vision of a broader, foundational NCEA Level 1 has increasing specialisation at Levels 2 Chem and 3 Chem…. I don't think that NOS focussed topics will prepare students for the Level 2 and 3 individual sciences	I think physics and chemistry fit together better more naturally especially when you get to a university level of understanding. Though at year 11 making these links between subjects like this may not be as clear, particularly to students. I could almost see this as a confusing factor for students who are taking some of these combined subjects. I do think that this is a mid way between option A and C though, and that option C will cater to a much larger range of schools with varying student cohorts than option B.	This is my preferred option. It offers a lot more freedom of choice to cater for multiple different possibilities and scenarios between schools. Additional standards means some schools can help those struggling by selecting the standards they think will be most likely to interest their target students in an effort to motivate and engage. Some students might still find themselves short of credits to meet L1 NCEA and the possibility of being able to sit additional NCEA standards within a specific context that interests them might help them get across the line and reach the standard. It will allows	2020-06-30 16:00:01	ANON-FDGN-6Q8H-6	2020-06-29 15:12:25

[No response]	Option C	Allows schools to use the great strength and current advantage of the NCEA system, ie. tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. Allows schools to offer several science options at year 11.	Negatives: A major positive of the NCEA system is that courses can be tailored to suits the individual needs of the classes/students (in terms of choosing specific standards and contexts to address). Option A takes this away- only NOS standards would reduce the credibility of NCEA.	This seems like a compromise between A and C. It results in a system which does not achieve what either A or C aims for.	Positives: Allows schools to offer several Science courses at Year 11- tailoring a course to meet the needs of different students. Content remains important- the process of learning the content is important to prepare for careers in Science.	2020-06-30 16:01:18	ANON-FDGN-6QUM-8	2020-06-30 16:01:18
[No response]	Option C	Because NCEA levels 2 and 3 already have less content than the past for preparation for further education. If we remove preparation in Level1 for these courses we will have to include more teaching in level 2 which will be very difficult. There is more flexibility for teaching programmes, more flexibiility for student interest.				2020-06-30 16:01:33	ANON-FDGN-6QUR-D	2020-06-30 16:01:33

[No response]	Option C	Option C gives students a well rounded understanding of the science and flexibility to develop a course that meets the needs of a wide range of students. Content is very important and students gain confidence in knowing and learning these skills. I do not want a watered down general science course that does not challenge student's thinking. They need the exposure to all of science.	Nature of science gives us very little to go on and build their confidence with indepth thinking skills in the different scientific areas.	Why would biology be out with Earth and space Science. What flexibility is allowed for meeting the needs of all students?	This is my preferred options. All teachers ought to be trained to support a skills based science course. This would prepare students for level 2 and 3.	2020-06-30 16:03:07	ANON-FDGN-6QU8-K	2020-06-30 16:03:07

[No response]	Option C	Option A is not helpful for level 2 science specialties It is too broad. It does not offer the more academic students sufficient depth. This option A does not offer sufficient depth Option C gives more options for keen students to specialise in the areas they are interested. It leads to more academic rigour and offers more science in a world that needs science At Mount Albert Grammar School we believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix	Positives. NONE Negatives We do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA ie How the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification. T he change to both external standards to be a common assessment activity based on unfamiliar contexts and marked by NZQA, sounds good but there is a wealth of science educational research devoted to the fair assessment of NOS, with an acknowledgement that summative assessment of NOS is very difficult (Aydın et al., 2013, Allchin, 2011). The challenges required to provide fair, valid assessments that actually reflect NOS values should not be underestimated. The	Positives ● A compromise between Options A and C Negatives ● As with many compromises it will probably satisfy neither set of goals There is not the good basis for LEVEL 2 more in depth Science	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their students. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order	2020-06-30 16:03:13	ANON-FDGN-6QAP-Q	2020-06-30 16:03:13

[No response]	Option C	More flexibilty with regard to choice of course. Schools to have choice whether they offer the broad Nature of Science standards being proposed, or choose to offer the more specialized Physics, Chemistry, Biology or Earth & Science standards, or to choose whether they offer a blend of these standards, to best suit their ākonga.	No flexibility regarding organisation	Positives - A compromise between Options A and C Negatives- As with many compromises it will probably satisfy neither set of goals		2020-06-30 16:03:28	ANON-FDGN-6QAN-N	2020-06-30 16:03:28

[No response]	Option C	It provides the most options, you can do A if you like that but people who do not like that have other options, it means that there are more options for schools.	Having extensive experience with marking with NZQA they have a ever decreasing trust level with teachers and more absurdly narrow focus when it comes to marking, exam setting and moderation. they are not happy to rely on a teachers professional judgement, and so must make such a rigid framework to maintain a bell curve in standards that are meant to be standards assessed. So how does this apply to option A? the Nature of science is not based on the recall that is so desired for marking and teaching, the understanding of science is secondary to the understanding of assessment, and just teaching NOS and assessing it especially externally will be nearly impossible, and will be impossible in a meaningful manner for NZQA.	It is better than A and not as good as C if you are going to do half and half then you will please no one.	It means we can reset the terrible marking and teaching and assessment rolled in over years of poor practice by NZQA which is a positive. it could be an opportunity to begin to assess understanding and maybe stop the constant teaching for assessment or credit farming, but well I wouldn't put money on it. But it is still better than the option which is just going to turn itself inside out and make a weird little educational blackhole.	2020-06-30 16:03:47	ANON-FDGN-6QAS-T	2020-06-30 16:03:47

[No response]	Option C	Greater flexibility in course design - we are a large school with a wide variety of students need and option C serves the needs of out students the best It is also important to give students real experience of externally assessed examinations, with some real content - not just interpreting resources etc. studnets will not be fully prepared for level 2 and 3 if they do not have practice at level 1.	positives NOA and Maori are well looked after negatives NO academic rigour in the course - NOS science focus is not sufficient - students need to learn some academic contnet not enough content - The challenges required to provide fair, valid assessments that actually reflect NOS values should not be underestimated. The danger is that these assessments turn off students from science by becoming formulaic writing exercises, similar to the current Level 1 Chemistry Investigation.	positive - its a compromise between A and B instead of telling us, only 4 stands, have now given a few extra options negative no one will be happy - will dilute everything	positive - allows far more creativity in course design and service a lot more student needs Allows schools to use the great strength and current advantage of the NCEA system, that is designing course for their student clientele We can create courses that suit those aiming for science-related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. internationally - many countries offer double if not trip science as they recognize the importance of stem subject Negatives some PD will be	2020-06-30 16:06:38	ANON-FDGN-6QAD-B	2020-06-30 16:06:38

[No response]	Option C	The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually arranged around mathematics, physics, chemistry, biology and perhaps general science. The second is the citizen-focused need for all children as they mature to have a clear understanding of the complex world of science that they will	Positive: - Emphasis on Nature of Science - Strong emphasis on mātauranga Māori Negatives - Does not prepare students for the rigorous nature of L2 and L3 Science or University - Providing fair, valid assessments that actually reflect NOS values should not be underestimated. These assessments turn off students from science by becoming formulaic writing exercises, similar to Social Science. - Internal standards require high levels of literacy and are time intensive for teachers and students, and creating a portfolio of work will be challenging for students.	1) Positives: A compromise between option A and C. Negative: As with many compromises it will probably satisfy neither set of goals for Schools that are science rich in content there may not be enough depth. If this approach is finalised, what could the Ministry and Subject Expert Groups do to ensure all schools are able to teach Science effectively? Create the resource and task with assessment schedule. The current TKI tasks donot provide enough task options for schools to choose from. For this option, what would you think would be the best combination	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order	2020-06-30 16:07:25	ANON-FDGN-6QAU-V	2020-06-30 16:07:25

[No response]	Option C	-This pathway is more flexible and suits the students at my school, -options A and B do not provide a lot of options for the students to choose from -Level 1 is obviously a base for L2 and for L3 , narrowing the option choices at level will will affect L2 and L3 as these students progress.	Negatives - this option is too narrow in the sense of options given to teachers and students but a very wide context to teach in the sense that the interpretation of this option could be very different in different schools. - I dont think that the overall vision can be met through this option	It is a comprise, so it would not support the overall vision of L1	- best compared to the other 2 options - the school has more options - mos teachers are already very equipped to teach a range of standards at level 1 , for new teachers or teachers who do not feel confident enough - PD/ time to get upskilled can be provided by teachers within the area.	2020-06-30 16:08:38	ANON-FDGN-6QA2-S	2020-06-30 16:08:38

[No response]	Option C	I think this option provides more diversity and flexibility for learners. It means that all schools can design courses that students want.	I feel this option may work well for students who like to fully investigate science topics without the boundaries you could find in more narrow science topics. Some students will struggle with the broadness of these standards. I think the probable lack of content knowledge that would fit around these standards would increase the cognitive load needed to do well - and the self-management likely to be needed to do a more broad topic will disadvantage neuro-diverse students. If this approach was finalised I think a huge amount of Professional development would need to happen - for the teachers to support students - I don't see this as likely. This would also mean that some schools will succeed more than others -	This option is not ideal I think this option makes science less broad - I think it would mean students would be limited in how much they could learn about the different branches of science. I don't see the point of this option - the worst of both Options A and C.	I think this option provides the most flexibility for students and schools. I think this will mean NCEA and schools can make sure every student can do and achieve the course they want/need to do. There is minimal negatives to this option I think - as schools could trial the generic science course and see how it works for their students and it will give time and less pressure for teachers and students to investigate the option.	2020-06-30 16:08:46	ANON-FDGN-6QA3-T	2020-06-30 16:08:46

[No response]	Option C	The most rigorous of the three options for teaching and assessing senior school sciences at high school	It will be difficult to teach (and for students to learn effectively) a higher understanding of science concen[pts using only NOS. Project based assessment is difficult to assess fairly and consistently across a school, let alone across multiple schools, areas and regions	Although roughly equivalent of a halfway point between A and C, not an ideal form of assessing science learning at high school level, especially when we are expecting to prepare students for L2 and L3	The best of the three options available, however this is in no means ideal.	2020-06-30 16:09:17	ANON-FDGN-6QAT-U	2020-06-30 16:09:17

[No response]	Option C	1) greater flexibility with more standards available in different strands allows for more personalised course design. 2) more targeted contexts allows for addition of skill work and nature of science strands to be woven into the foundations taught. Blooms taxonomy works best when starting at the memory level and progressing up to the creative level rather than vice versa. In same way when developing the learning journey for our students we must build on what they know and extrapolate upwards rather than asking them to see the big picture but miss the level of detail beneath it to give depth to their analysis / critique.	negatives 1) contextually too broad - for assessment purposes - for accessibility - for depth of analysis 2) too many eggs in one basket approach 3) lack of good exemplars/working models 4) practical outworkings will be mountains of work which will be unsupported 5) assessment will end up being generalised "in your context" open ended questions which will not support those with lower literacy levels such as internationals, or recent migrants/ESOL and create a massive barrier	1) will end up streaming physics and chemistry as intellectual sciences and geology and biology as applied science 2) lack of connection	1) greater flexibility with more standards available in different strands allows for more personalised course design. 2) more targeted contexts allows for addition of skill work and nature of science strands to be woven into the foundations taught. Blooms taxonomy works best when starting at the memory level and progressing up to the creative level rather than vice versa. In same way when developing the learning journey for our students we must build on what they know and extrapolate upwards rather than asking them to see the big picture but miss the level of detail beneath it to give depth to their	2020-06-30 16:17:54	ANON-FDGN-6QA4-U	2020-06-30 16:17:53

[No response]	Option A	I like the fact that the content needed can be assessed though a skills based assessment rather than regurgitation of facts. It also us to assess the important skills that scientists need to be life long learners.	Positives- it allows for customizing individual courses depending on the learners in front of you but still gives enough of a base to then specialize from later on. Also gives the opportunity to co-construct with the students to make learning authentic. Yes Resources and possible ideas.	Negatives- could possibly silo students into science subjects too early. To cover all the standards would either need a huge amount of timetable time or you would only touch the surface with each standard, Probably - chemistry and physics. Biology with ESS.	Negatives- students would end up specializing way too early when they still need a broad and balanced science curriculum.	2020-06-30 16:26:27	ANON-FDGN-6QAJ-H	2020-06-30 16:26:27

[No response]	Option C	If gives choice for those students who desire to go on with science beyond level 1 or who enjoy learning about science rather than just considering the Nature of Science. The students who wish to know more content. We have over a quarter of our year 11 students who currently choose to do an additional science course and would like to be able to continue to offer this option. This would also bring Science in line with the humanities who kept Social studies, History and Geography separately and the Languages where each different language is offered and the Arts where each different type of performance is kept separate. .	This option does not met the 7 criteria since it will not prepare the student sufficiently for studying the 3 specialist science subjects at a higher levels. To succeed at the higher levels there is a need for a deeper and broader content knowledge that the proposed standards will allow. One size does not fit all - in fact the one setup will be a disappointment to many students. particularly for those who love science.	This is better than option 1 but not as good as option 3. The problem of which combinations to put in the courses would be removed if schools could just choose to mix and match the standards - this is really essential for schools to meet the different needs of their students. It fits the seven criteria better than option 1. Even with the mix and match schools can still be made to keep the 50: 50, Internal:external approach, if that is so much desired by the government. Exemplars and workshops could be provided and across school support set up to help Science be taught effectively.	This is the best option provided schools could mix and match the different standards to meet the needs of their students. One size does not fit all students and this would allow schools to provide courses to match the different students in their schools - differentiated learning. This fits the seven criteria better since it allows schools to meet more individual needs of students and prepare students more thoroughly for level 2 and 3 specialist subjects. Even with the mix and match schools can still be made to keep the 50: 50, Internal:external approach, if that is so much desired by the government. Exemplars and workshops could	2020-06-30 16:30:45	ANON-FDGN-6QAQ-R	2020-06-30 16:30:45

[No response]	Option C	Option C still allows for some schools to offer highly specialised courses. I believe Option C will allow for more flexibility of courses offered, depending on the school size / cohort etc. It will allow for some students to take full academic science courses. I believe if we were to only have Nature of Science, there would be a huge difference between what one school offers and what another school offers. It will mean there will be a more uniform foundation for the senior sciences, especially important if students move from one school to another in Year 11.	Option A does allow for a more broad, foundational qualification but does not allow for a more specialised course / set of courses for those who want it. A negative outcome is that some science strands are 'lost' by schools who are not investing in the new way of thinking about teaching science.	Option B could be a good compromise between A and C. There could be some interesting courses designed with interlinking science concepts.	This option allows for the broader foundational qualification AND the option of a more specialised course. I like the flexibility for schools this option gives. There will need to be some good guidelines, unit plan ideas would be helpful, engaging contexts, exemplars. We don't want to lose the academic level that some current standards / courses offer, we need to maintain the robust science that leads students to the more academic sciences further down the track. An online tool where students and teachers could gain resources from would be good. It would be great to have a site where NZ teachers could submit	2020-06-30 16:32:32	ANON-FDGN-6QA6-W	2020-06-30 16:32:32

[No response]	Option C	All of these options are still very vague and the proof will be in the detail. However, Science as a curriculum area covers 5 distinct areas and providing only 4 assessment opportunities significantly limits the options of schools to tailor courses for their pupils. I appreciate we can modify tasks, yet being able to select specific content related tasks to extent your top pupils (and be able to offer a concurrent course) and also have more internal based tasks for struggling pupils is important.	Very narrow. Standards came from 'big ideas' two of which I feel are a joke. This option will significantly reduce the quality of Science education in NZ. It feels at total odds with the governments push towards STEM.	In general, the middle ground tends not to work for the desired intentions or outcomes. Not in favour of this option, although prefered compared to option A. The more flexibility the better,	Best option. Q: If this approach is finalised, what could the Ministry and Subject Expert Groups do to ensure all schools are able to teach Science effectively? A: Consult with the subject associations! This consultation (i.e. about the existence of this survey and any feedback from you about all the time and energy given to feedback the initial proposal) have NOT been clearly or transparently communicated. I have seen the open written letter from NZIP and other communication from ASTA and CSTA. All are pretty damming of your process and communication and proposals to date. If you want	2020-06-30 16:36:29	ANON-FDGN-6QS9-J	2020-06-29 11:08:32

[No response]	Option C	Opt A lacks content-context connection Opt B Waters down content lacks scope and the actual scope is not laid out to tell us what it would entail, so we are responding to tweet level content. Opt C most closely resembles what we currently do and since i don't think it broken why change (lack of evidence supplied to show why a change is needed or how the proceed changes might actually help.	"nature of Science" give us very little to go on, what would this actually look like. Looks like a bunch of hippy shit generalisations for writing essay style questions instead of something actually like what scientist do...	We actually make course that are cross domain now to meet the need/deamnds of our students. removing options does not increase flexibility. This seems like a B****it compromise position that has nothing to recommend it over A or C.	Less change = less stress STEM best promoted by this option Why not send us proper exemplars of what you mean by this... Nope to hard. Where is the evidence that we need to change stuff i.e. what is the problem. Just Nooooooooooooooooo!!!!!!!!!!	2020-06-30 16:07:00	ANON-FDGN-6QAY-Z	2020-06-30 16:07:00
[No response]	Option C	It is really the only option in today's society worth considering. Science is too important for the planet to not take it seriously.	This could be an option for those not considering a career with science requirements. This would be a massive step backwards and contribute to the dumbing down of the population. If you want to drive 'lack of innovation, free thought and expertise' then opt for this route.	What is the point of this option? Biology and planetary space science combined? Honestly who thought this was a good idea? If you are going to have a middle ground, at least put biology and chemistry together and physics and space.	If you want to keep New Zealand up with international standards, this is the only option.	2020-06-30 17:24:15	ANON-FDGN-6QA7-X	2020-06-30 17:24:15

[No response]	Option C	Content is still very important and students gain confidence from learning concepts that can be easily assessed. A balance of skills is needed for tertiary and vocational learning but I am still hearing that content is still very much in demand from these institutions.	This is too much of one style of learning and thinking. Students do need to distinguish the different disciplines while still being able to connect the sciences together. Delivery is too dependent on the teacher Positives is the value of Nature of Science and Critical thinking skills and creativity and real local contexts	Positives are there is more of a balance between foundational content and nature of science. Still meets the 7 criteria. Subject expert groups could specify the most important content to learn at this level that builds a foundation for future and suggestions for bringing context and nature of science physics chem as suggested and bio earth science as suggested	A positive is that this is popular with teachers/parents and I believe tertiary providers, It is also close to status quo and picking the standards to suit the student is the right thing, the fact that some schools push students into standards that do not give a broad foundation is not the fault of the standards. Set some criteria for schools picking standards in a course?	2020-06-30 17:40:03	ANON-FDGN-6QAG-E	2020-06-30 17:40:03
[No response]	Option A					2020-06-30 17:45:20	ANON-FDGN-6QAV-W	2020-06-30 17:45:20
[No response]	Option C	Gives flexibility to tailor course to needs of students and prepare them for level 2 options	Does not have sufficient width to prepare students. IMO students are not developmental ready for such a course			2020-06-30 17:59:35	ANON-FDGN-6QA9-Z	2020-06-30 17:59:35

[No response]	Option C	At Otahuhu College we believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing	Positives: - it emphasizes NOS and inquiry based learning -Strong emphasis on mātauranga Māori Negatives: We do not believe that having only NOS standards meets the credibility requirement of the vision for NCEA ie How the subject supports the credibility of NCEA as a qualification overall among stakeholders, including its credibility as an internationally recognised qualification. The change to both external standards to be a common assessment activity based on unfamiliar contexts and marked by NZQA, sounds good but there is a wealth of science educational research devoted to the fair assessment of NOS, with an acknowledgement that summative assessment of NOS is very difficult (Aydın et al., 2013, Allchin, 2011). The	Positives - A compromise between Options A Negatives - As with many compromises it will probably satisfy neither set of goals	Positives ● Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. ● Allows schools to offer several science options at Year 11. Currently we have two science courses with one focused on preparing them for university studies and the other focused on environmental and food science for those who arent as academic but still really enjoy science. Many countries place so much value on science for their citizens	2020-06-30 18:16:04	ANON-FDGN-6QAH-F	2020-06-30 18:16:04

[No response]	Option C	Offers a variety of learning experiences in all areas of Science PLUS the NOS.	Positives: NOS offers the underpinning Scientific knowledge every student should have. Negative: Too much focus on NOS, and neglecting exposure of students to branches of science	Positive: Same as option A plus, it is meeting options A and C halfway. Negative: Still, not exposure to all areas of Science	Positives: Students get exposed to all branches of science, so they can make informed desitions about their subjects in Y12 and Y13. Negatives: Needs highly specialized teachers, which, for some smaller/isolated schools might be a problem to source.	2020-06-30 19:52:37	ANON-FDGN-6QAX-Y	2020-06-30 19:50:13
[No response]	Option C	Able to have specialised courses at level 1	No internally assessed course for low ability students			2020-06-30 20:15:05	ANON-FDGN-6QAE-C	2020-06-30 20:15:05
[No response]	Option A	Equal foundation science learning for all 4 sciences before specialization in level 2.	Pd to up skill teachers in subject knowledge as required.			2020-06-30 20:22:27	ANON-FDGN-6QAB-9	2020-06-30 20:22:27

[No response]	Option B	This would allow students to have more timetable options and still be able to do at 2 specialised sciences.	Positive - it gives school broader and flexible contexts relevant/specific to school community Negative - it runs the risk of schools not covering science content required for prior knowledge in senior levels	Positive - students with science pathways can select specialised subject standards and still be able to have the broader scientific skills provided by the NOS standards. Biology and Chemistry combo is often very popular for students interested in health related pathways. Physics and Chemistry for those interested in engineering pathway.	This option will suit more academic students those already catered for by the system. Too much specialisation which will be problematic for school timetabling. Also this will not work for low decile schools with students who are struggling to engage in science. But good to give flexibility to schools to design their courses based on their context/students.	2020-06-30 20:41:06	ANON-FDGN-6QAK-J	2020-06-30 20:41:06

[No response]	Option C	Option C is the best option to enable differentiation of Science learning experiences to cater for students with diverse abilities and interests. It also prepares students adequately for higher level science education.	Does not meet the seven criteria. Positives - offers application of basic science capabilities Negatives- Insufficient content knowledge and science skills for secure and competent scientific training Financial support to schools for PD for teachers to upskill.	Meets the seven criteria but limited options to cater for diverse learning science programs to meet interests and needs of student. Financial support to schools for PD provided for teachers to upskill	Meets the seven criteria. Best option to provide the foundational science education for all our students because we can tailor programmes based on interest, ability and future vocational training.	2020-06-30 21:16:10	ANON-FDGN-6QAF-D	2020-06-30 21:16:10
[No response]	Option B	If spreading it out into 4 subjects students might become "stuck" with filming up on science subjects and missing out on other interests. If only 1 option students who like to specialise to their interest can't.				2020-06-30 21:21:42	ANON-FDGN-6QAA-8	2020-06-30 21:21:42

[No response]	Option C	I prefer option C because I believe that this offers the greatest amount of flexibility for schools to create courses that meet students' interests and needs.	I believe option A would facilitate a move away from learning content and assessing it. This may be a goal for some educators and schools, but not for all. I don't think it suits a student that would like to pursue a traditional science career such as medicine or veterinarian. There are tertiary education courses and career pathways that require the learning and formal assessment of scientific subject knowledge before Year 12/13. This option does not cater for those students and careers.	It's a strange option, clearly better than option A, but also clearly worse than option C. With 20 standards to choose from, I can create a set of courses that can meet a variety of students' needs. With just 12 standards, there is less flexibility. Personally, I think Physics and Planet Earth & beyond fit together naturally (with Earth Science the odd one out). Biology & Chemistry could be combined, as a good foundational understanding of Chemistry is needed for higher level Biology.	Option C offers the flexibility to offer the greatest variety of courses to students. Both the advantages and disadvantages are that this is most similar to the existing structure. We are not revolutionising science education. I don't think we have to.	2020-06-30 21:38:11	ANON-FDGN-6QA5-V	2020-06-30 21:38:11

[No response]	Option B	This gives the best range of options without becoming overwhelming and creating a huge amount of work in recreating 20 new assessment tasks. This gives schools the flexibility to keep specialist subjects (Bio internal and External with NOS internal and External) but also mix and match any of the specialist areas together. Bio/Chem/NOS etc. I am not sure how the 50% external requirement will work for lower decile schools where the external achievement rates are not as high as elsewhere, and many of our students come into High School with much lower literacy levels but I would urge the exam writers to check their literacy age levels when creating exam questions as some of the Biology exams are getting unachievable for the masses https://sciblogs.co.nz/bi	Negatives of Option A is the reduction of deep specialist content knowledge for students who already know their career pathway. L2 is currently quite limited in what is on offer to students and L1 standards currently allow quite a range of options we don't have with the limited L2 standards (Biology). Also seems to be a little confusing that each NOS standard offers opportunity for each strand (does this mean all 4 strands are taught and then students are assessed in one or students can choose strand to use in their evidence? Portfolio based evidence across multiple strands will be required? Seems confusing for me currently. Loss of successful double lines of Science in some schools (even decile 1 schools see huge success with this option in specialist health academies etc). Seems	Positives - Option B offers better choice for schools to maximise access to all science specialties. Still retains the harder external requirement at 50%, but offers more flexibility. Negatives - having to group certain curriculum areas seems unnatural, why specify they have to do at least two different subjects? Is this to retain a range? Could be difficult to please everyone with the groupings of curriculum areas. Having more agency and choice in schools creates more opportunity for schools to ensure pathways into Level 2 are maintained not reduced. With generic NOS standards how will a student know which Science they	Positives - gives schools much greater choice and agency to control their own programmes. Could roll out over a few years so recreation of standards was not so overwhelming. Negatives - Lots of new standards to create tasks and resources for. Maybe gives too much choice and has no real clarity around which ones to offer. Having more agency and choice in schools creates more opportunity for schools to ensure pathways into Level 2 are maintained not reduced. With generic NOS standards how will a student know which Science they resonate best with to select L2 subjects? There is no barrier	2020-06-30 21:44:42	ANON-FDGN-6QA1-R	2020-06-30 21:44:42

[No response]	Option C	This allows students to get a foundation in general science and specialize in subjects they are interested in. This is more in line with international standards.	This option provides a general foundation of science, but limits students who excel in a particular science subject. It meets the criteria especially as a broad qualification, but it may discourage or limit students who want to specialize in a specific subject.	This option limits students who would need different science combinations.	This is the best option as it provides both a general broad foundational qualification as well as subjects that students can specialize and excel in. It is the most flexible option. For effective teaching, schools should employ specialist teachers for each subject offered and have classrooms, laboratories and equipment dedicated for each subject.	2020-06-30 23:06:04	ANON-FDGN-6QAW-X	2020-06-30 23:06:04

[No response]	Option B	This gives greater depth as a foundation for further study while still keeping level 1 as a broad base in science.	Positives. It keeps the base broad at level 1 Negatives- does not provide depth to allow students a solid foundation for specialization in levels 2 and 3. This means students who are intending to follow a science career will either not have the necessary depth when starting university or will have a steep learning curve in level 2 and 3	I feel there should be three options. Physical science- focusing on Physics and Chemistry Positives: allows more depth for students who intend to follow scientific careers without too much specialization. Environmental- focusing on biology, Earth Science and Space. A third option giving an overview of all four (similar to option A) would be useful to ensure basic scientific literacy for students who do not intend to follow science further Students taking the first two courses would have equivalent knowledge to	Positives: solid foundation for further study. Negatives: multiple course options may not be possible in smaller schools. This would cause a discrepancy between the preparation for university provided in different schools. Too much specialization at this level may cause students to narrow their options prematurely	2020-06-30 23:37:15	ANON-FDGN-6QAM-M	2020-06-30 23:36:05

[No response]	Option C	Option C gives the most options to schools and students who want to design a custom course, and have a choice about where to focus their learning.				2020-07-01 03:40:57	ANON-FDGN-6QAR-S	2020-07-01 03:40:57

[No response]	Option C	At Cashmere High School we believe that New Zealand has an excellent curriculum document based on sound values with the aim of producing well-balanced citizens capable of creative and critical thinking. The Science curriculum rightly emphasises the Nature of Science (NOS) to complement these overall aims and the proposed NCEA assessment matrix under Option C allows the flexibility to design different courses that suit the needs of our students, whatever their future pathways. We aim to satisfy both of the objectives identified by Professor Gluckman (2011): There are at least two distinct objectives of science education at secondary school – the first is that of pre-professional education which is traditionally for careers needing science, usually	Positives: Strong emphasis on NOS and relevance of science to the ākonga Strong emphasis on mātauranga Māori Negatives The main problem with Option A is the risk. It amounts to a giant educational experiment on the tamariki of NZ with no supporting evidence given as to the benefits. Philosophically we agree that teaching with a NOS perspective addresses many of the objectives of the curriculum and a modern science based society. However, to offer this as the only course for all New Zealanders is a huge risk, especially as NOS is the only thing being assessed. The impact of high-stakes assessment on students is considerable, and although the aims of the course may be laudable, the effect of the	Positives A compromise between Options A and C Negatives As with many compromises it will probably satisfy neither set of goals	Positives Allows schools to use the great strength and current advantage of the NCEA system, i.e., tailoring courses to their ākonga. We can create courses that suit those aiming for science related careers as well as those that need the NOS skills we wish all our citizens to have. Allows schools to offer several science options at Year 11. Many countries place so much value on science for their citizens and economies that they offer double or even triple science at this level. This recognises both the importance of science and the need to cover a significant amount of content in order to adequately	2020-07-03 13:54:12	ANON-FDGN-6Q9A-Z	2020-07-03 13:54:12

[No response]	Option B	Good balance of old an new	Positives: new approach to teaching science, bigger picture stuff, students come out as critical thinkers, great if this is their last exposure to science Negatives: too much too soon, difficult subjects to teach, would involved full overhaul of current system resources etc. Massive amount of work to be confident teaching this. seven criteria - i don't really understand the criteria Loads of resources and scaffolding of how this could be taught. Many different exemplars that meet the criteria. resources, resources, resources	Positives: good balance of both old and new. Allows time to develop resources for NOS standards without feeling inundated with having to change everything. Interesting approach to group physical sciences and natural sciences. New approach whilst still using some existing resources. Chem and bio do fit nicely together as could earth and space science and chem or phys.	Positive: lots of options. Allows for single science subjects Negative: too many options, same as old system which has been done to death and ready for a change. likely to lose NOS standards if people don't want to change.	2020-07-27 16:28:15	ANON-FDGN-6Q1R-9	2020-07-27 16:28:15

[No response]	Option C	It gives more flexibility to put together programmes	Negatives - to narrow - not all students work best in contextual programmes - Not as much flexibility as the other two options. It doesn't support pathways for individual learners.	This would allow some pathways for individual learners. Physics and Chemistry Biology and ESS but often Chemistry can fit very well with Biology	This option give more scope for schools and students - mixing and matching to suit the needs of the students - It still reduces the number of credits over all that can be assessed A school could chose a Nature of Science internally assessed standard with cross contextual ideas - then chose different externals. This gives great flexibility to meet the needs of students and school programmes.	2020-08-02 18:22:33	ANON-FDGN-6Q4A-U	2020-08-02 18:22:33

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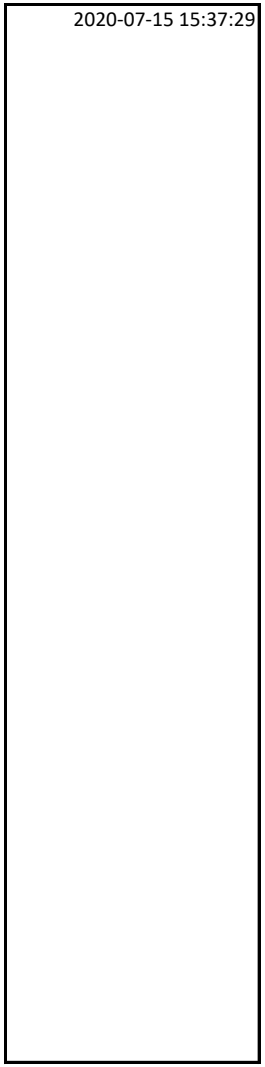
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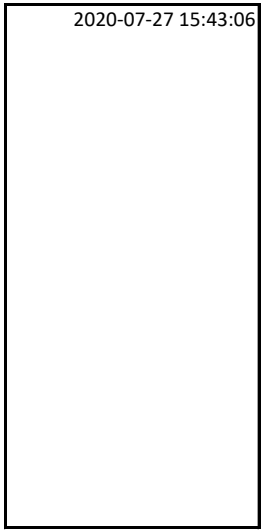
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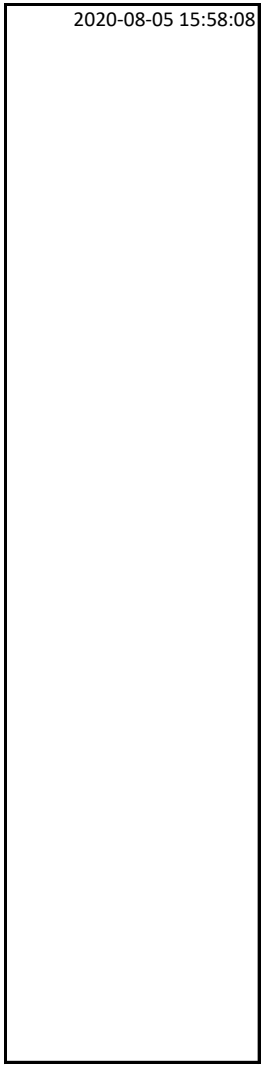
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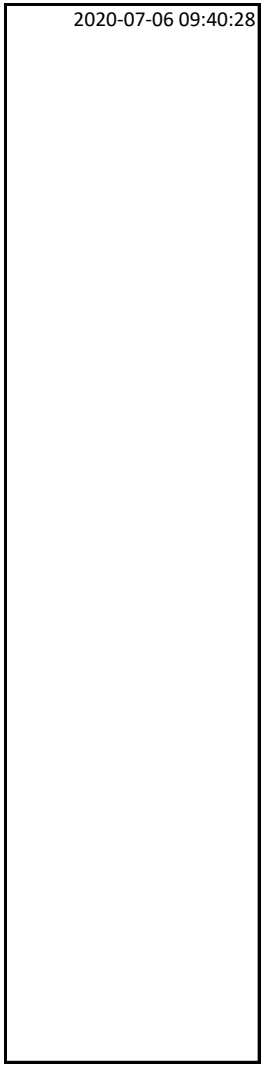
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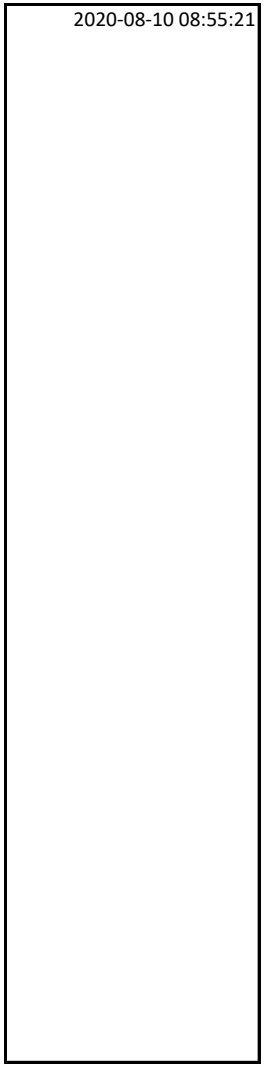
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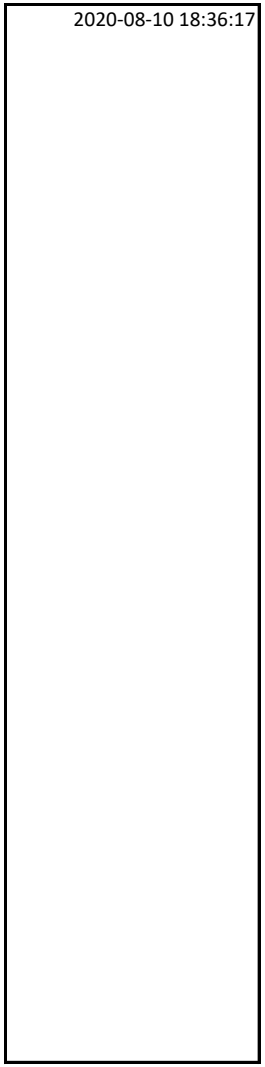
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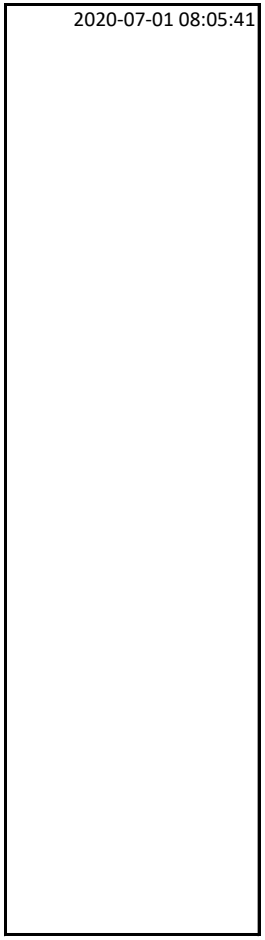
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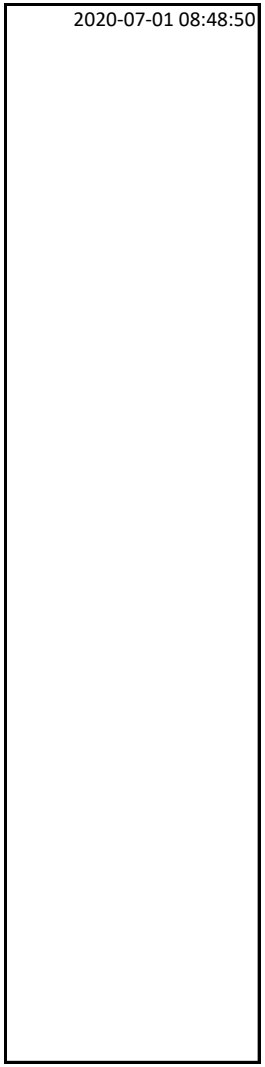
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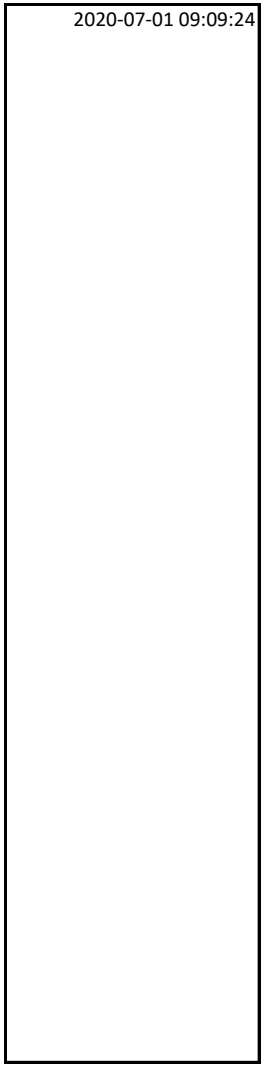
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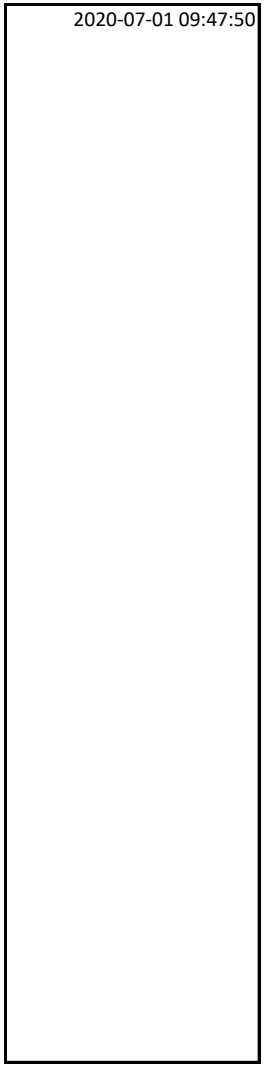
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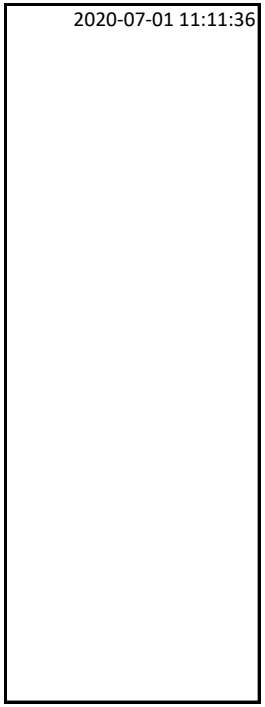
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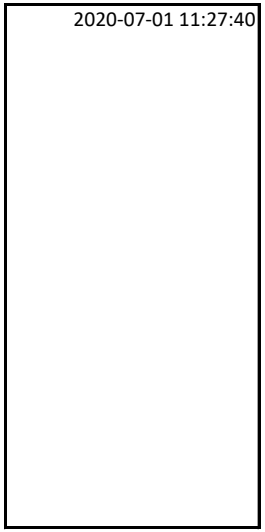
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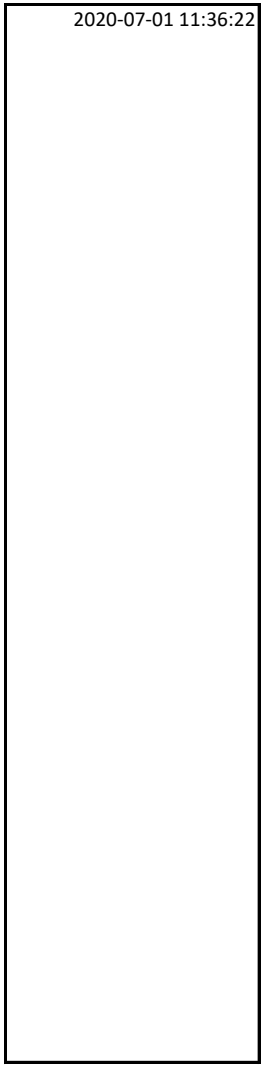
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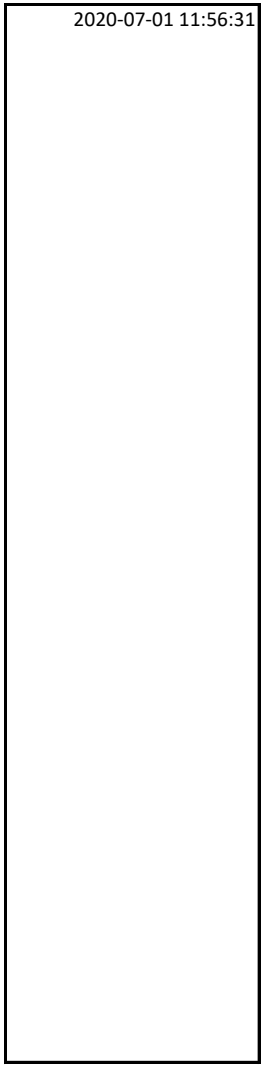
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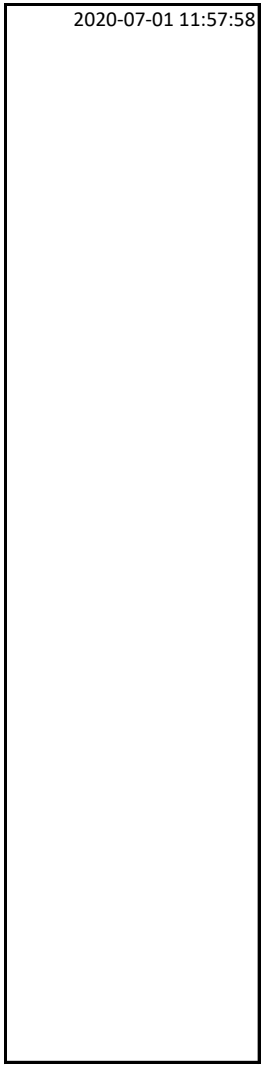
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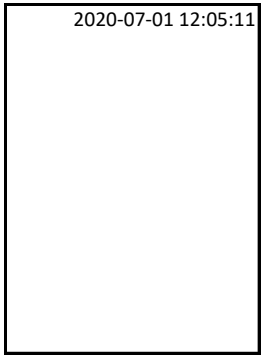
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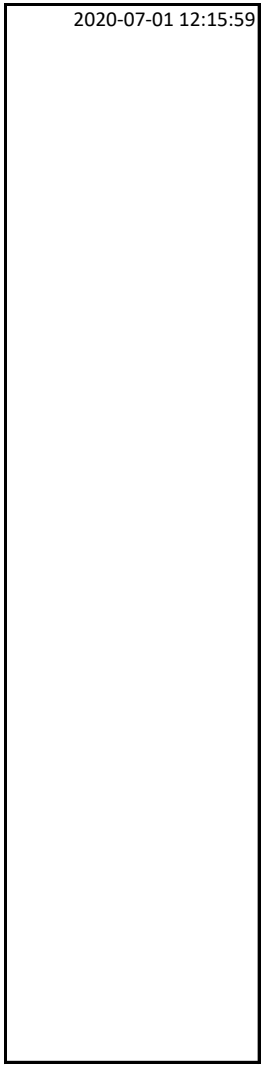
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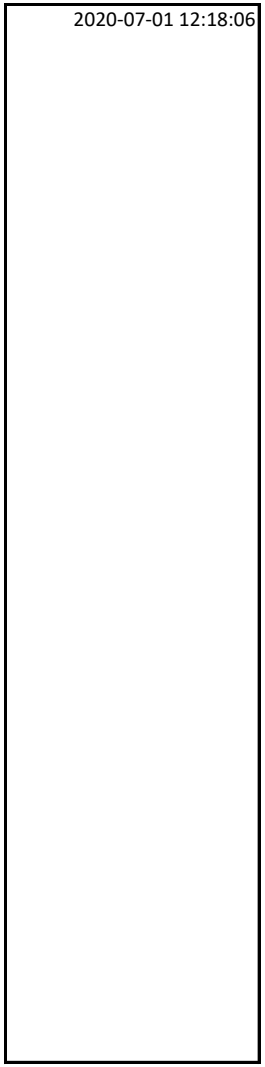
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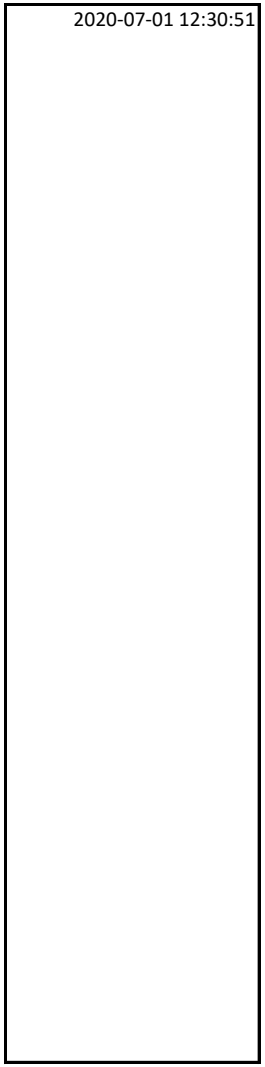
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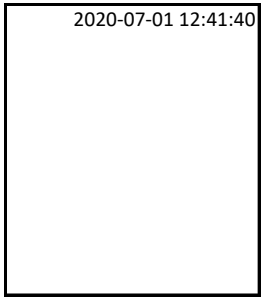
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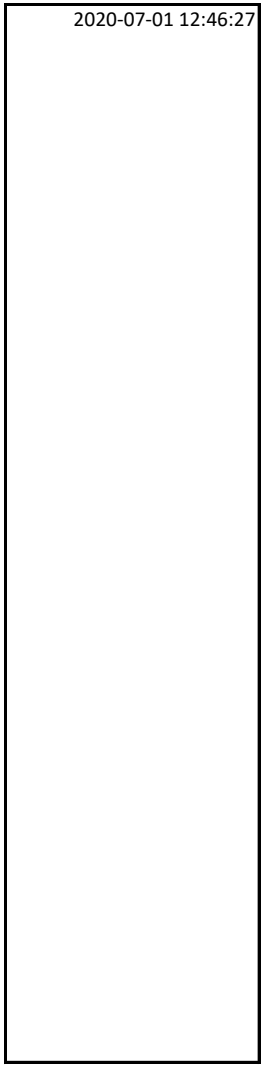
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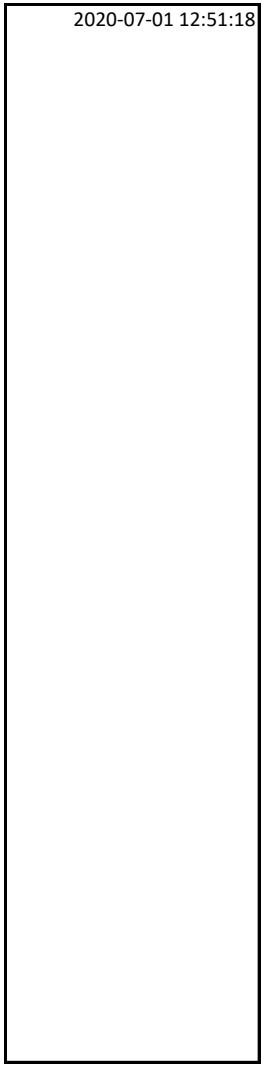
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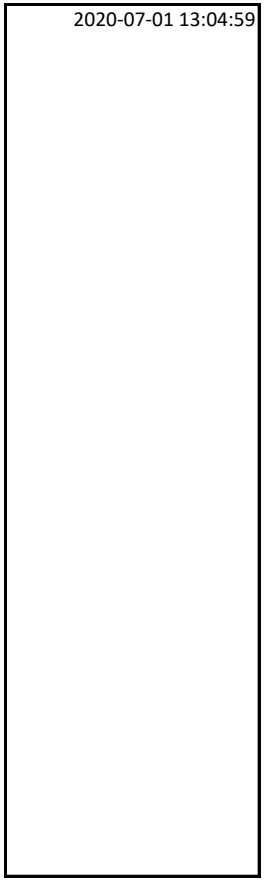
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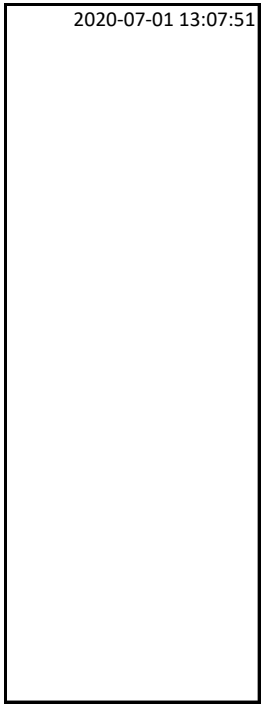
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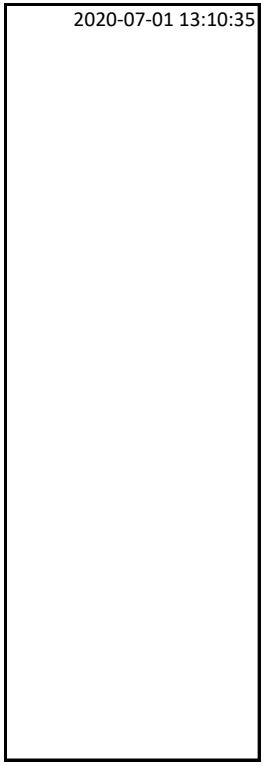
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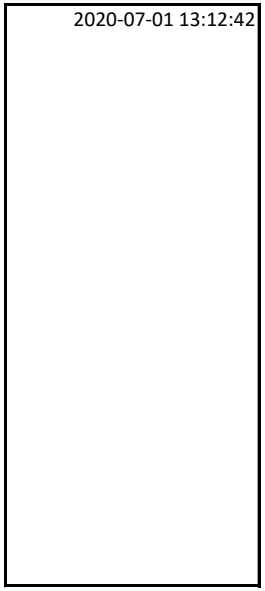
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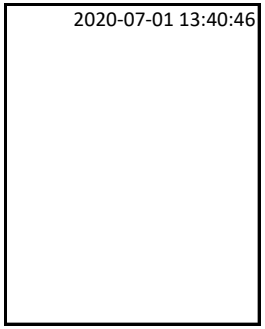
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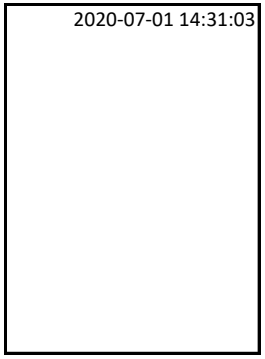
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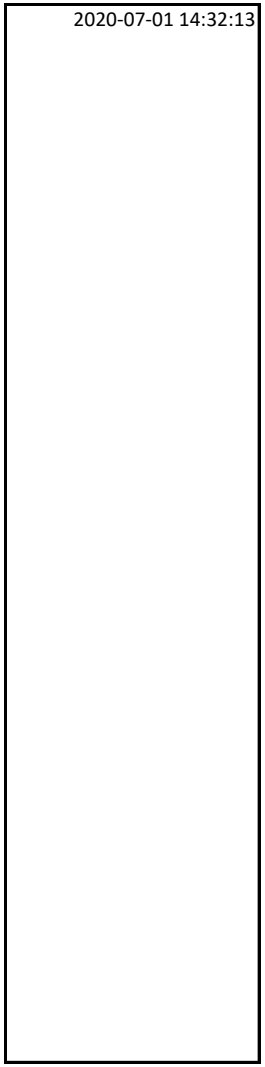
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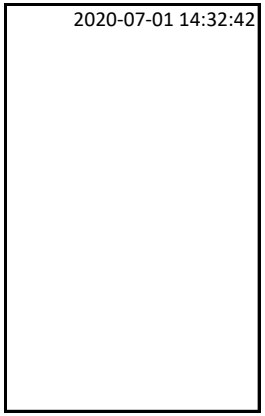
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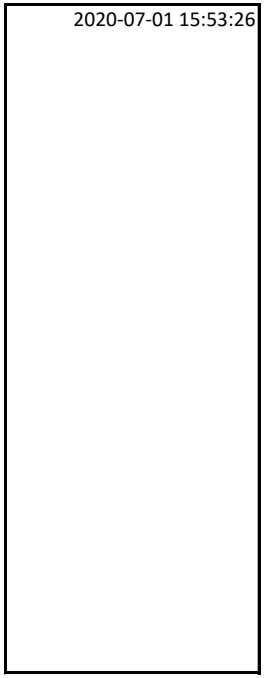
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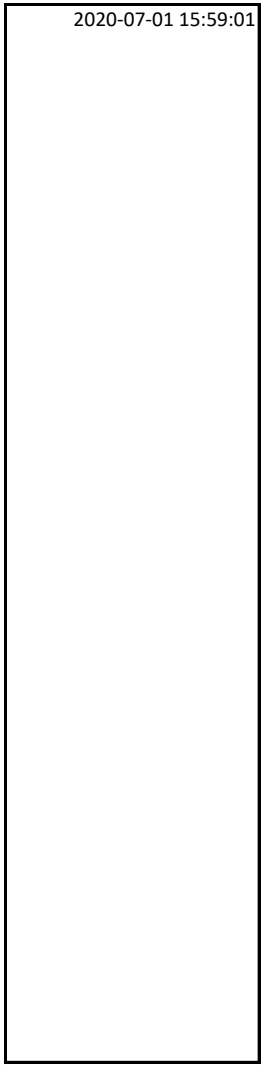
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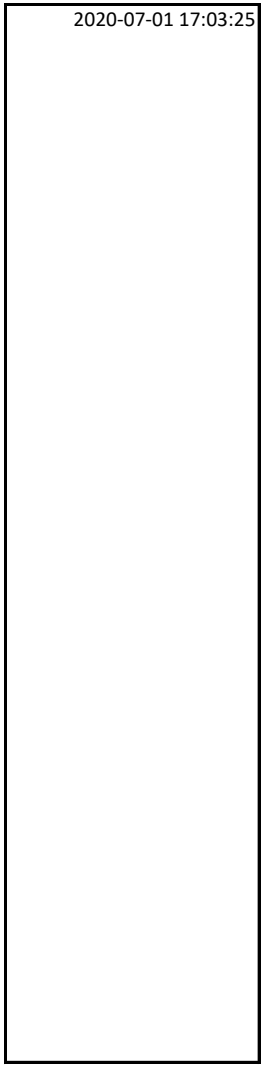
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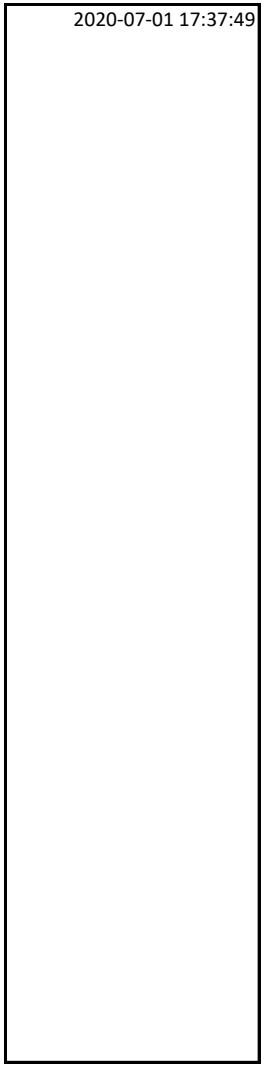
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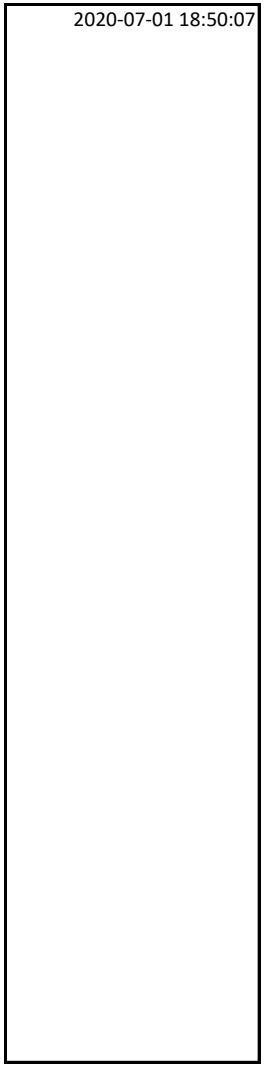
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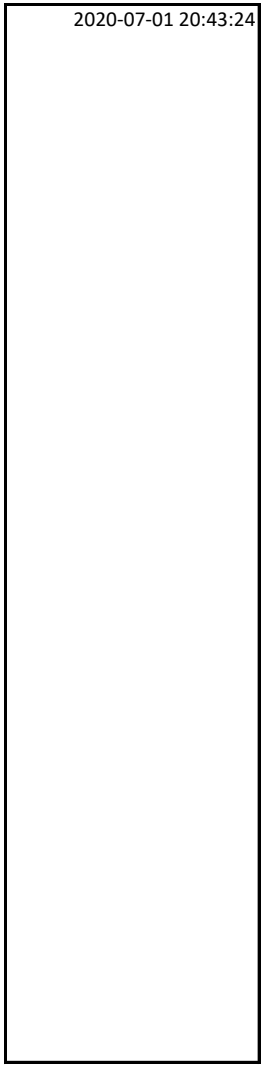
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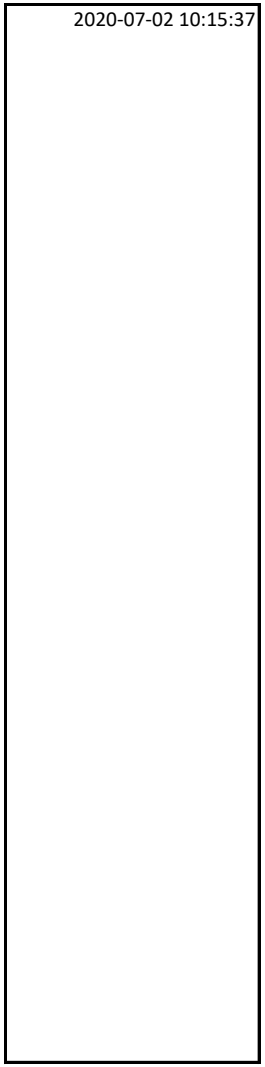
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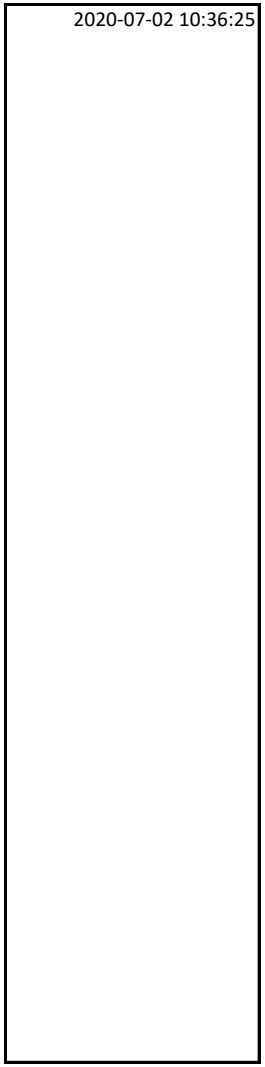
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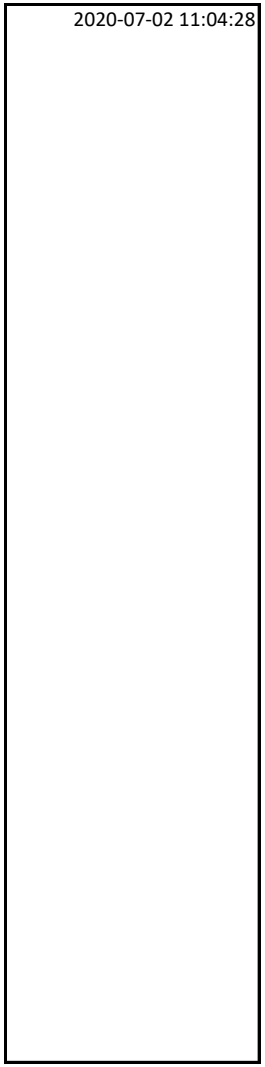
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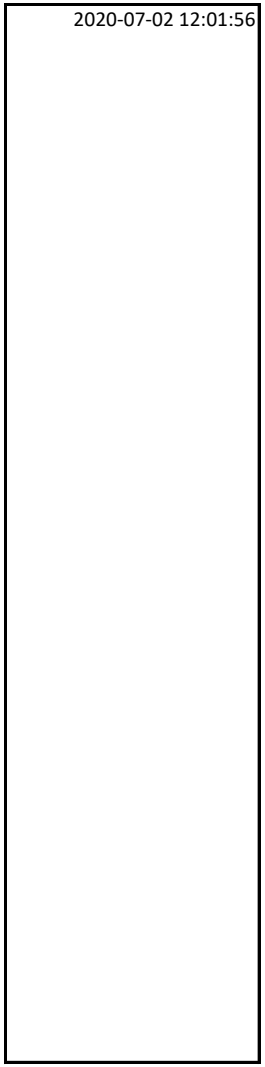
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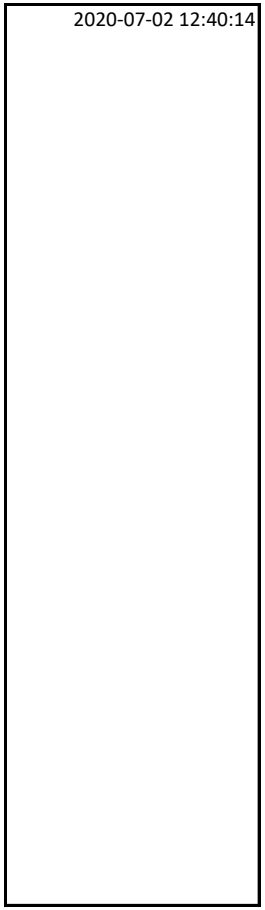
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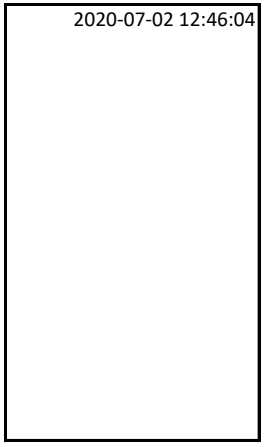
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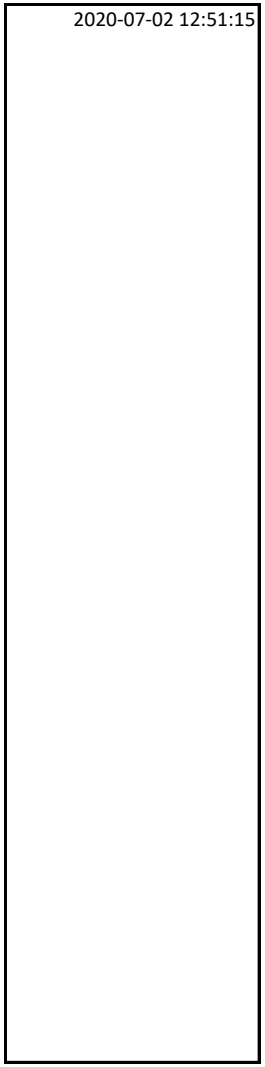
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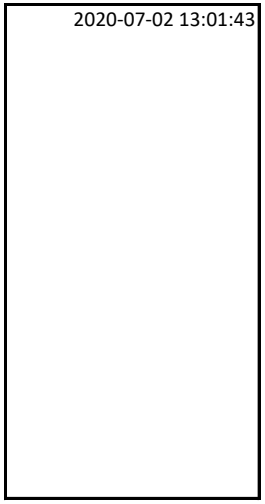
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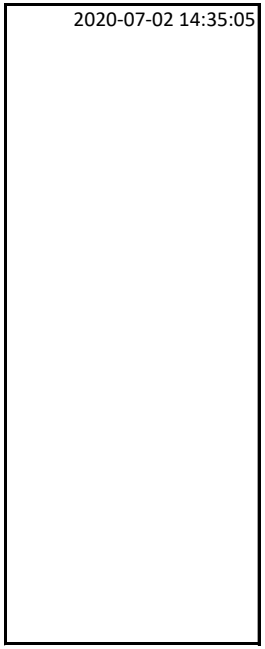
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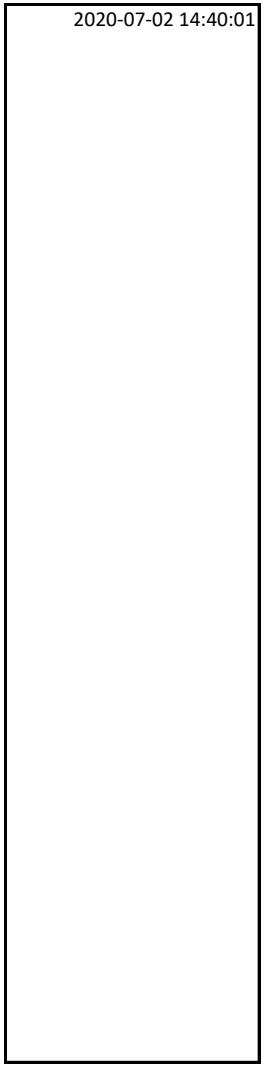
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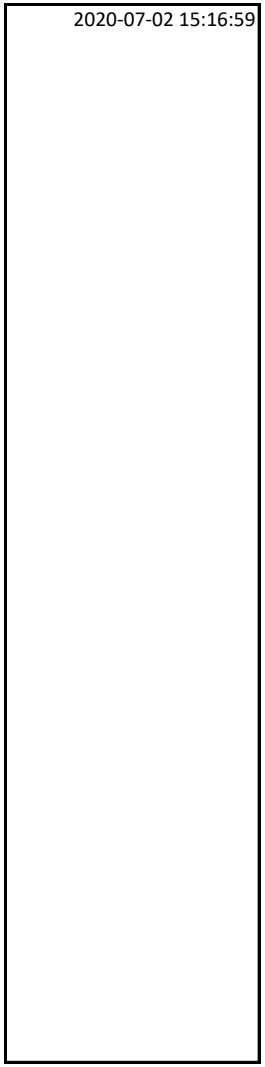
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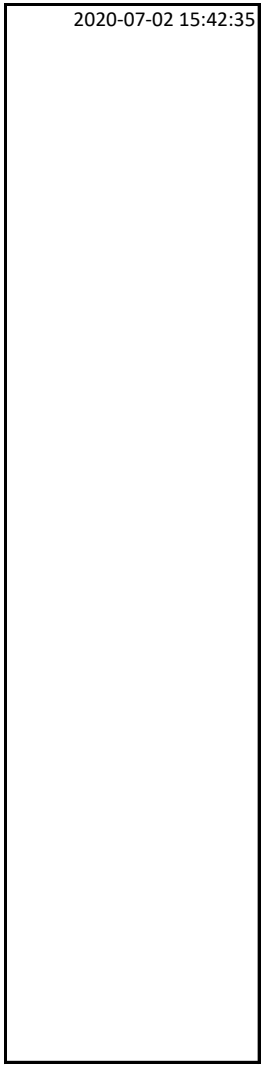
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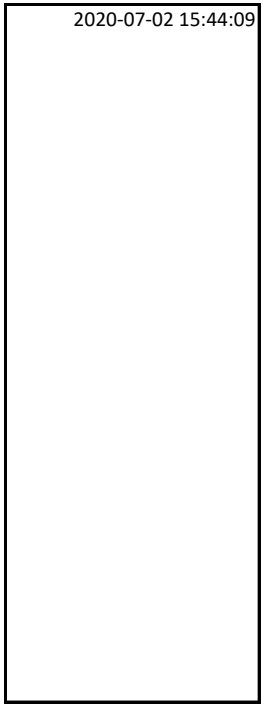
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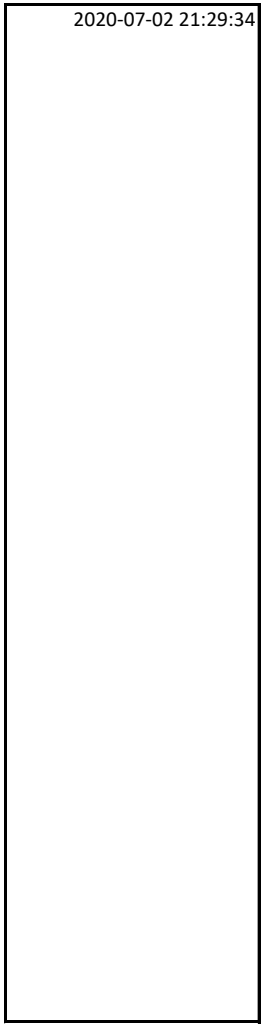
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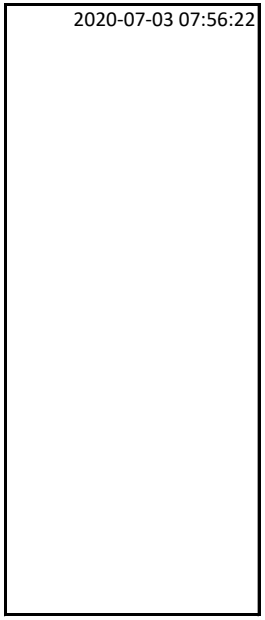
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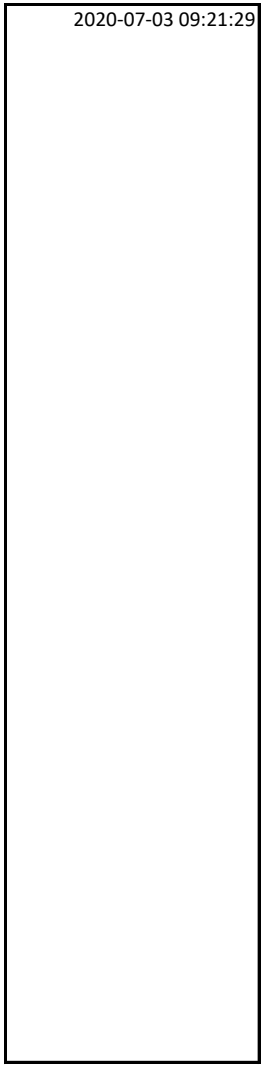
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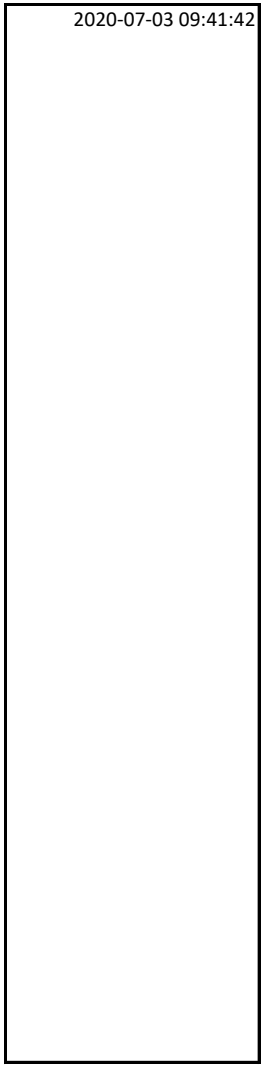
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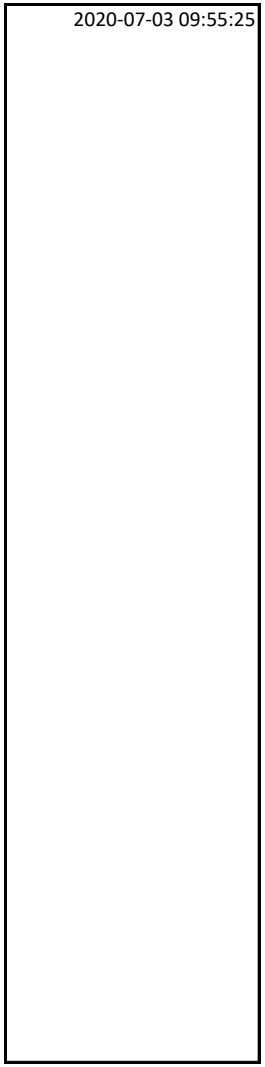
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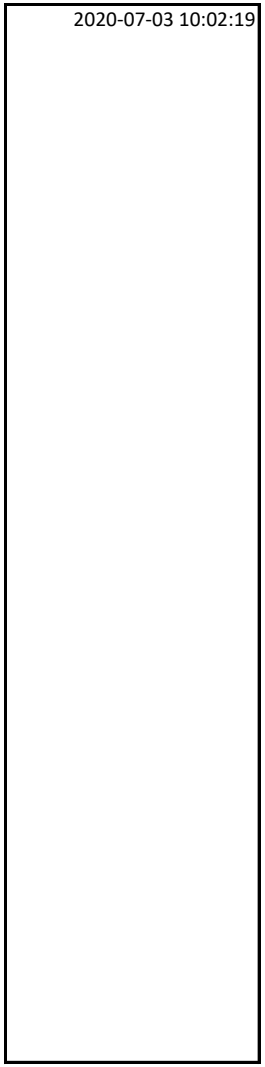
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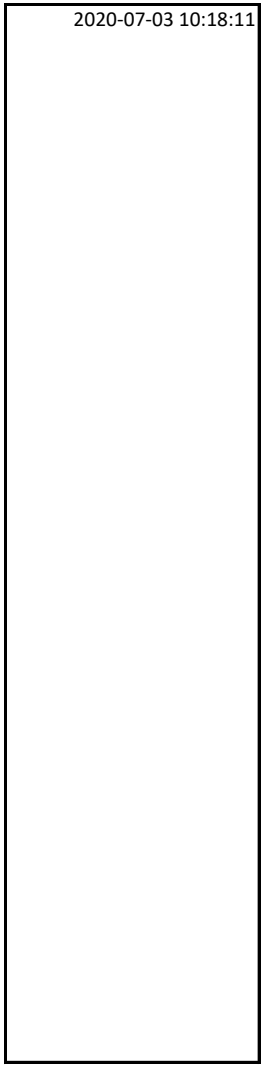
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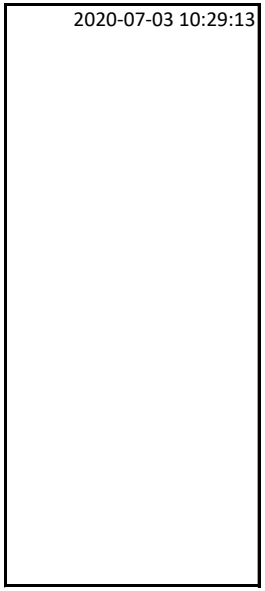
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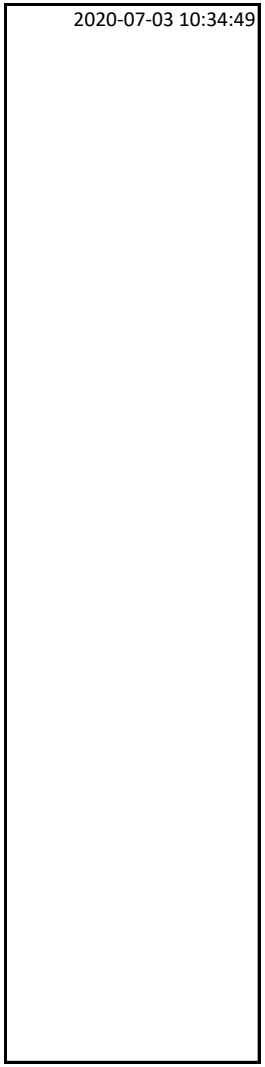
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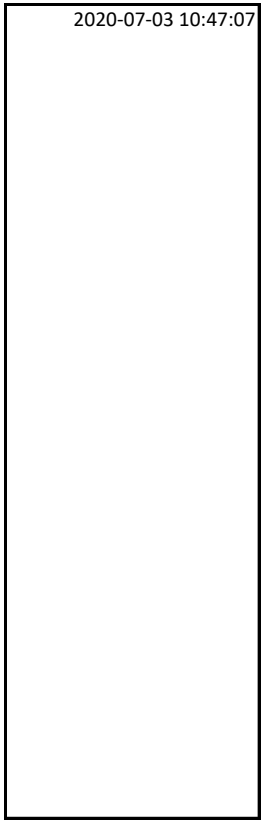
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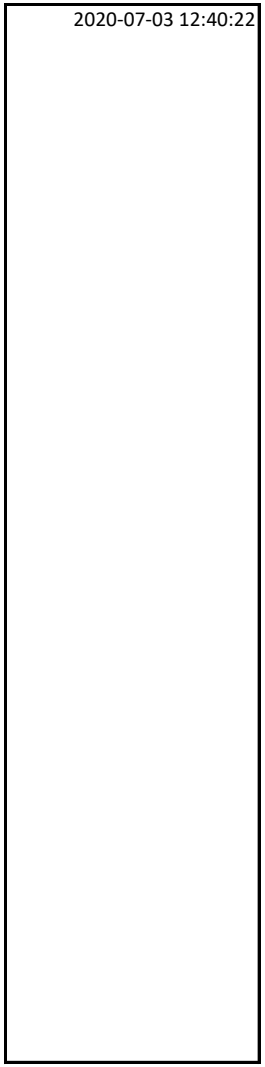
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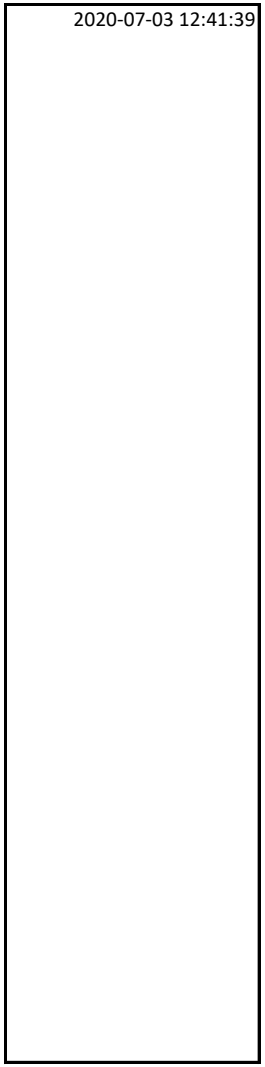
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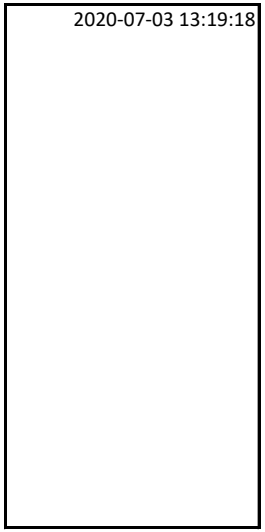
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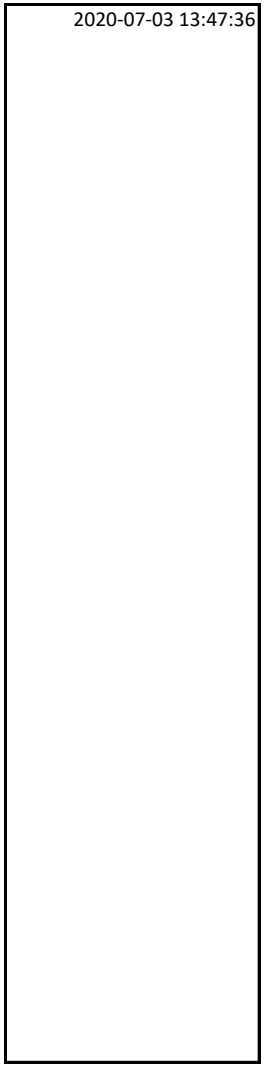
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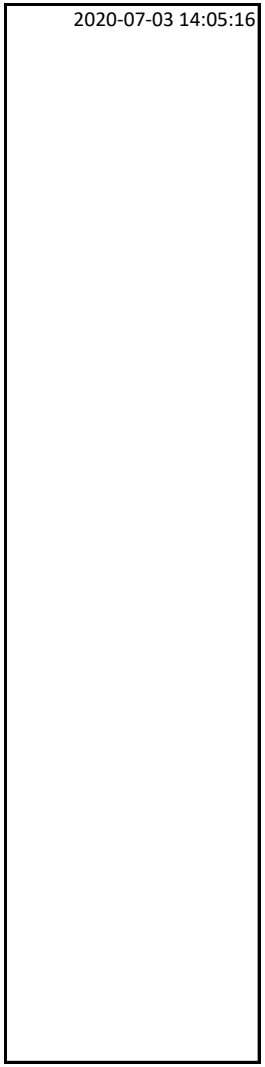
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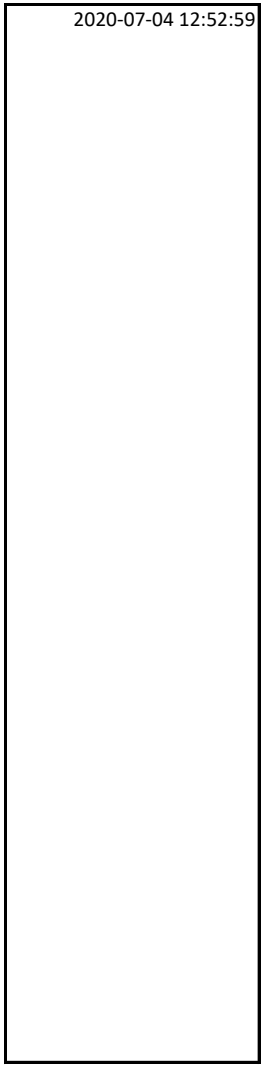
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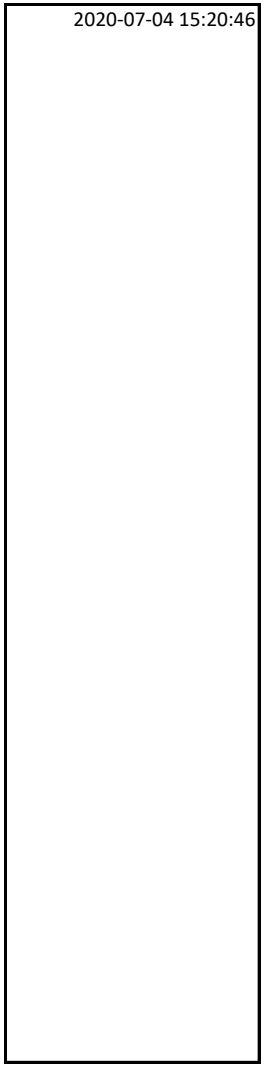
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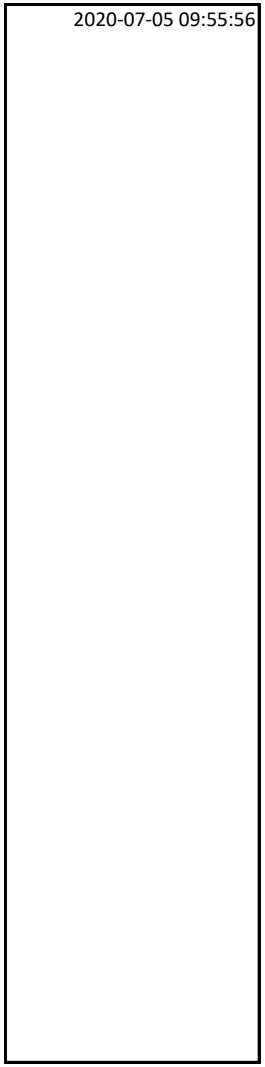
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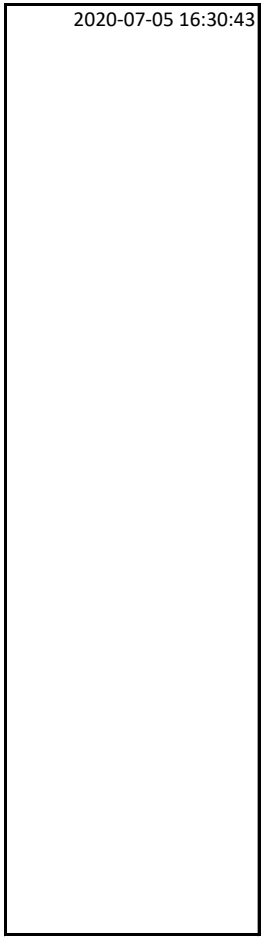
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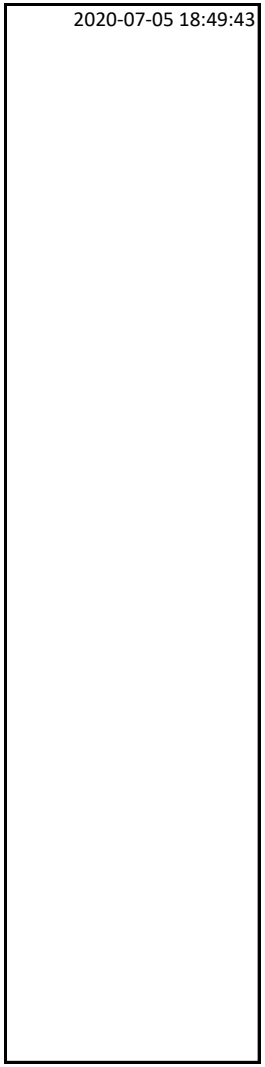
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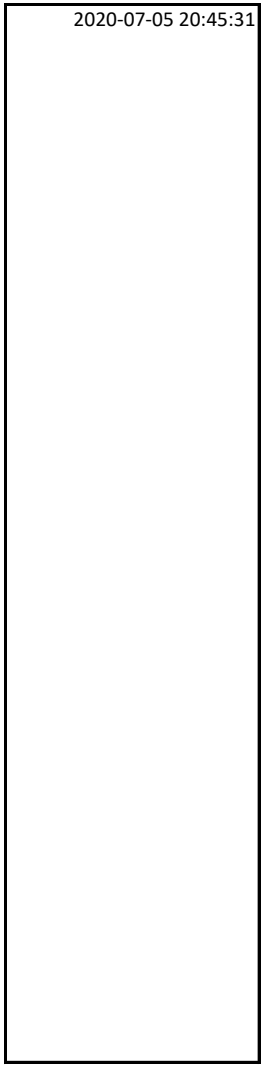
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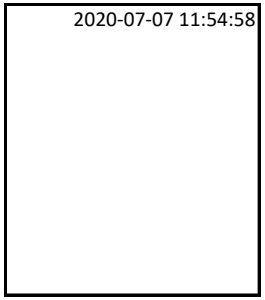
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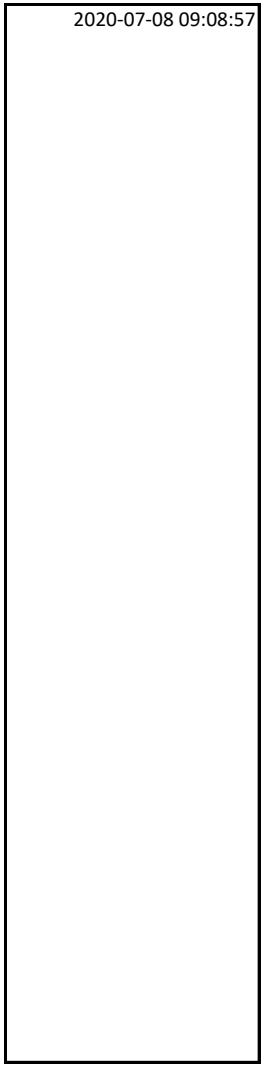
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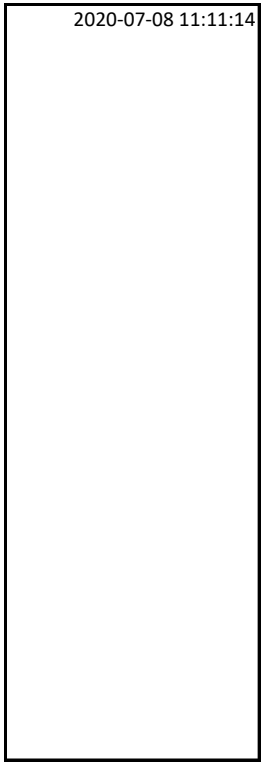
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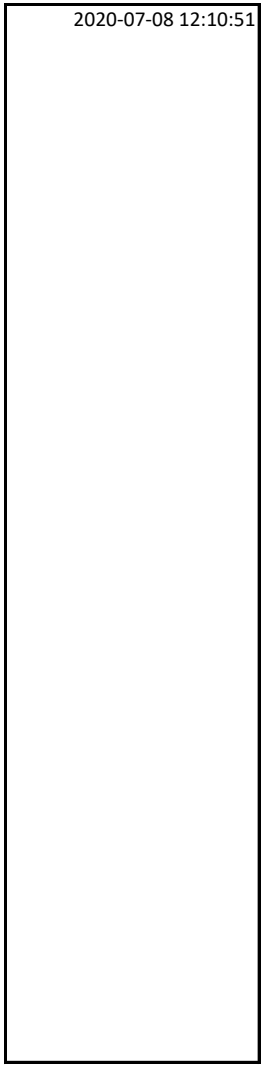
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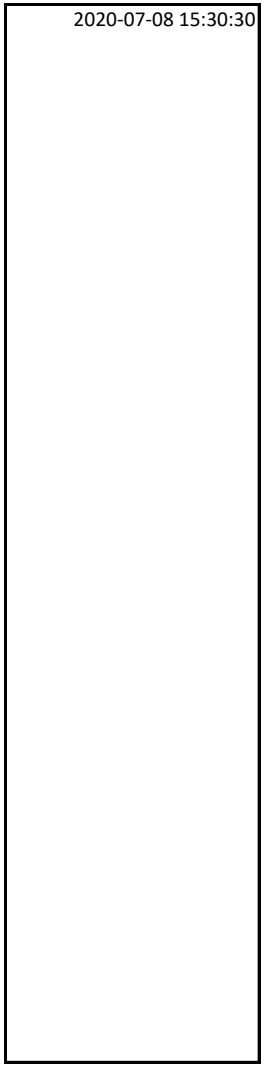
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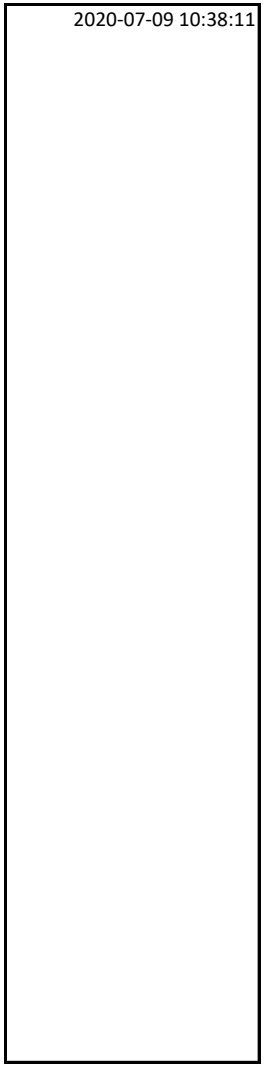
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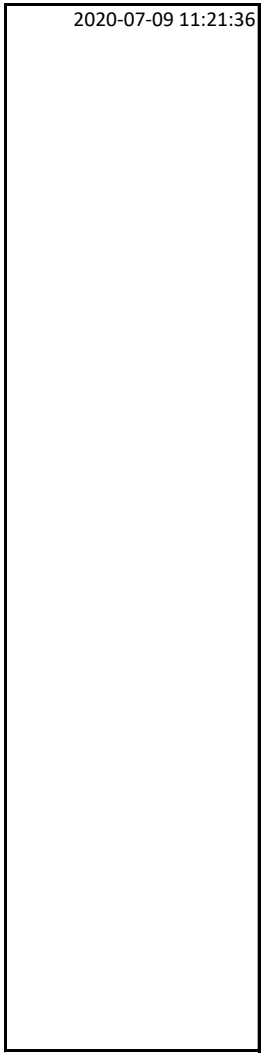
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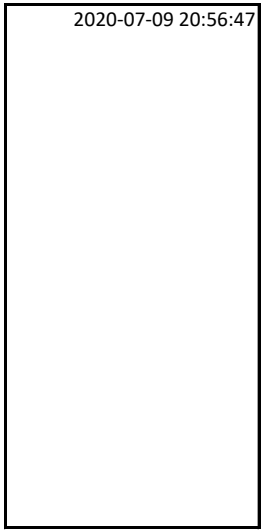
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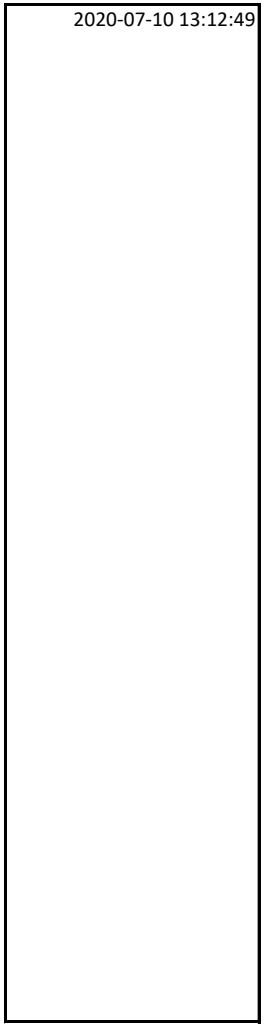
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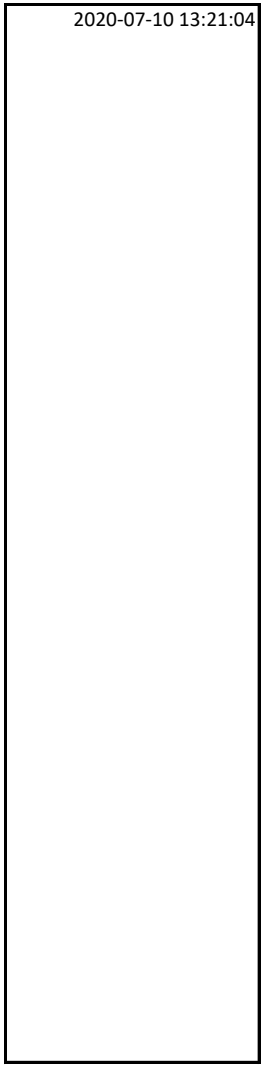
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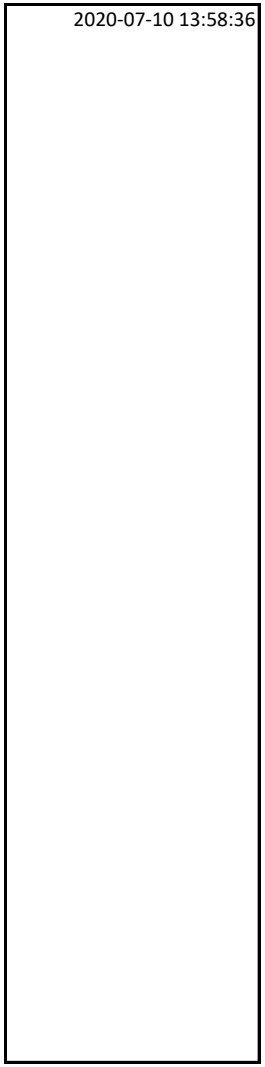
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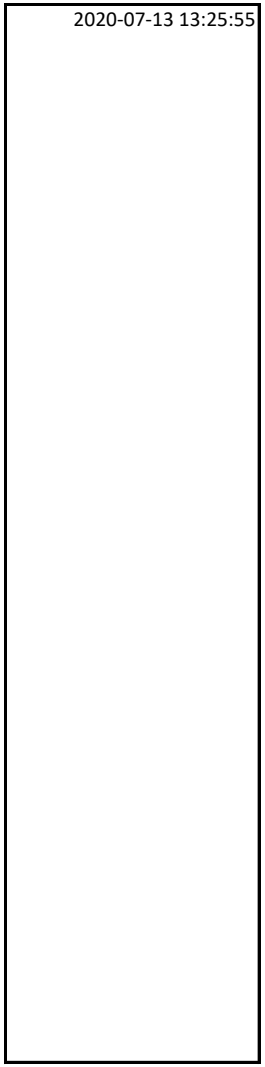
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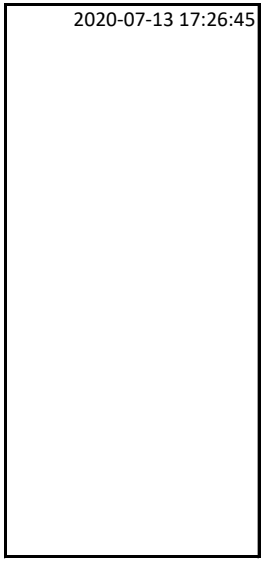
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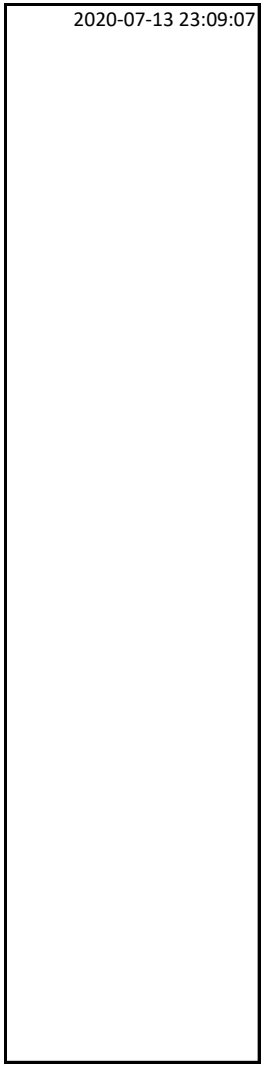
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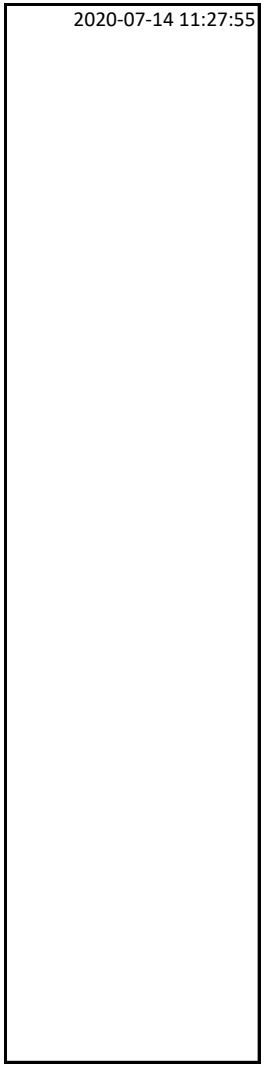
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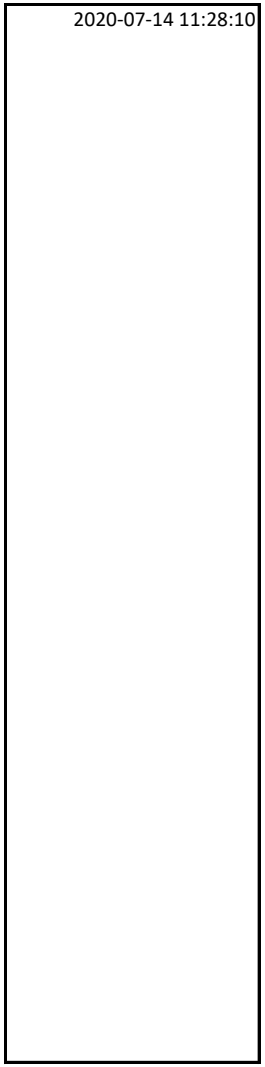
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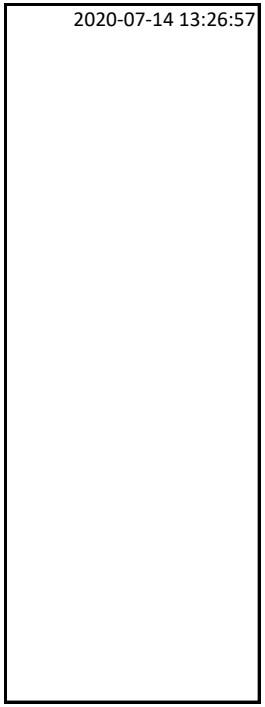
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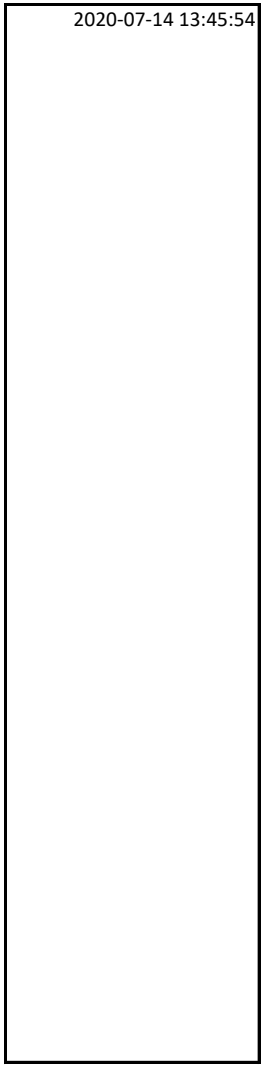
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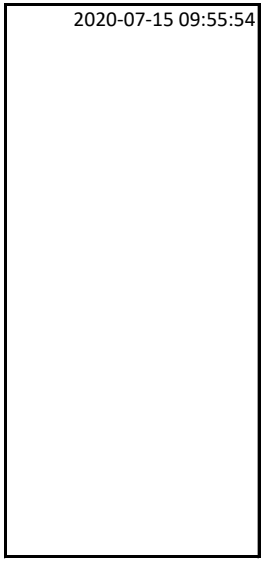
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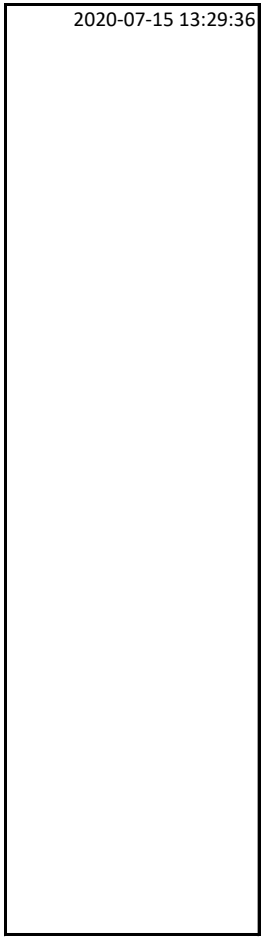
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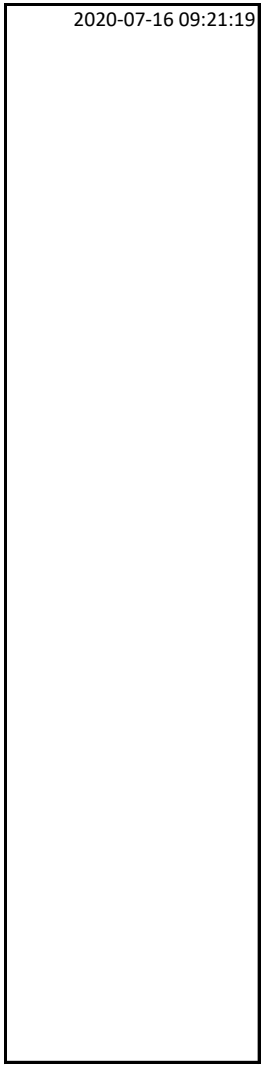
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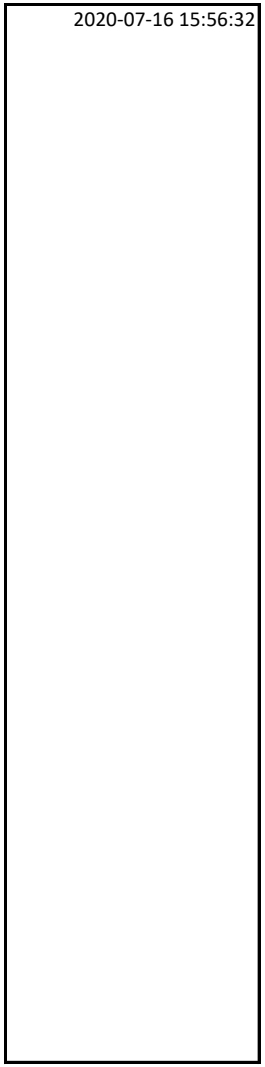
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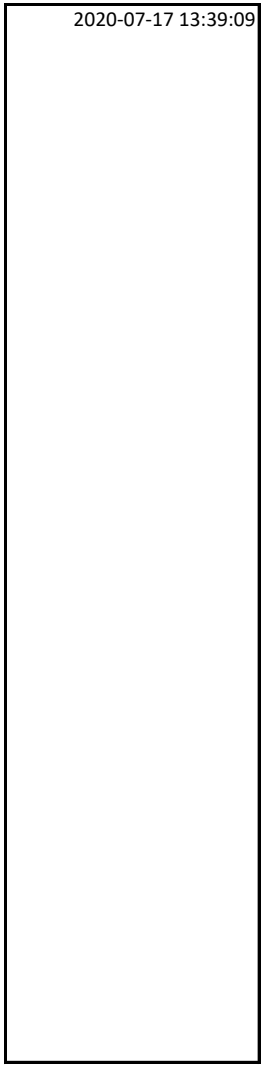
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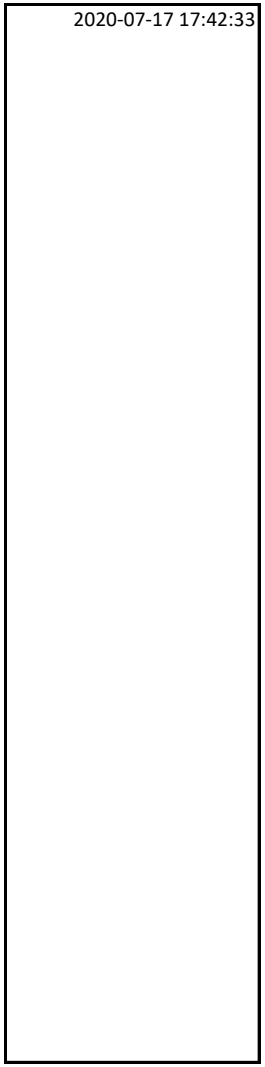
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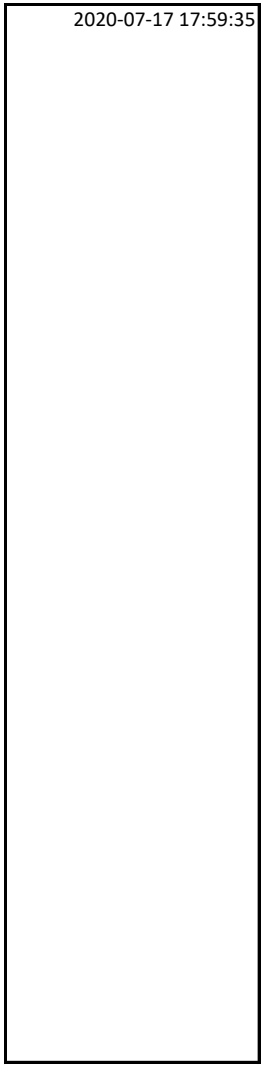
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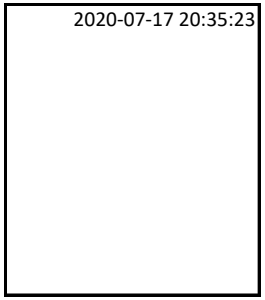
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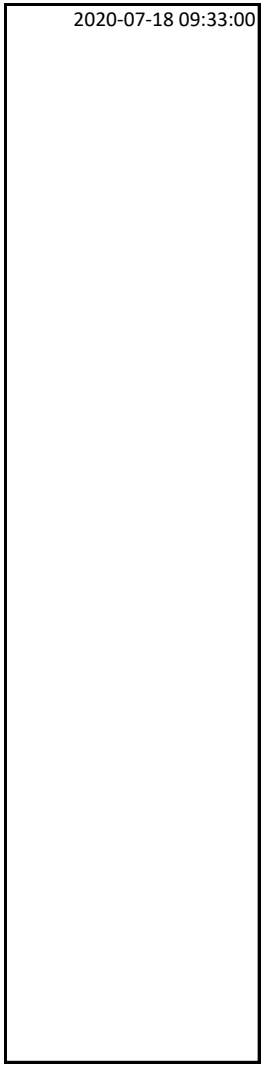
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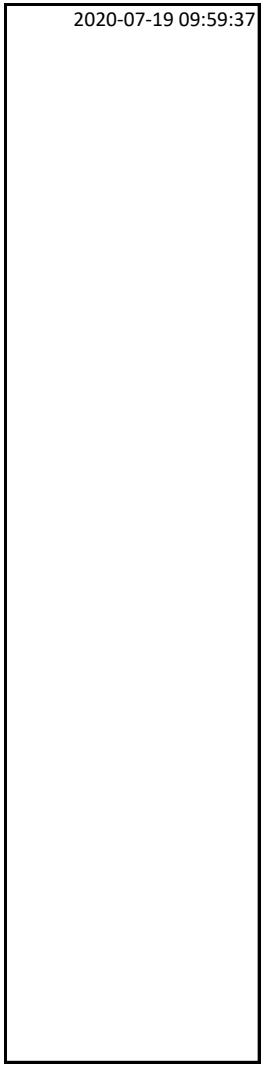
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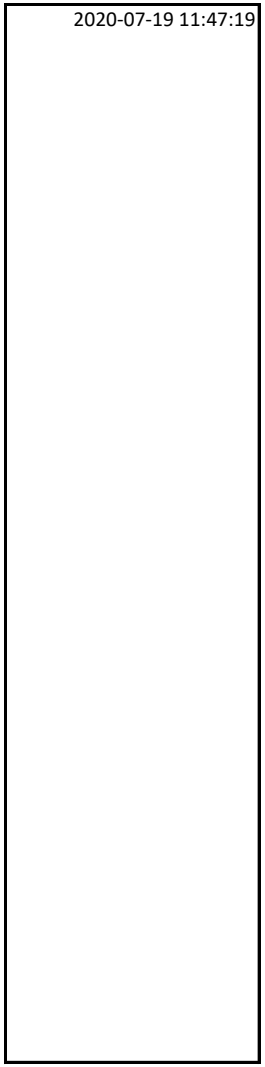
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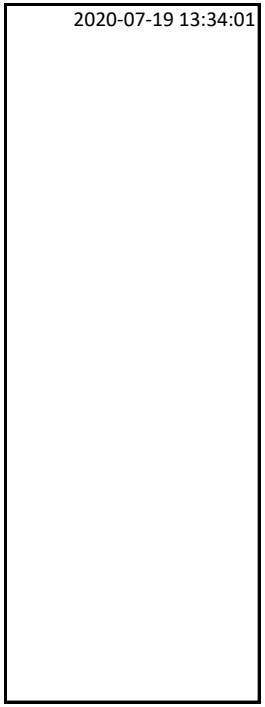
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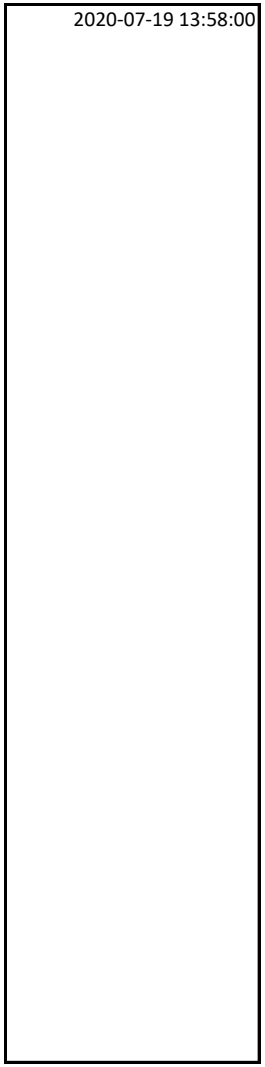
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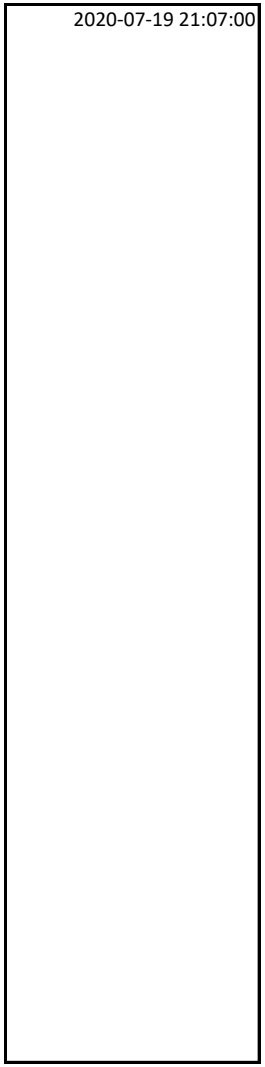
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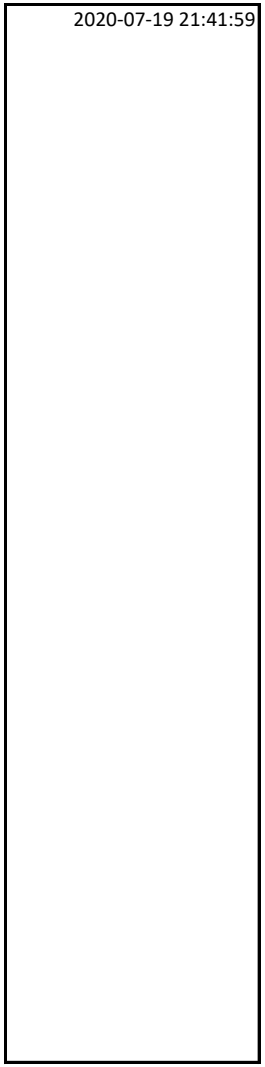
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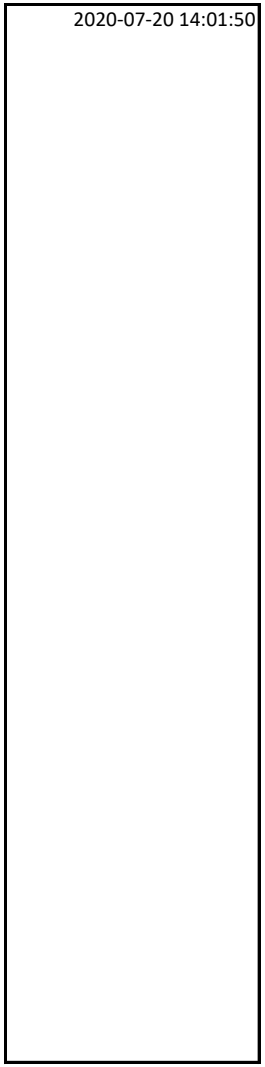
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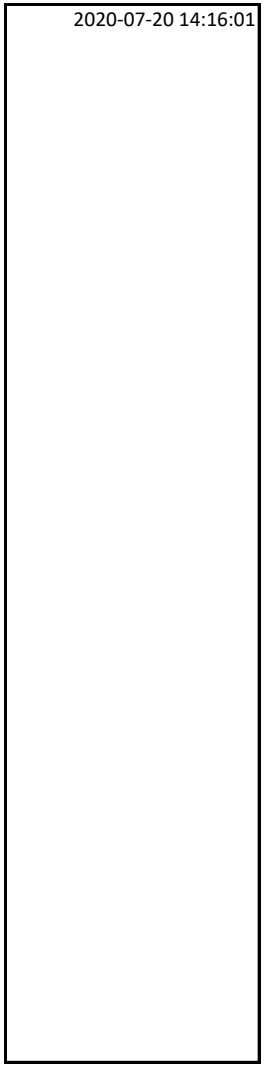
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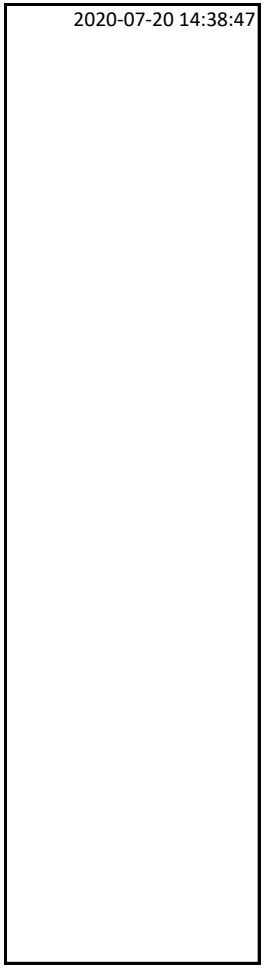
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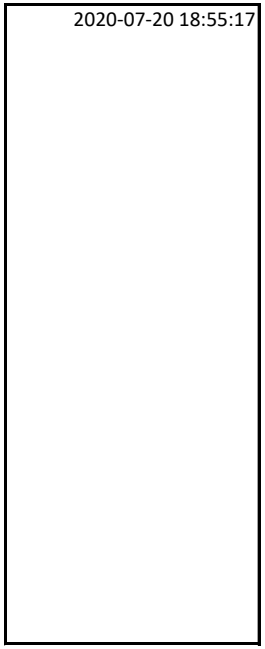
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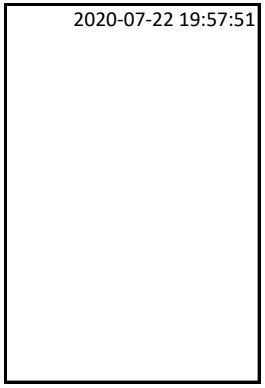
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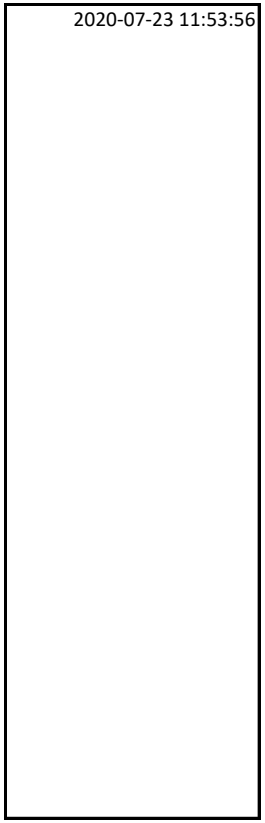
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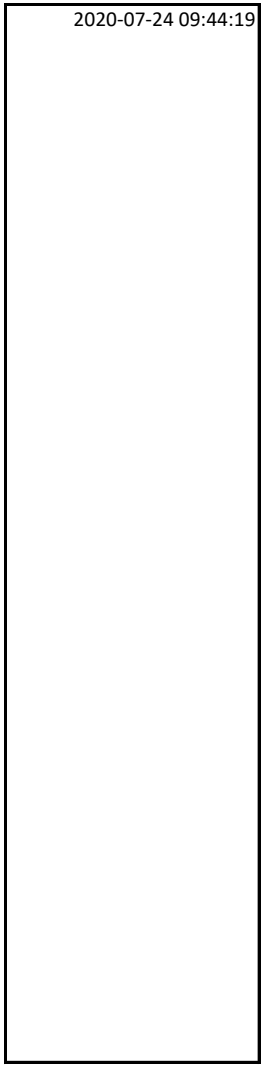
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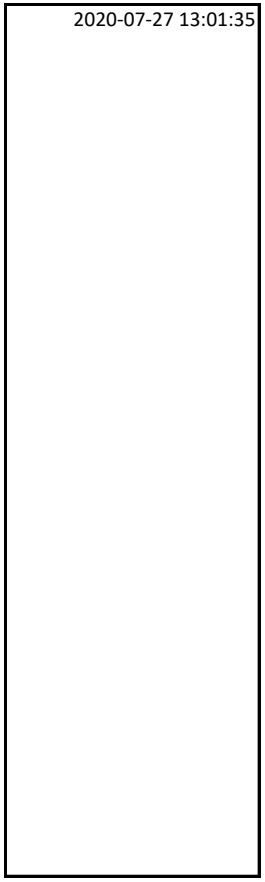
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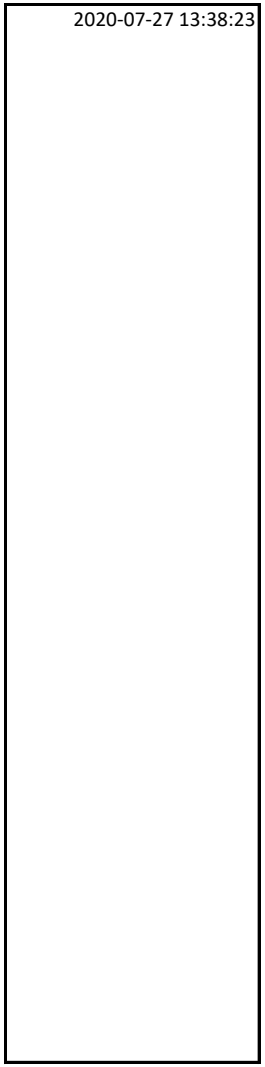
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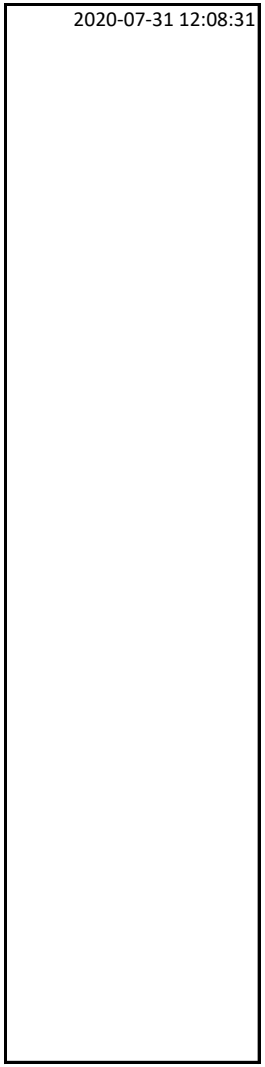
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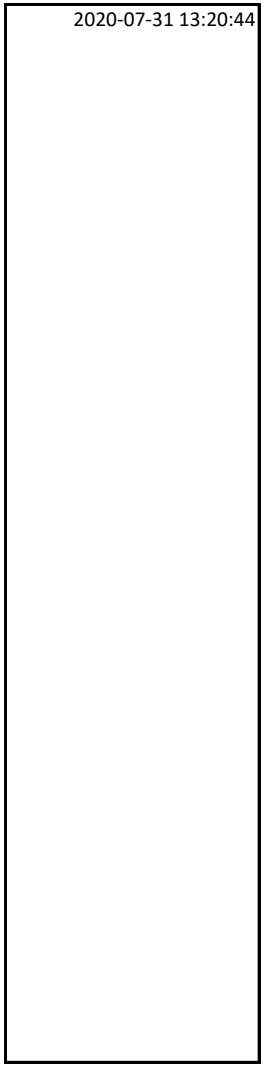
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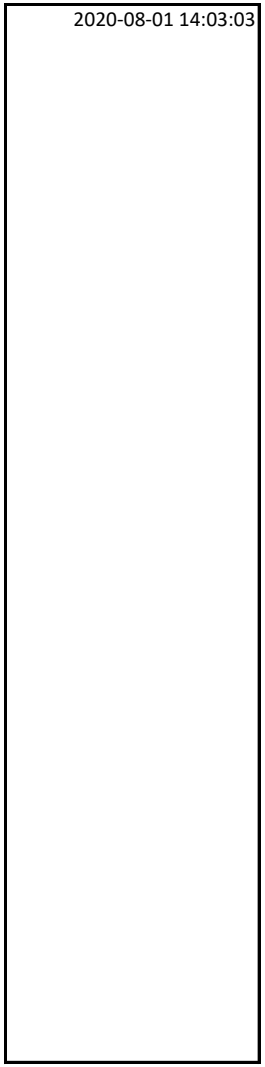
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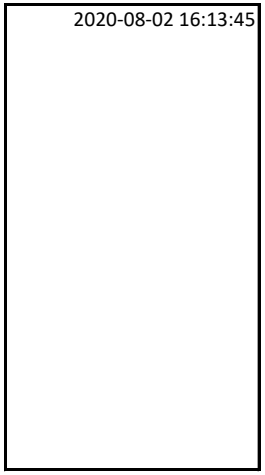
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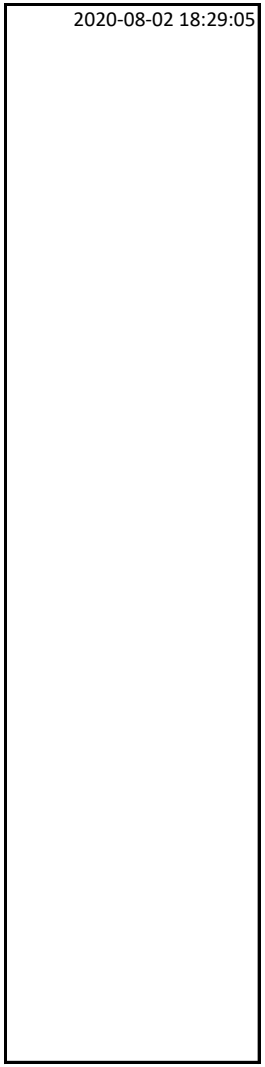
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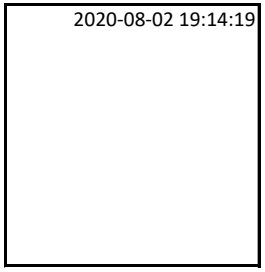
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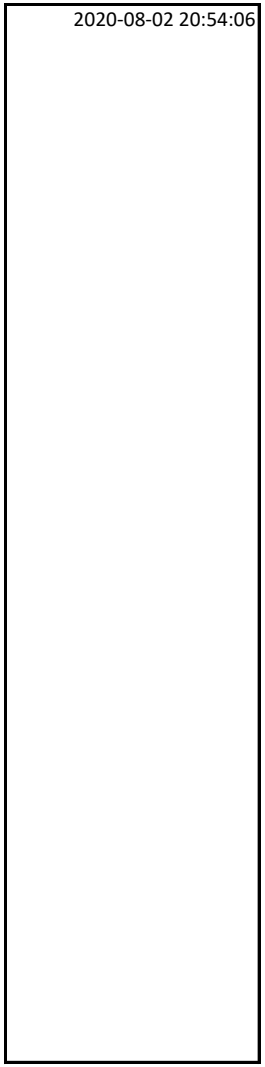
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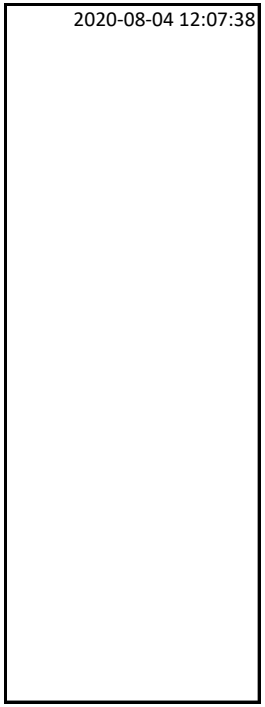
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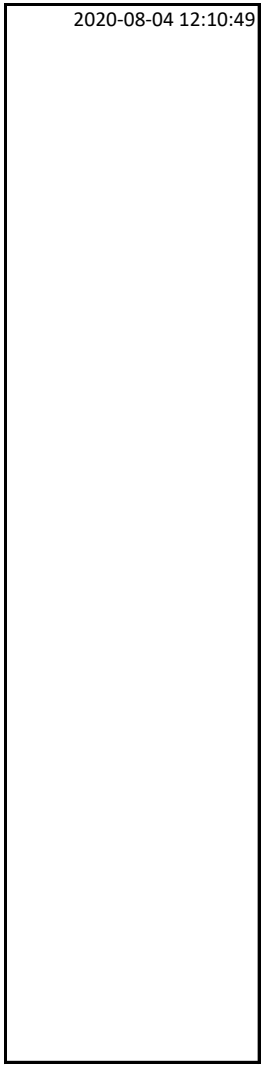
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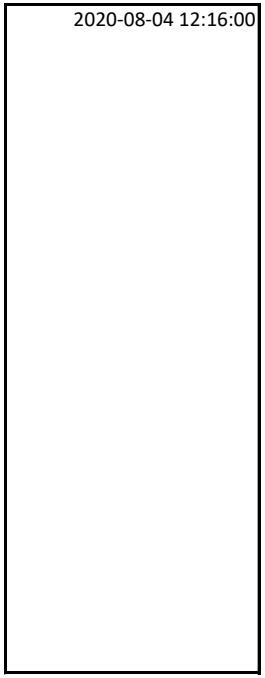
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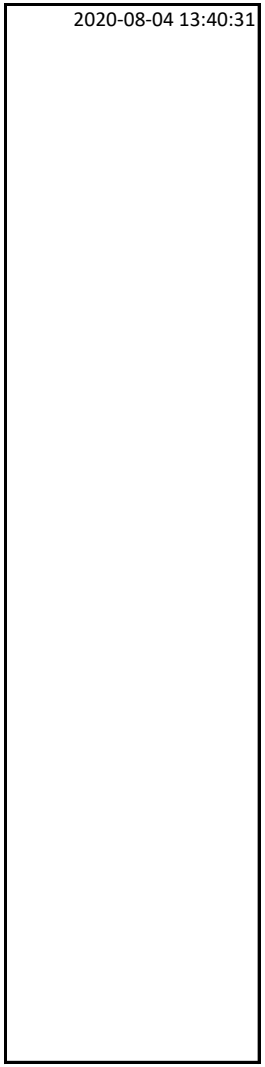
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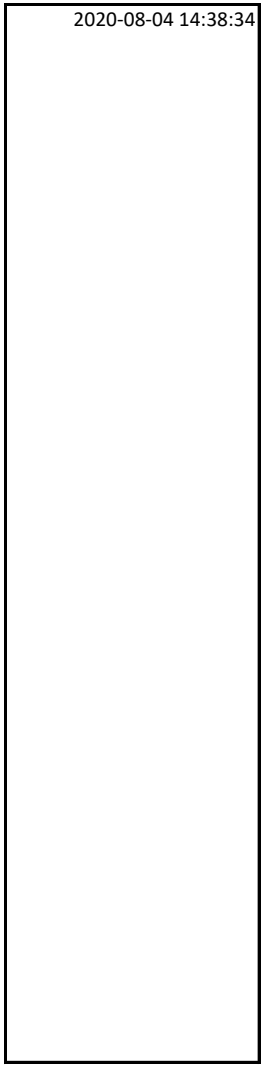
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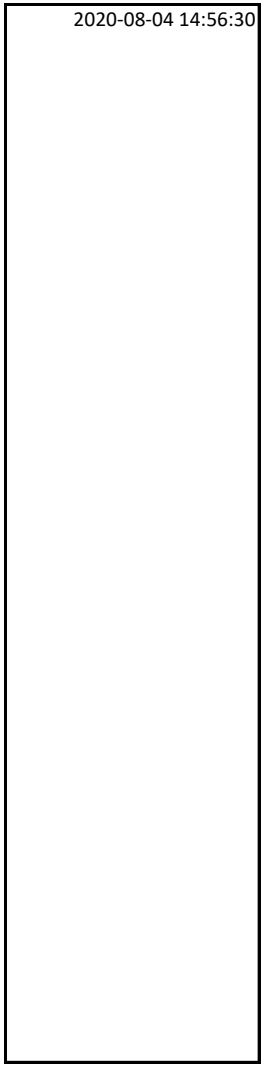
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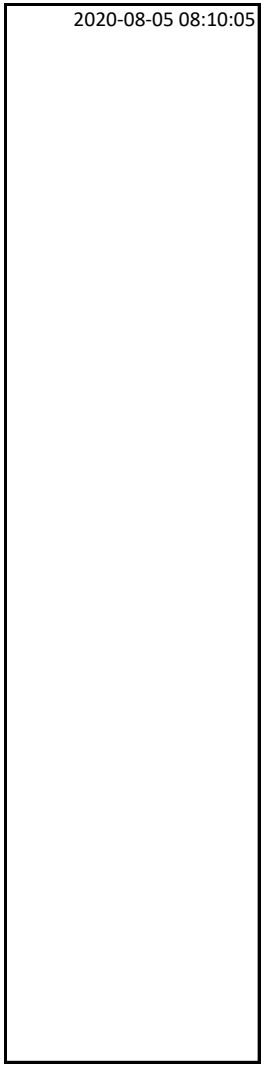
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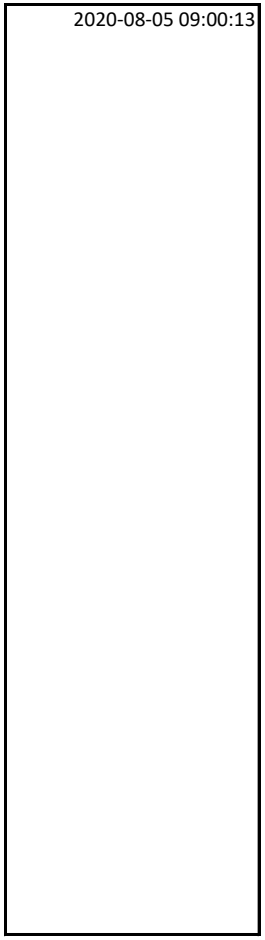
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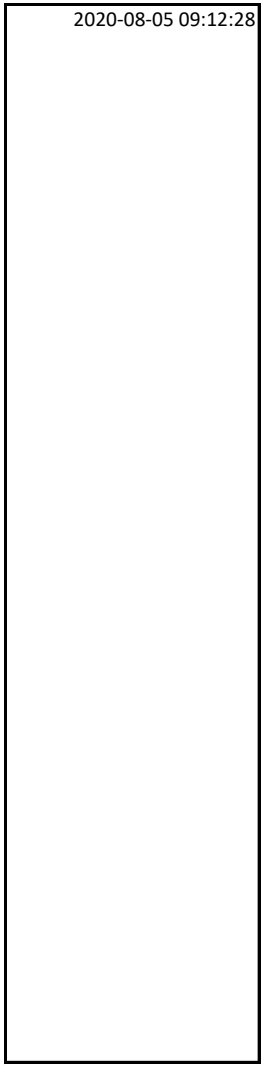
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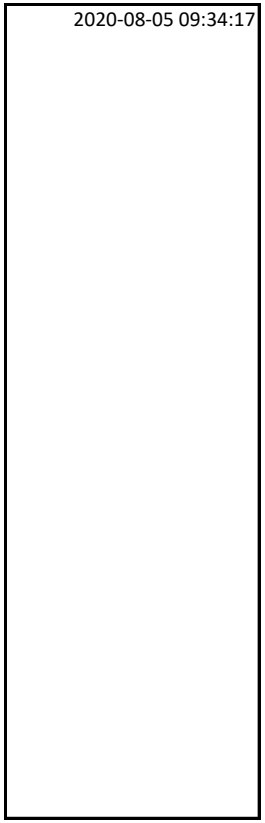
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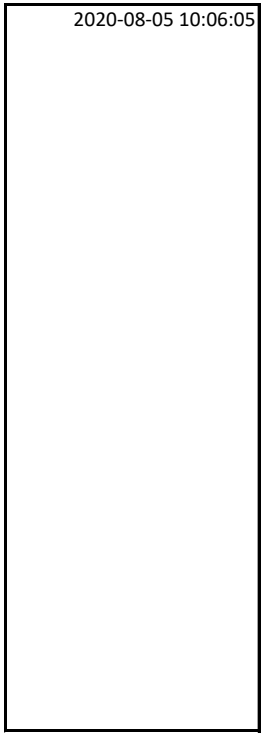
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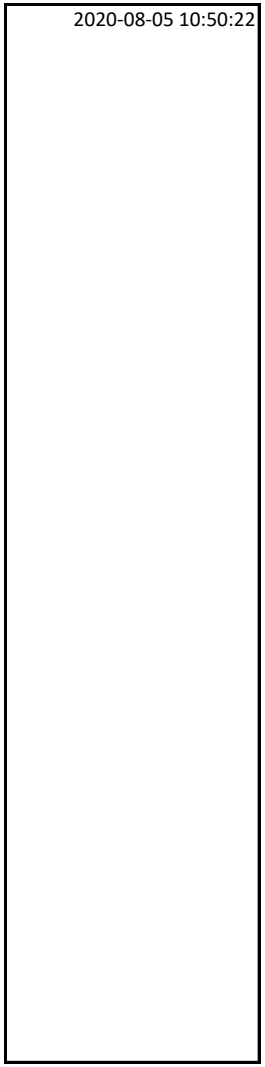
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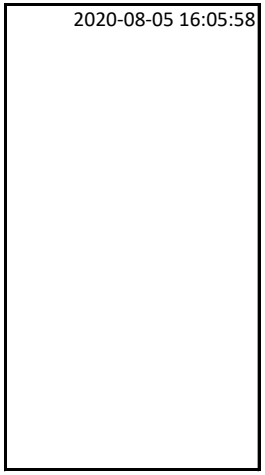
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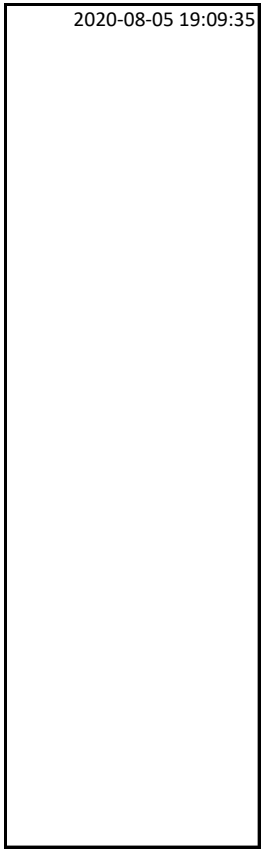
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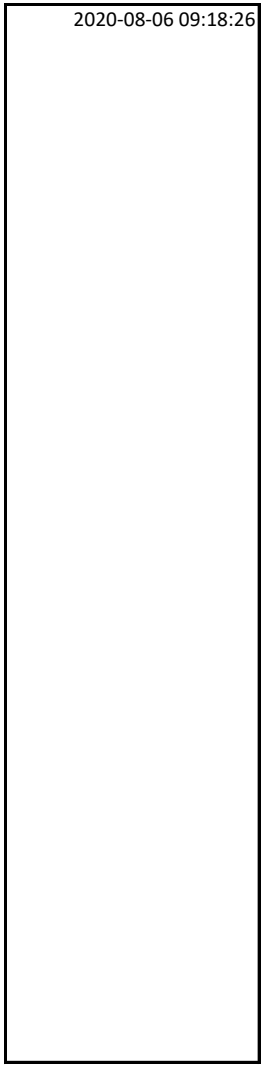
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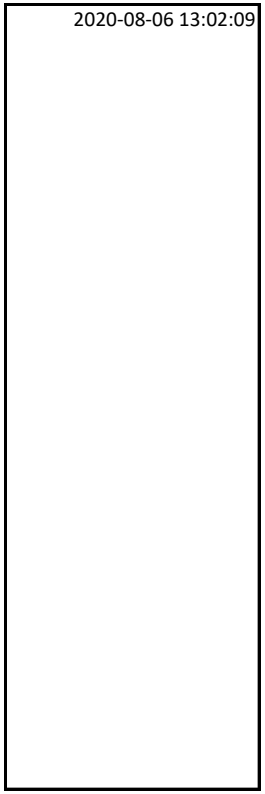
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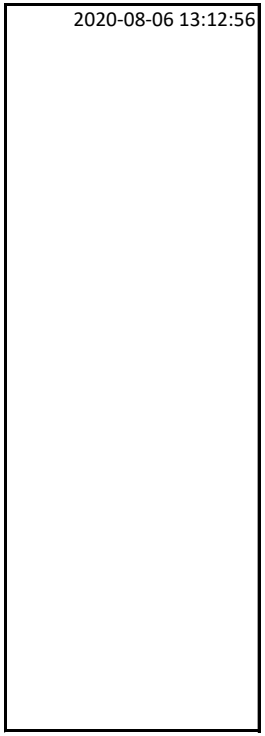
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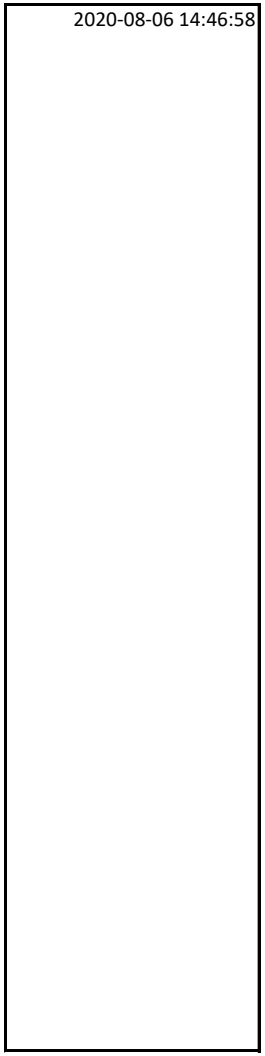
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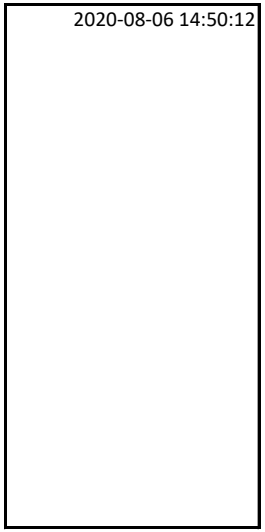
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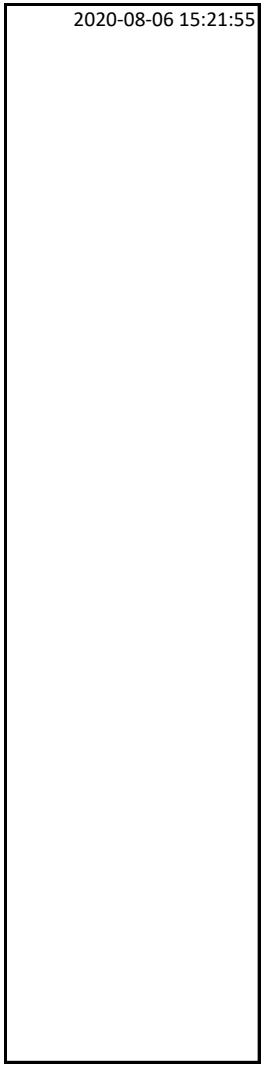
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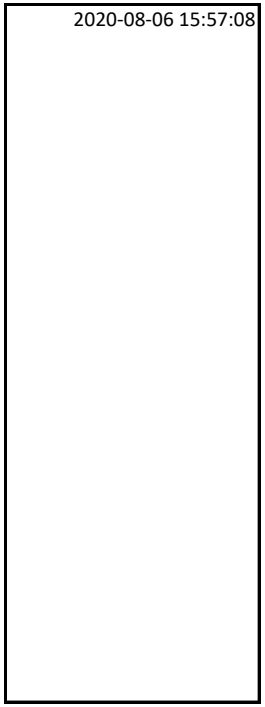
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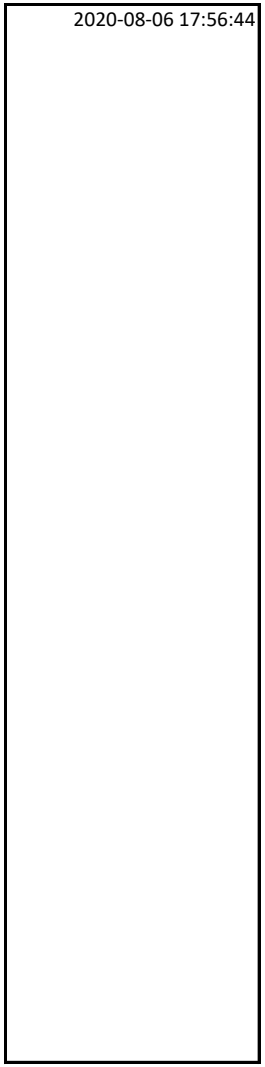
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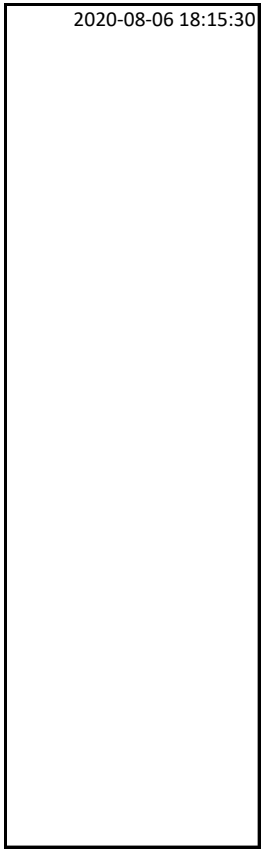
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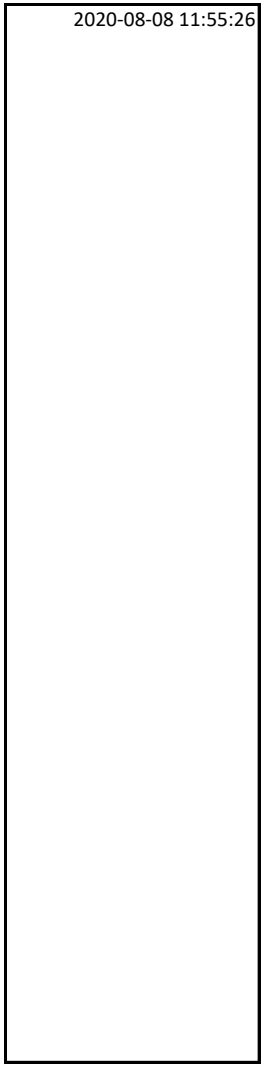
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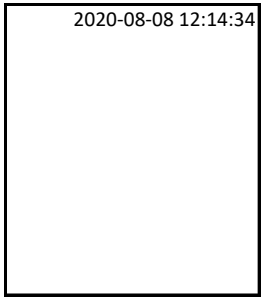
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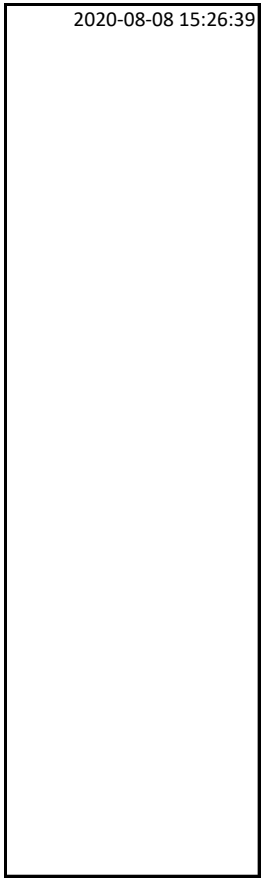
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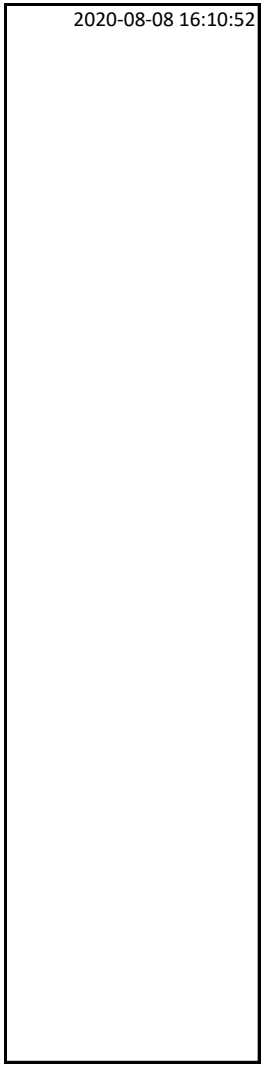
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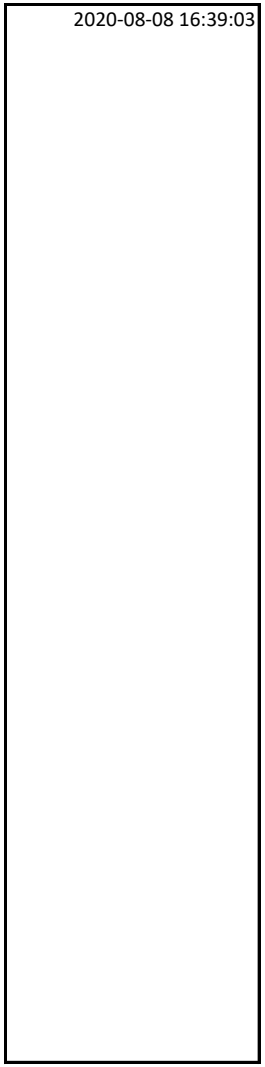
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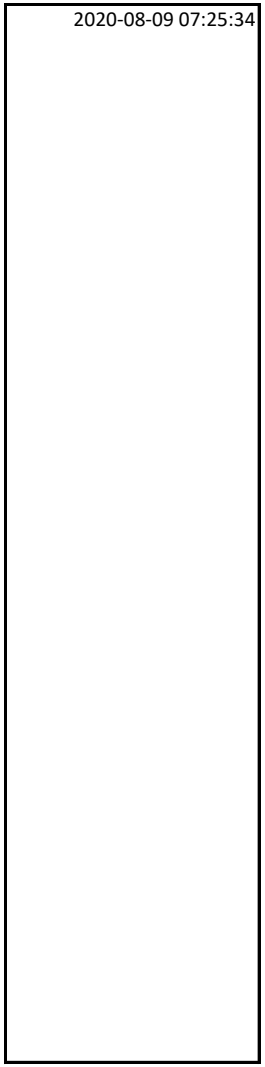
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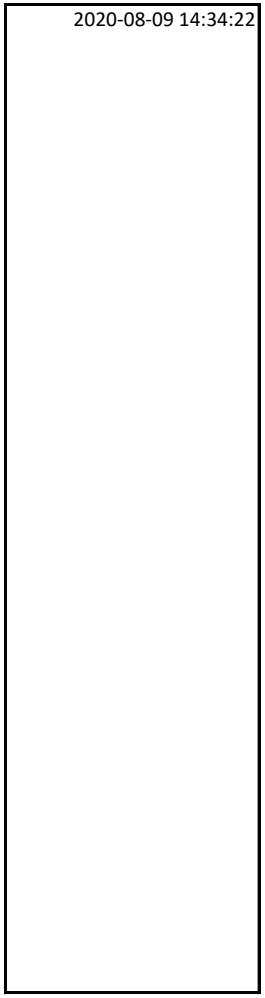
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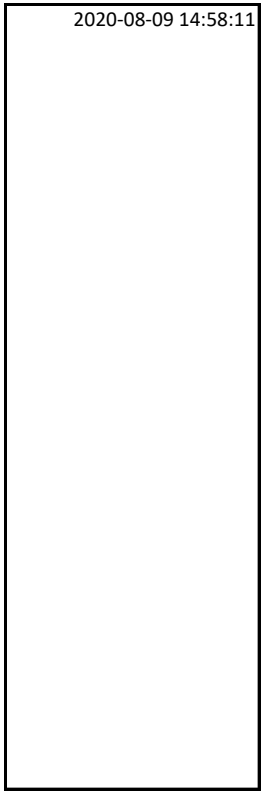
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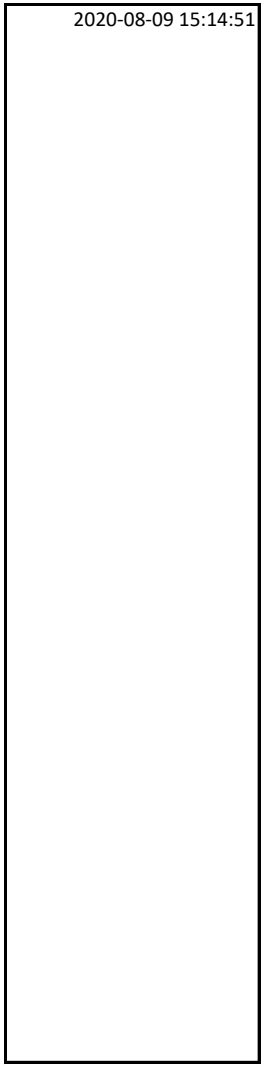
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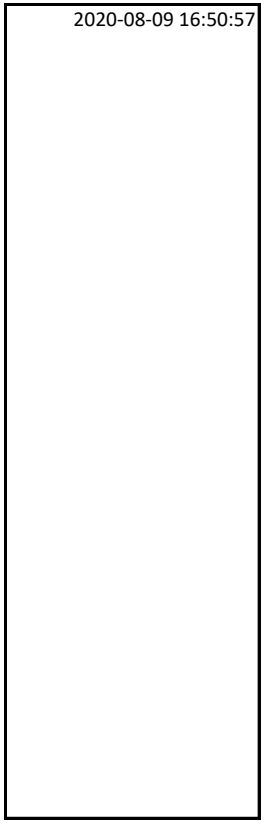
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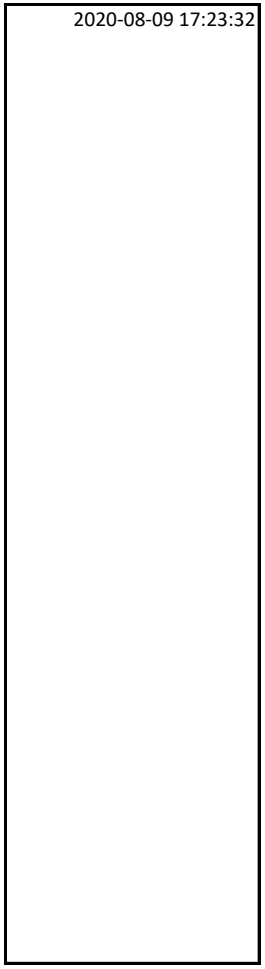
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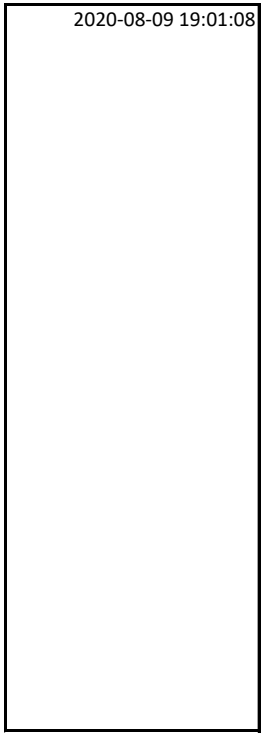
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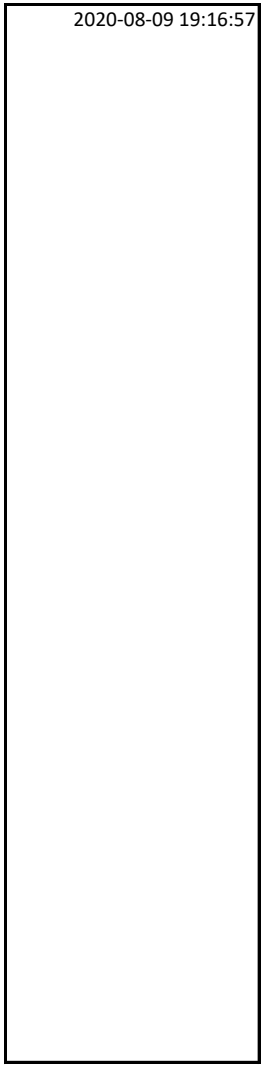
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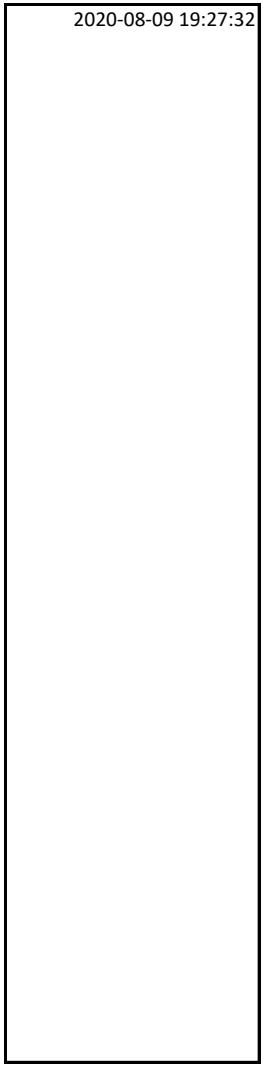
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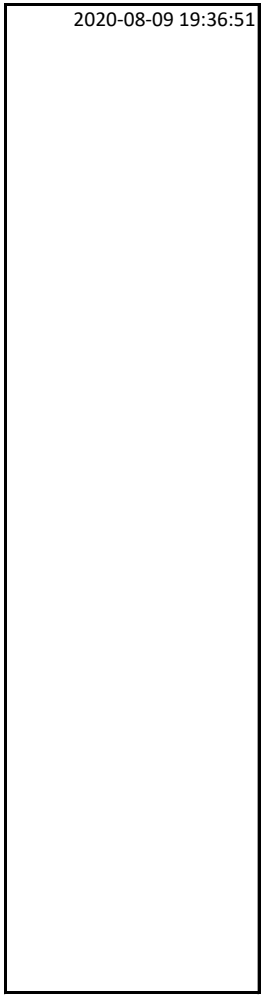
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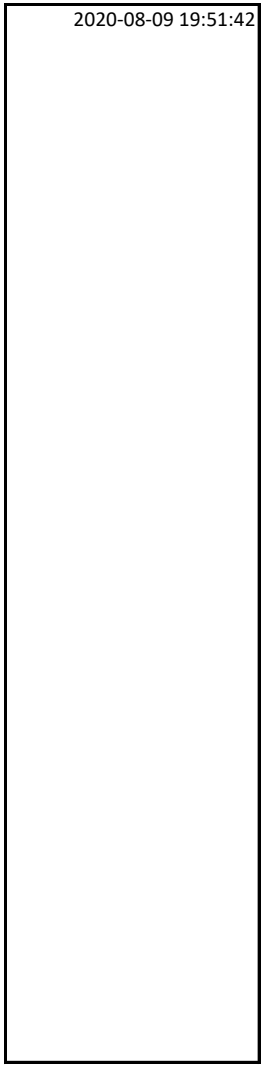
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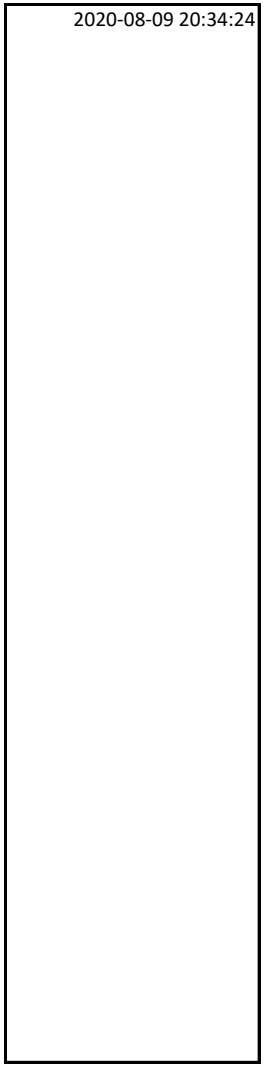
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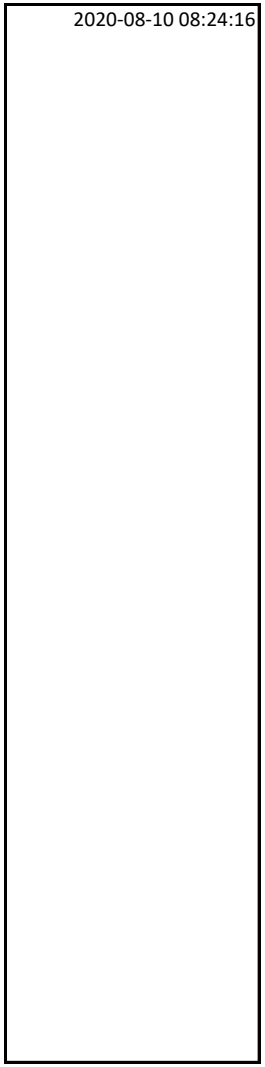
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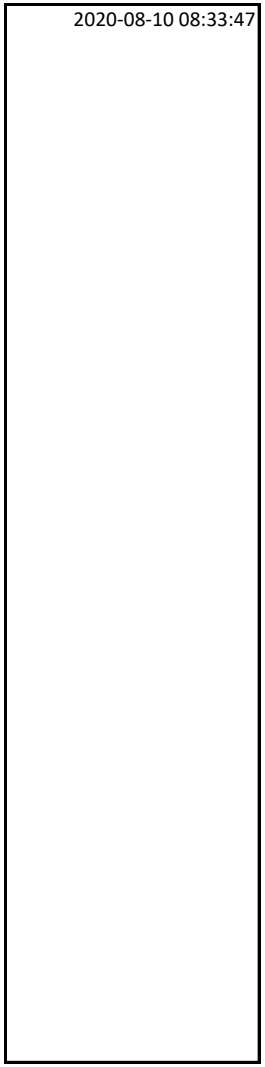
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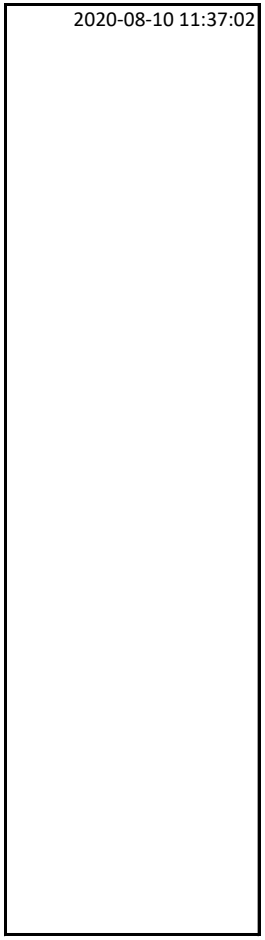
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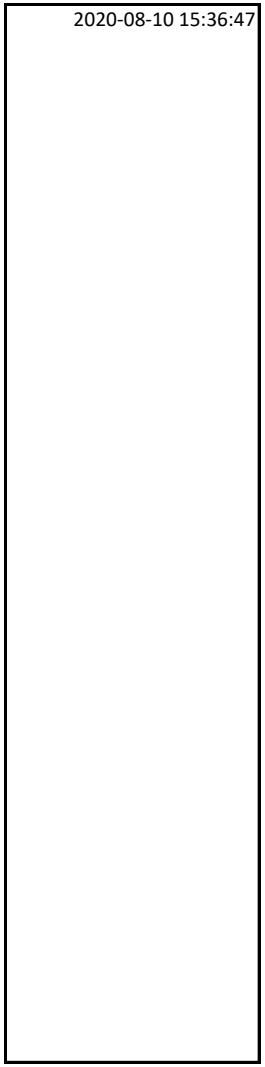
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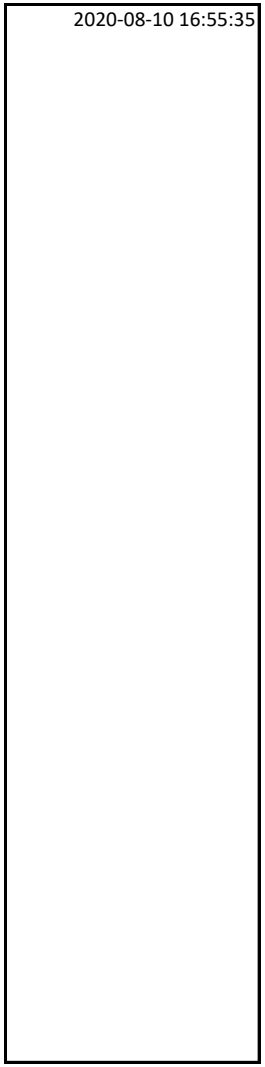
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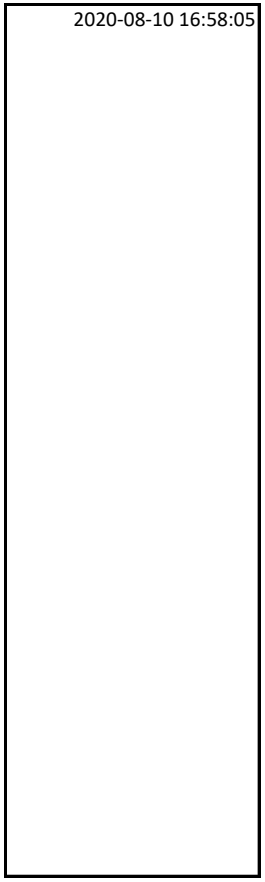
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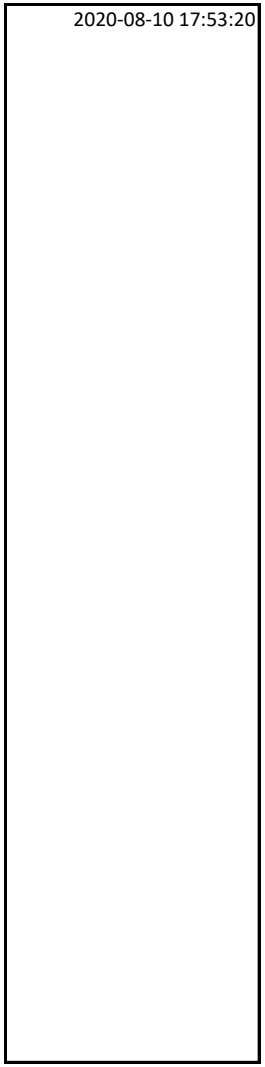
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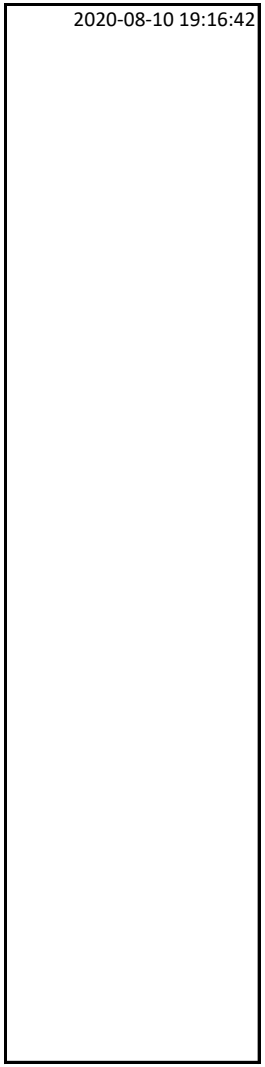
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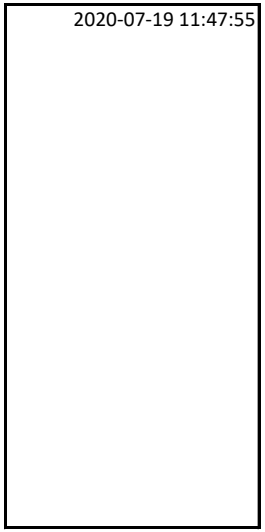
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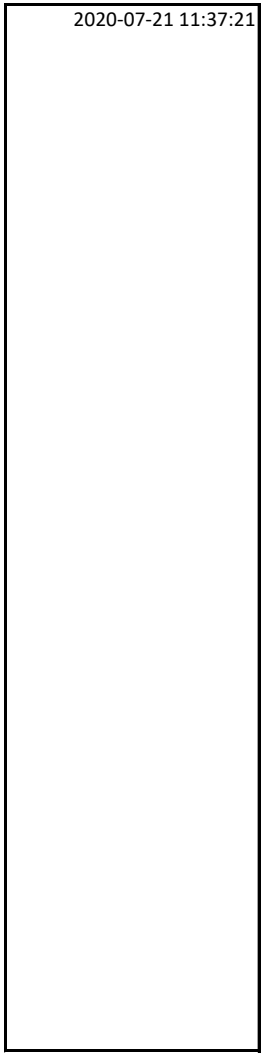
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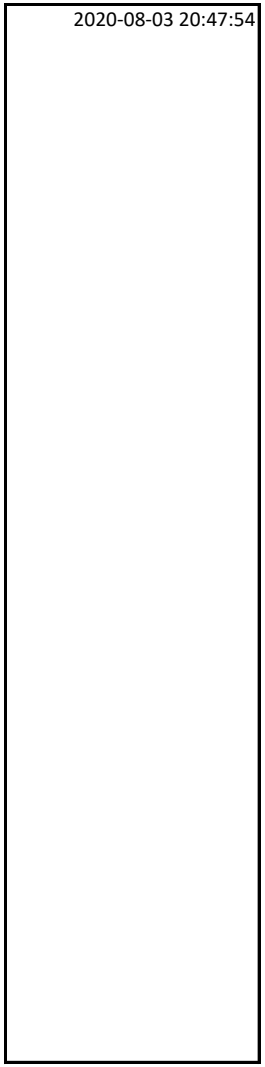
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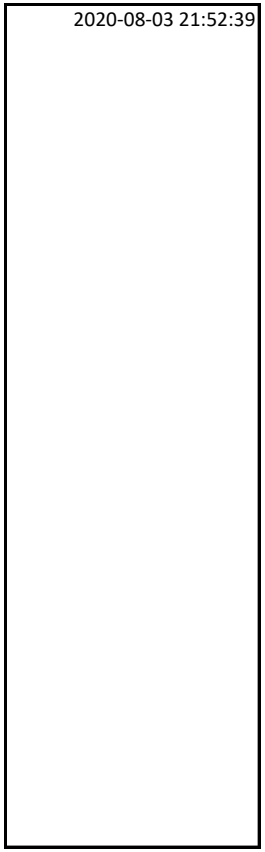
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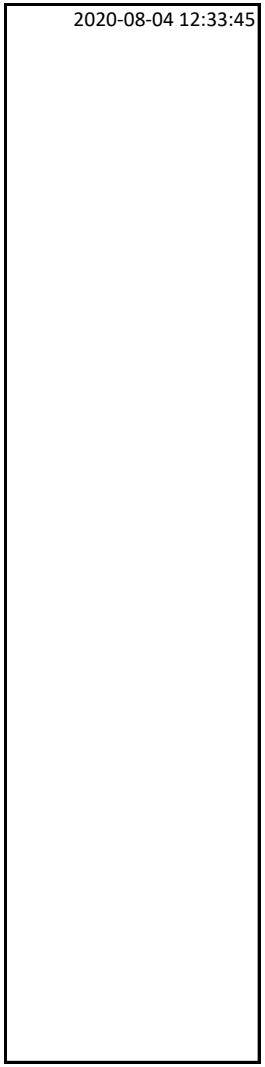
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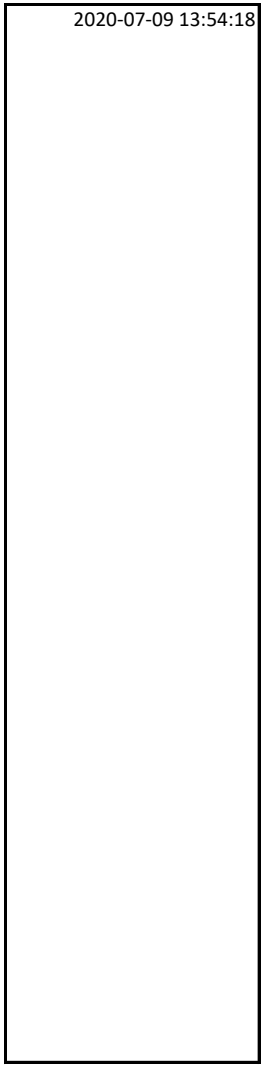
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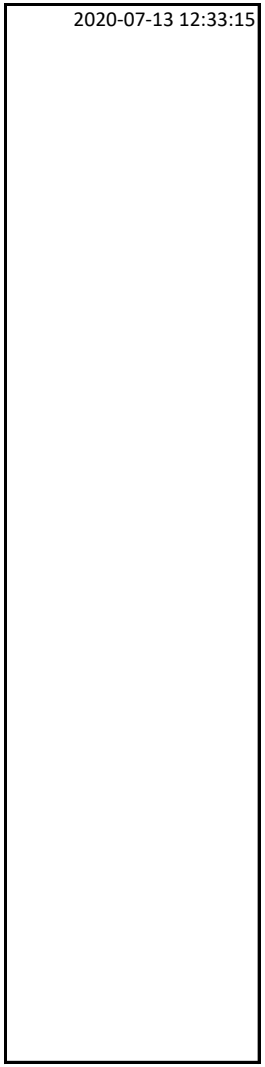
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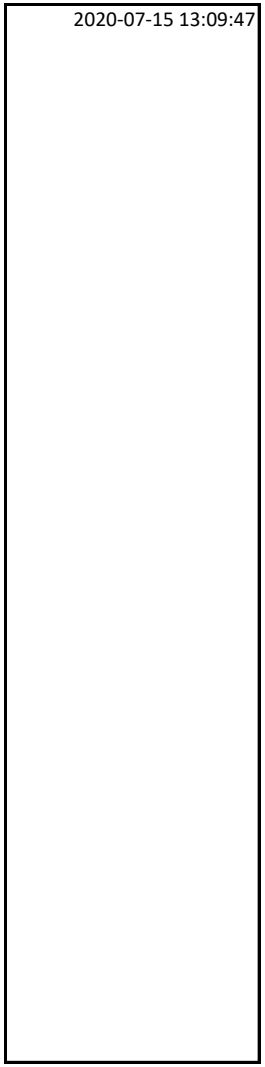
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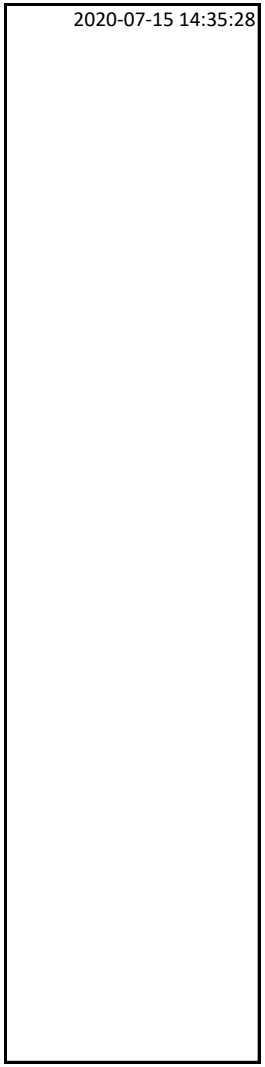
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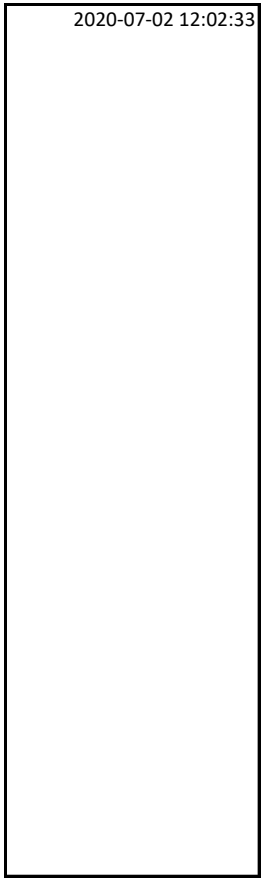
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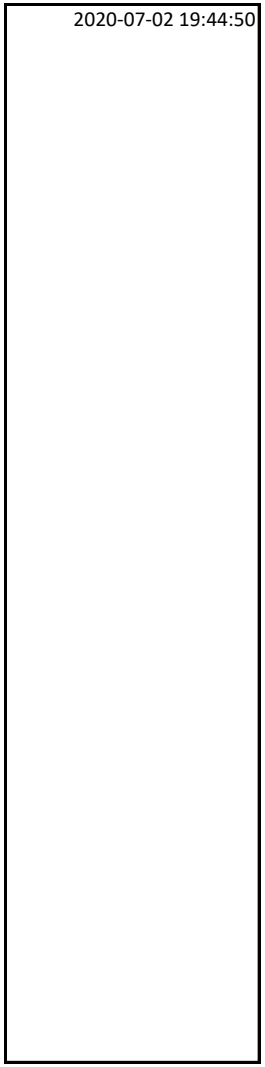
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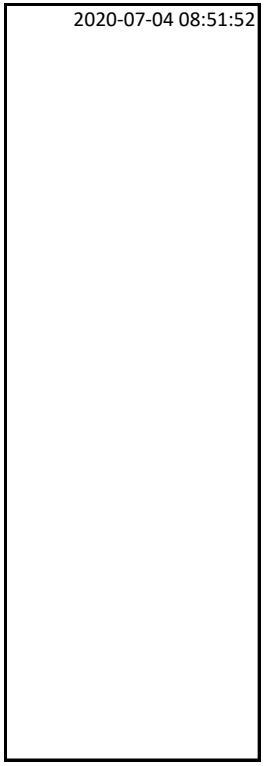
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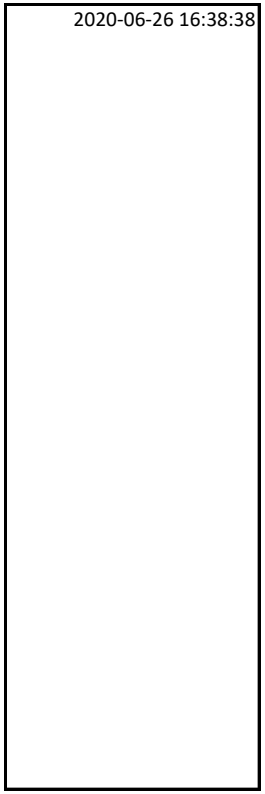
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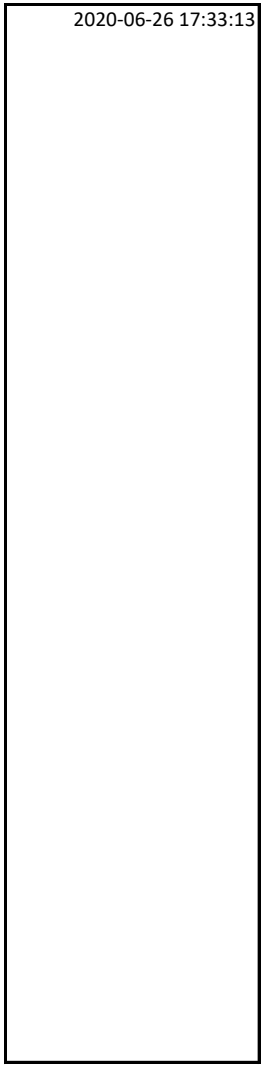
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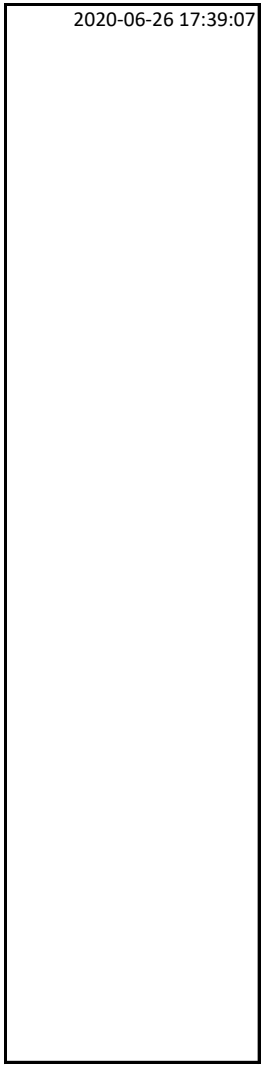
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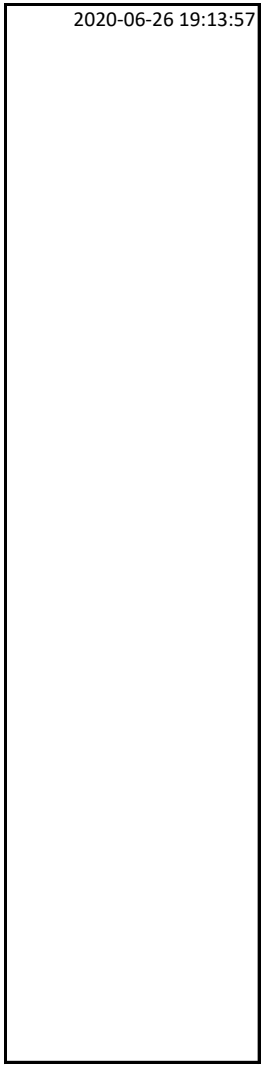
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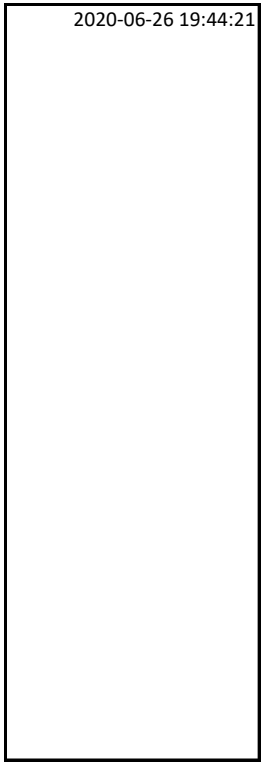
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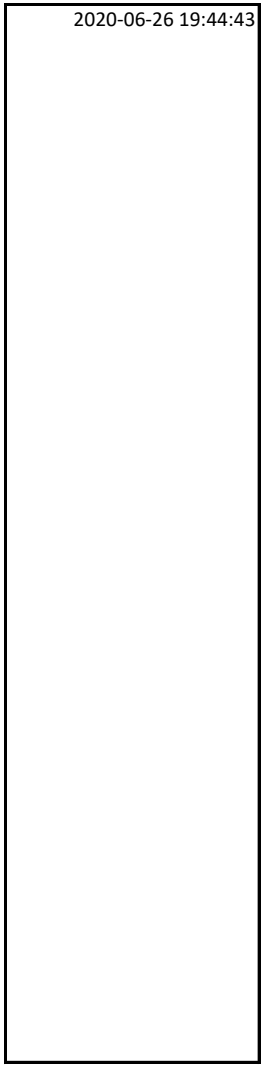
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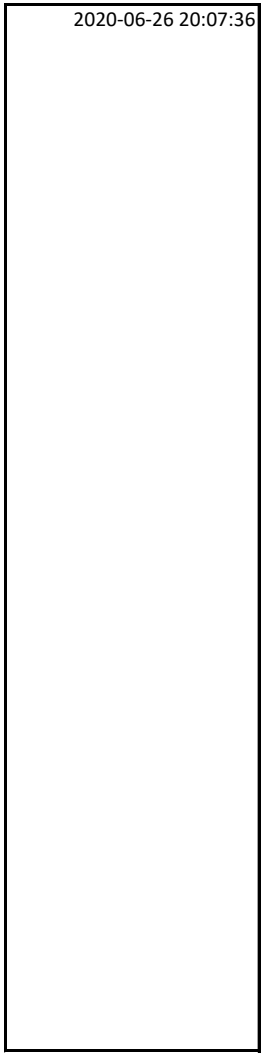
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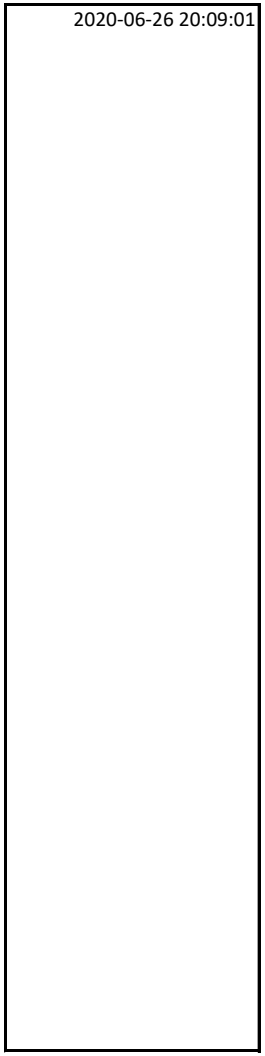
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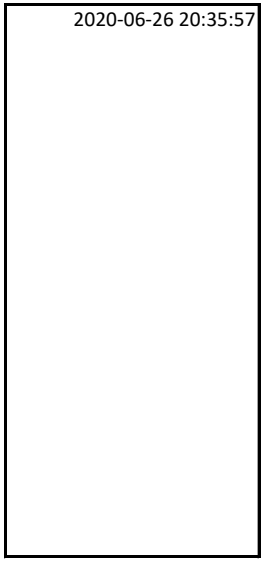
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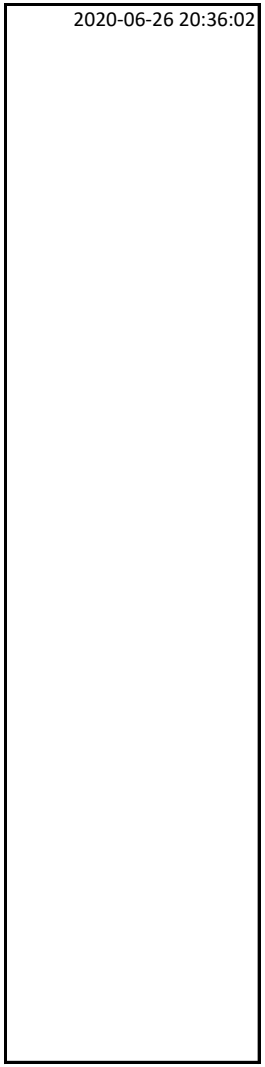
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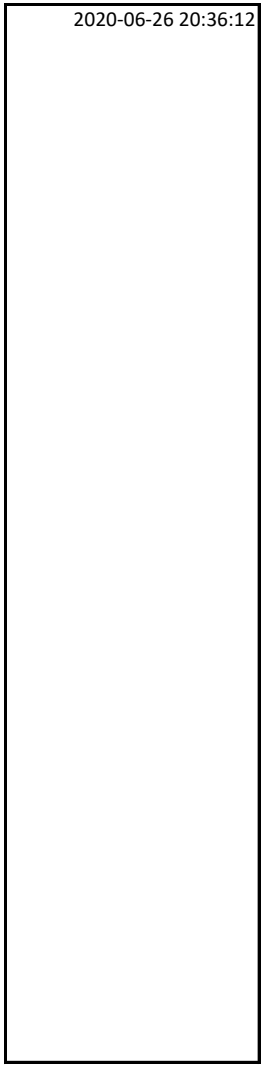
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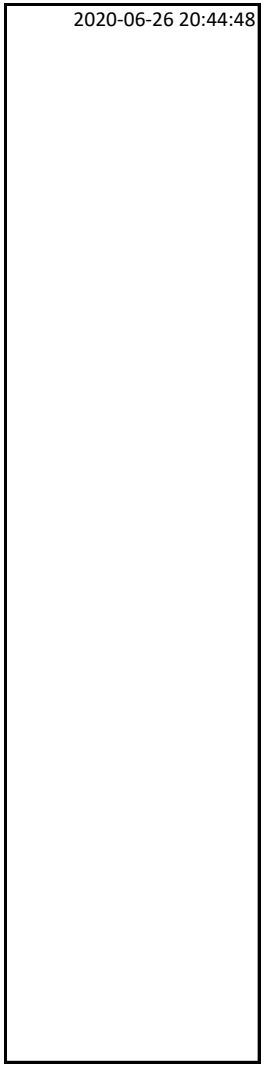
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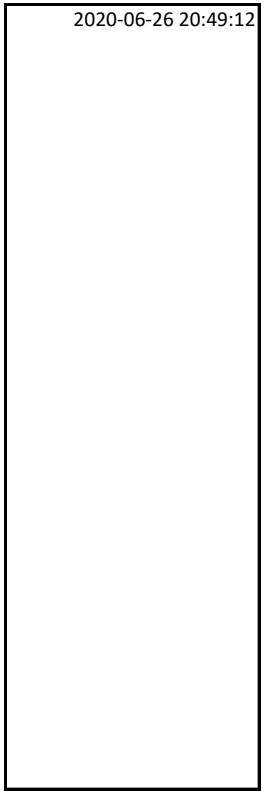
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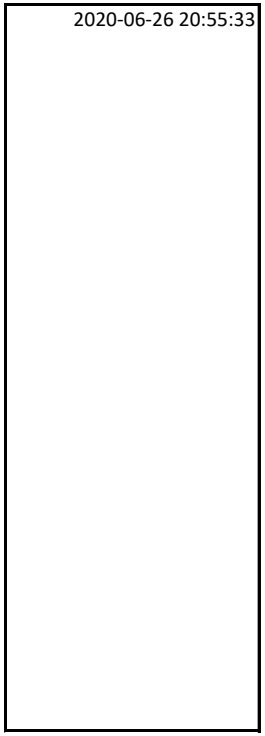
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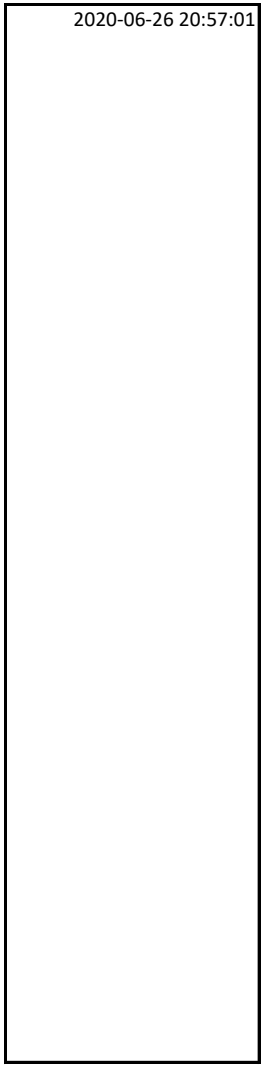
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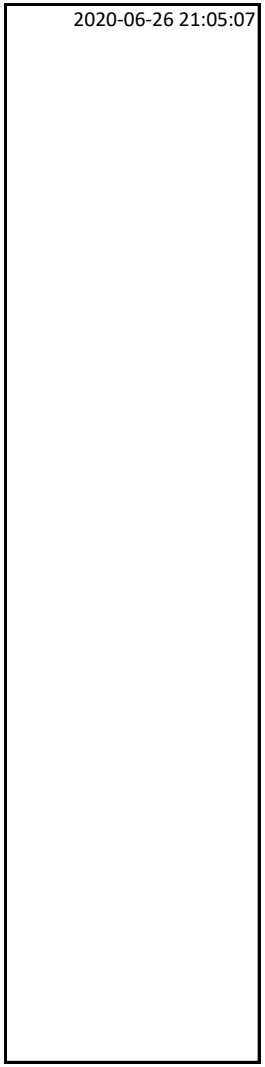
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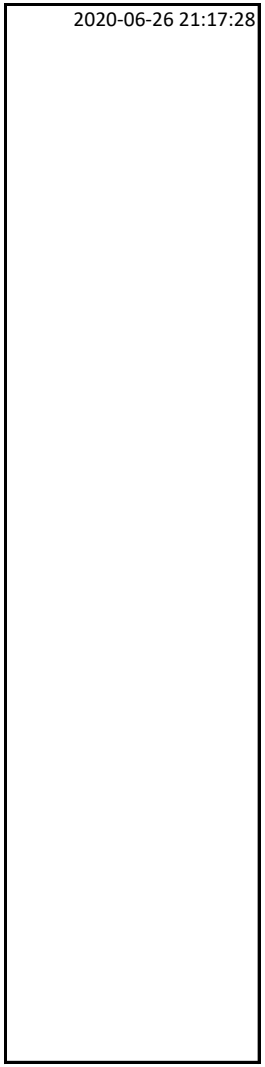
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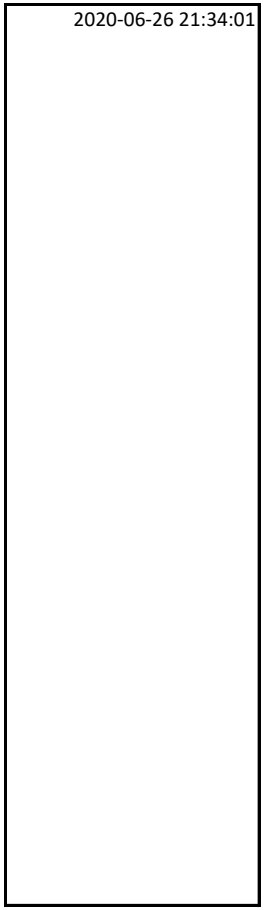
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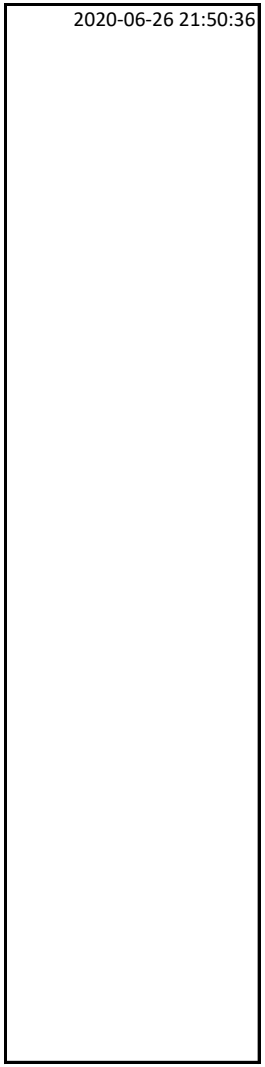
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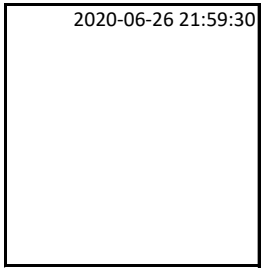
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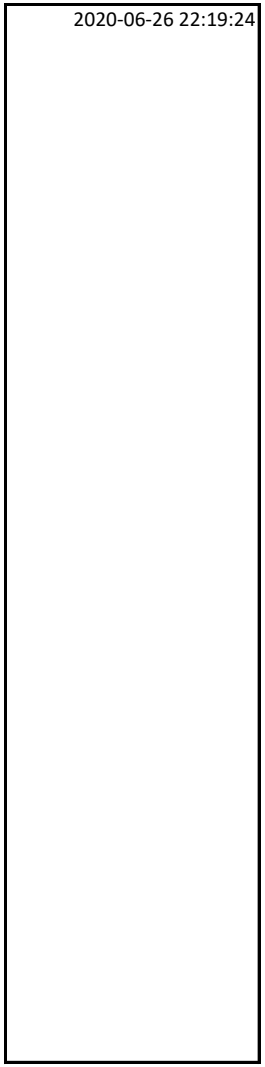
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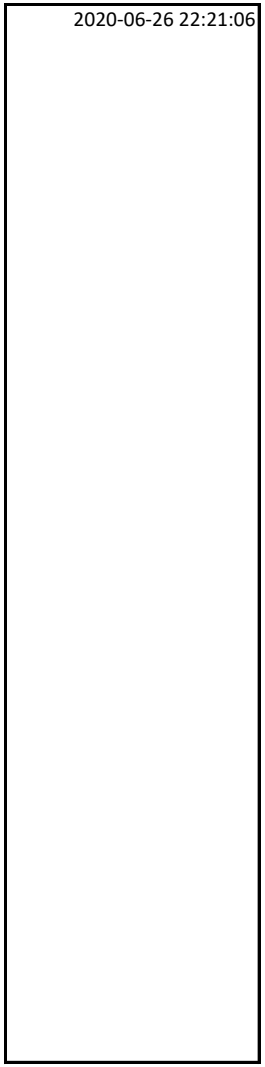
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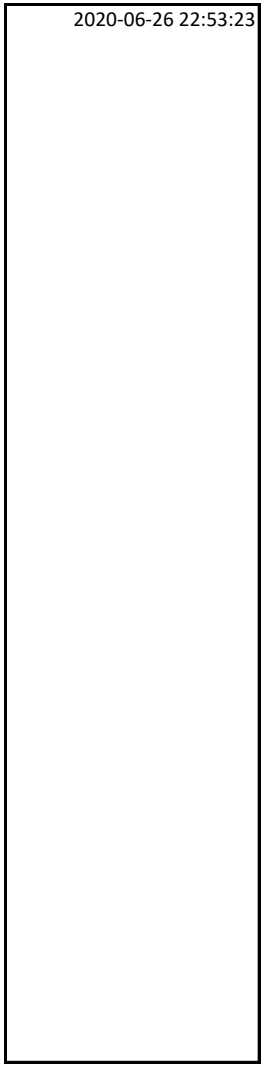
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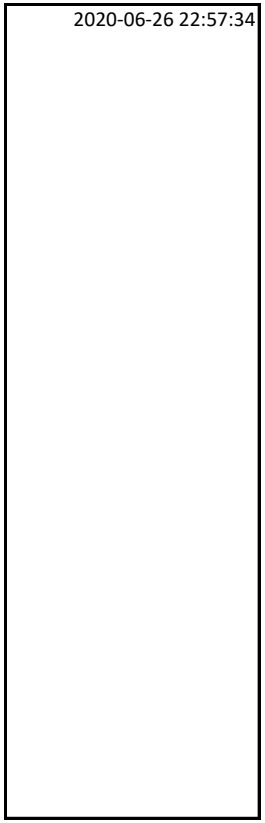
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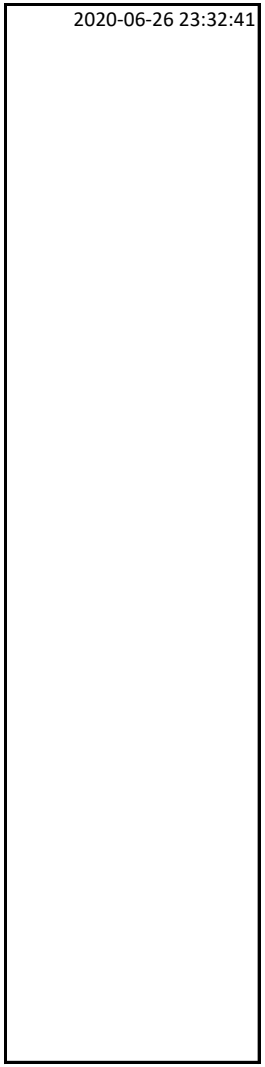
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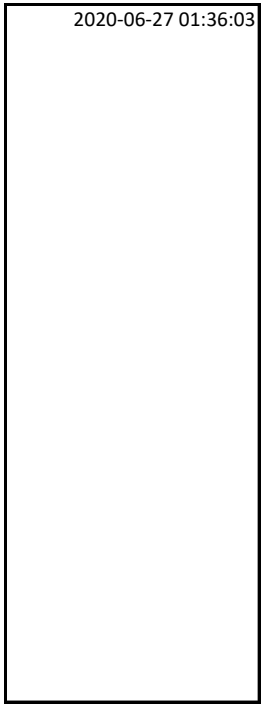
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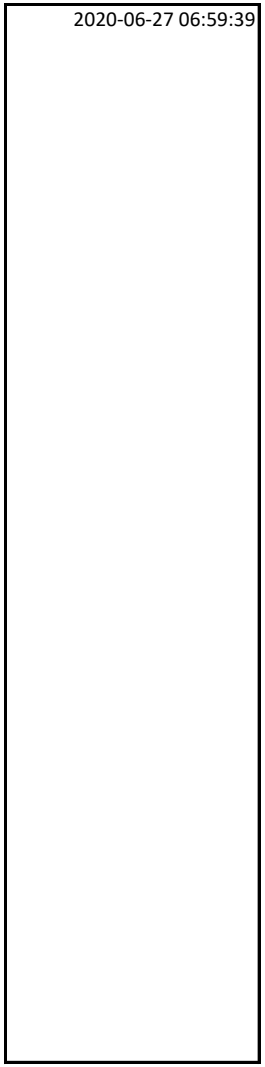
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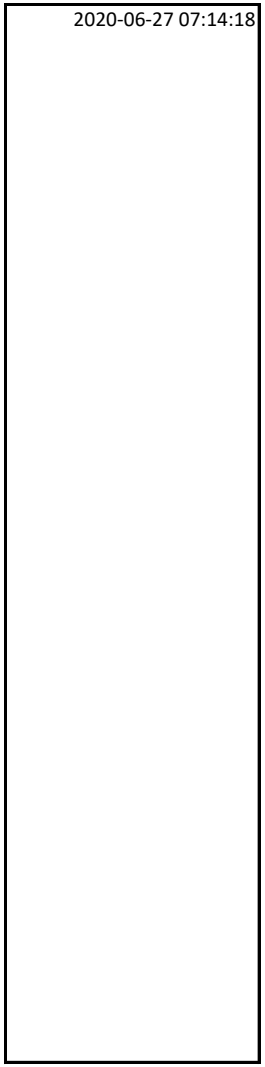
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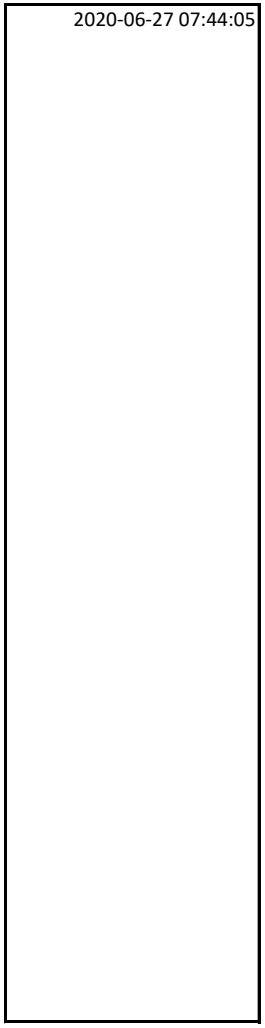
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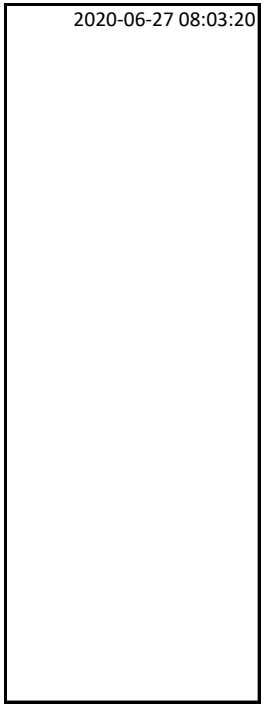
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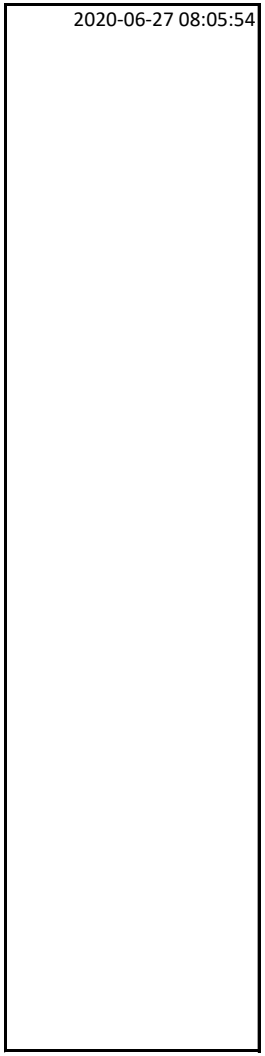
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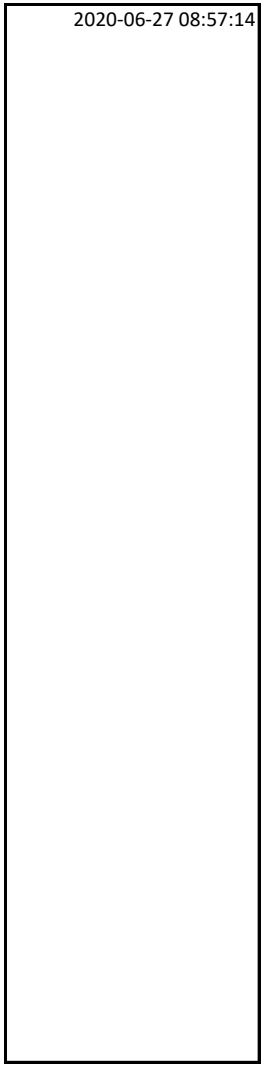
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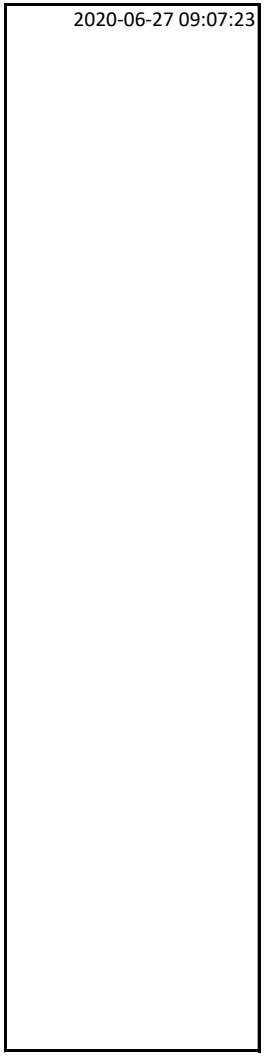
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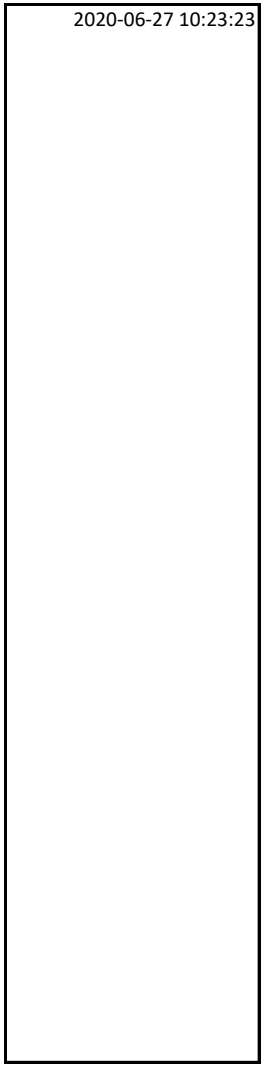
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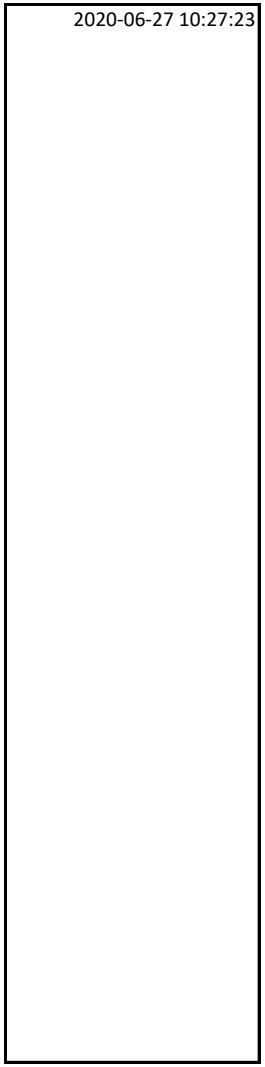
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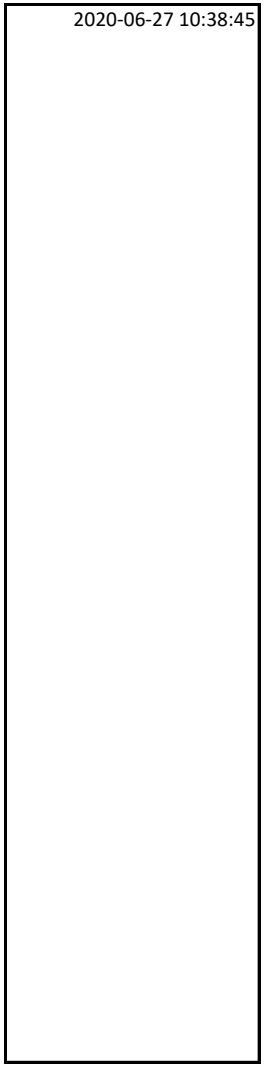
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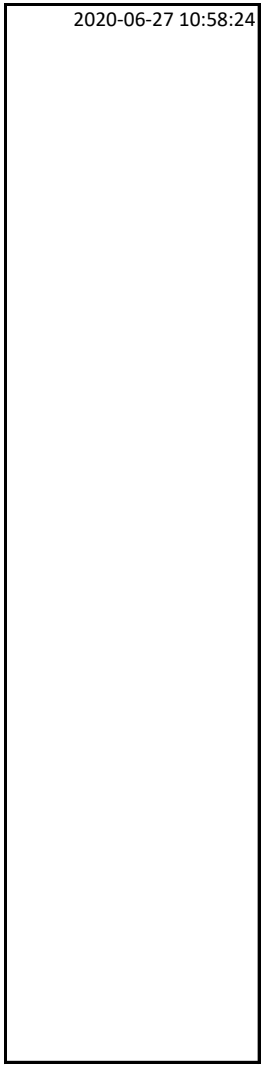
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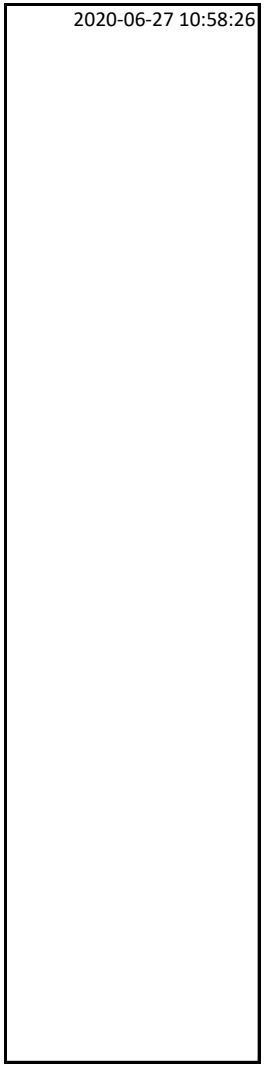
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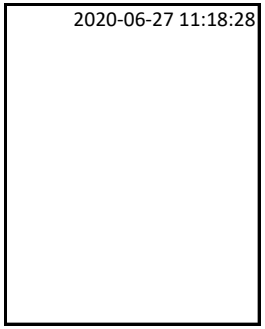
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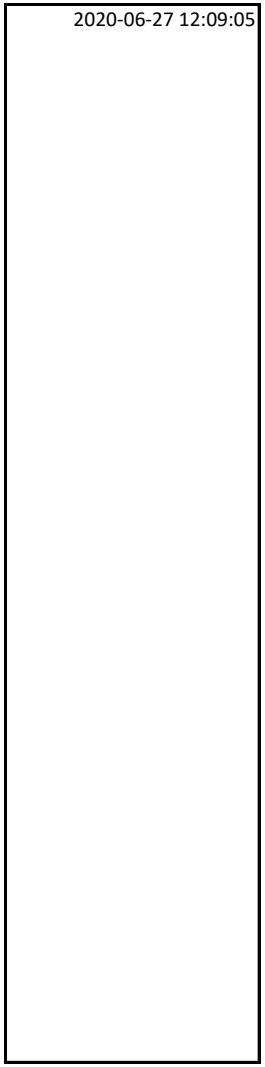
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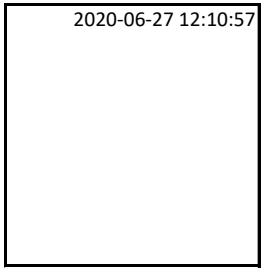
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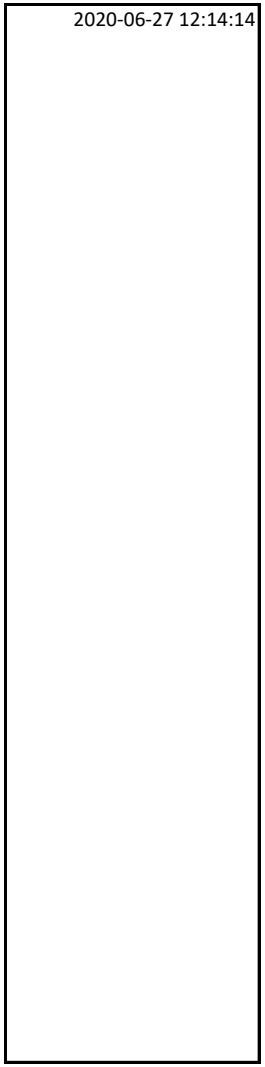
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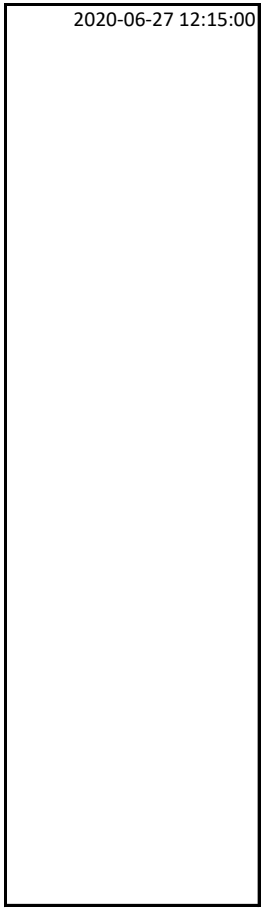
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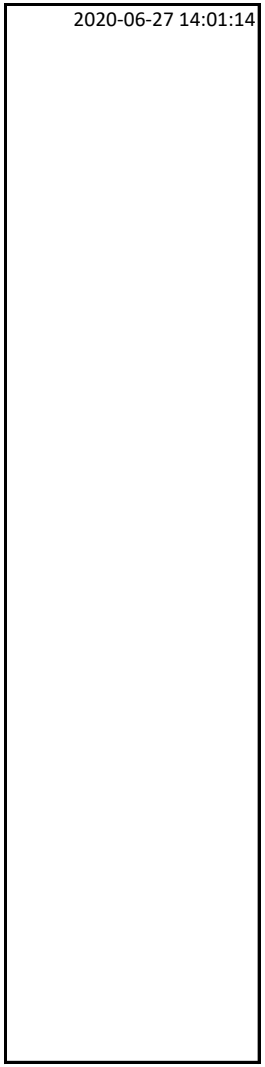
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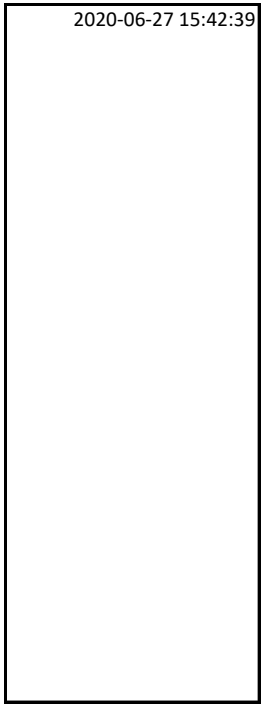
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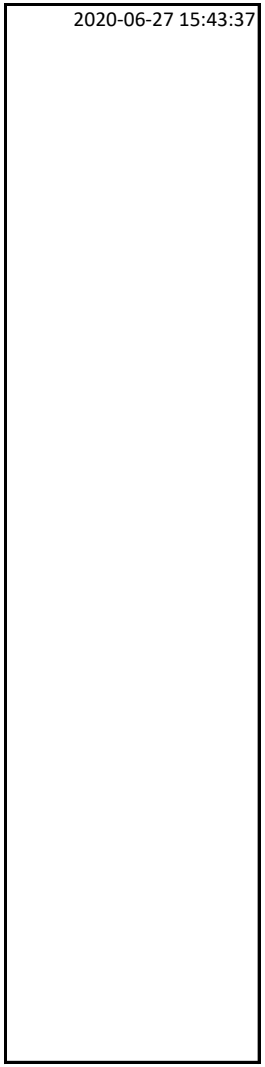
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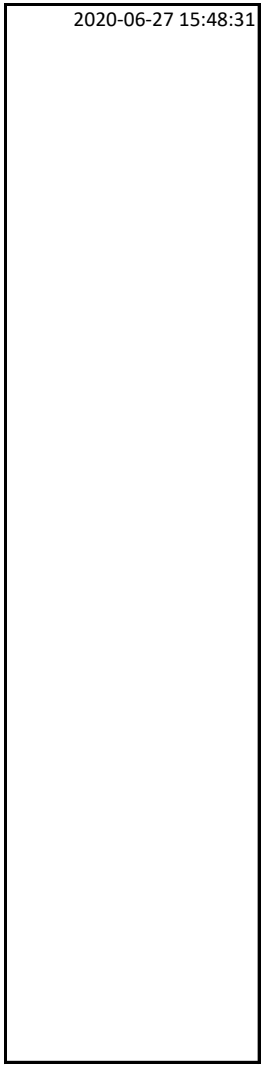
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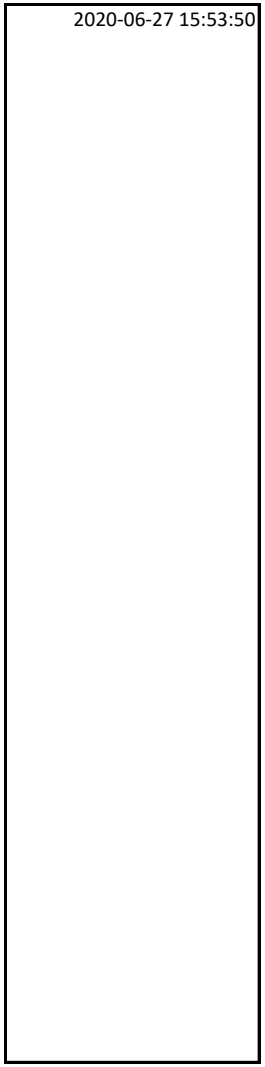
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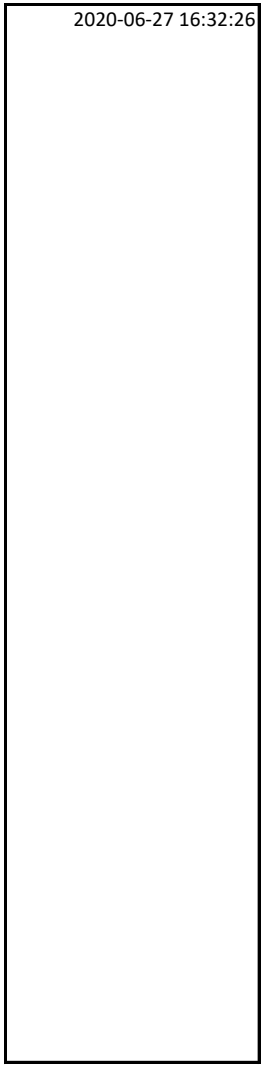
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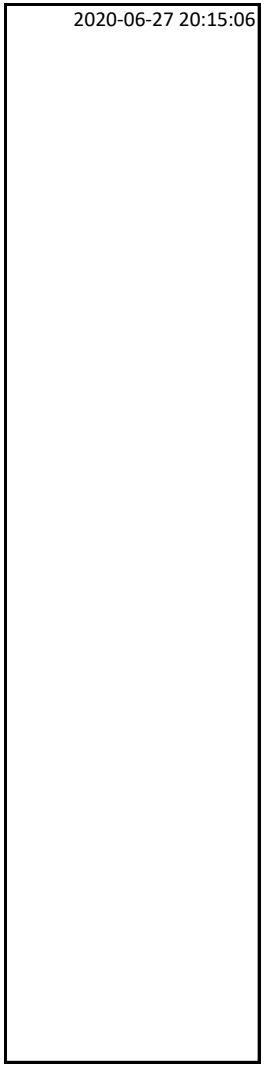
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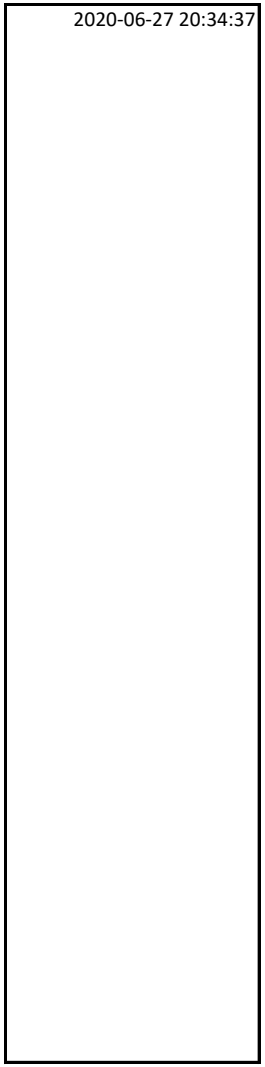
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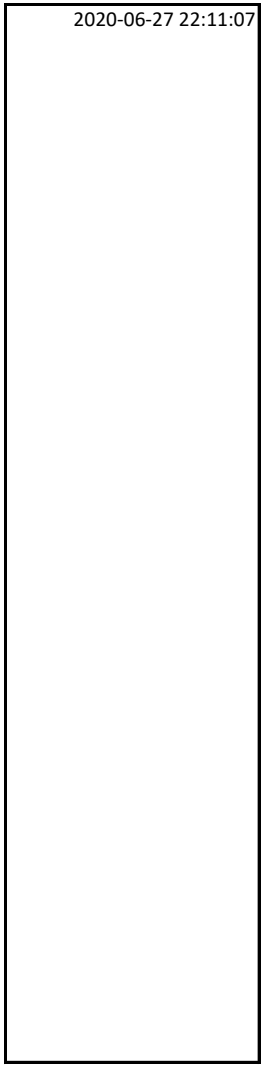
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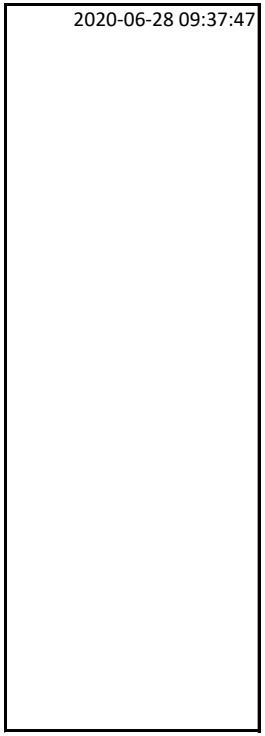
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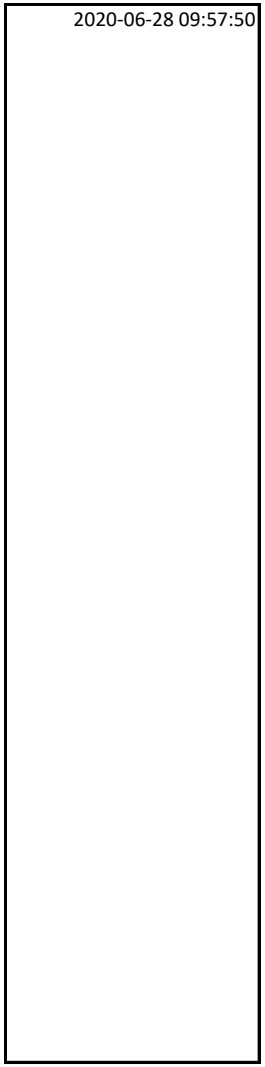
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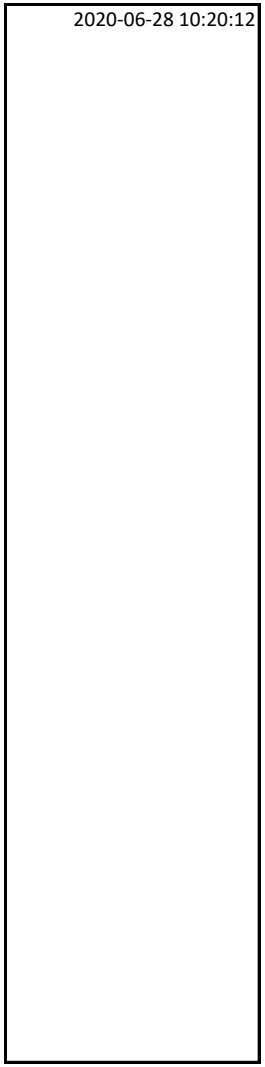
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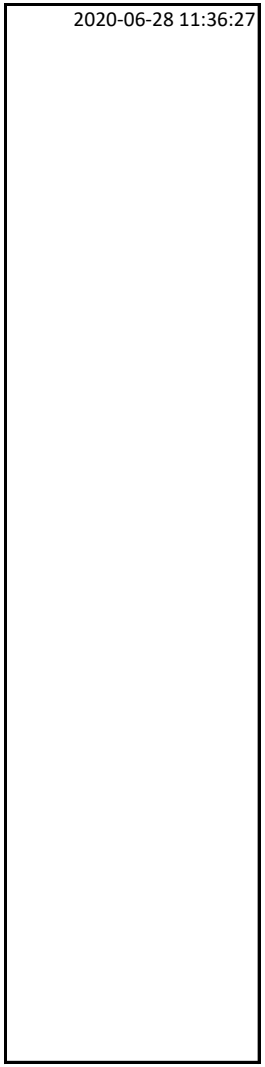
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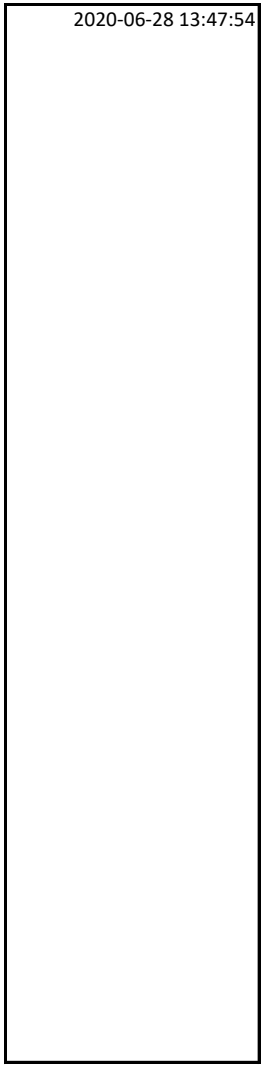
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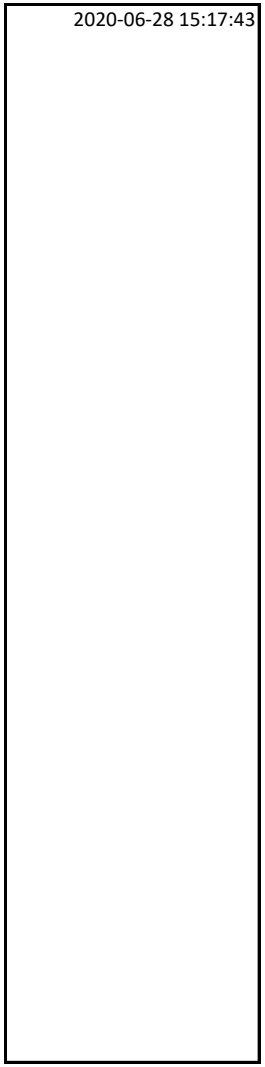
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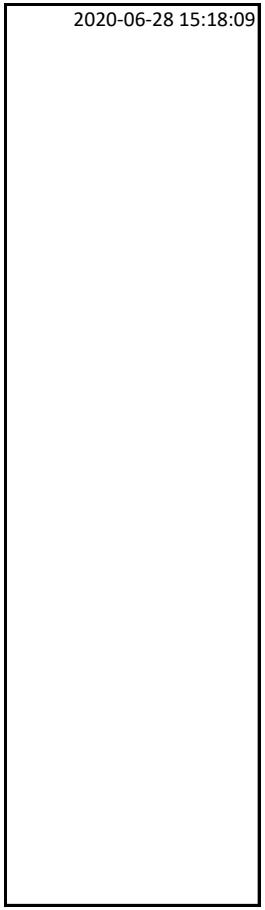
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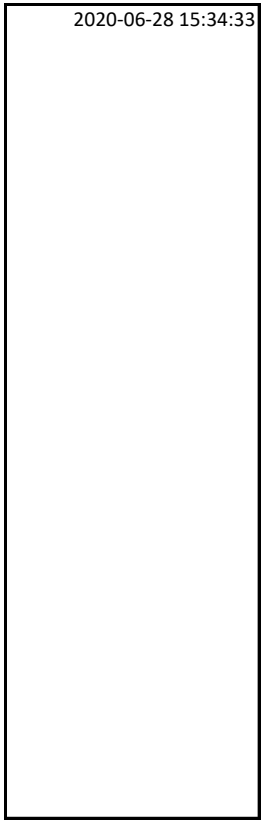
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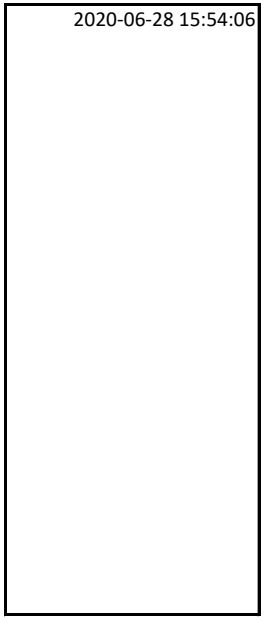
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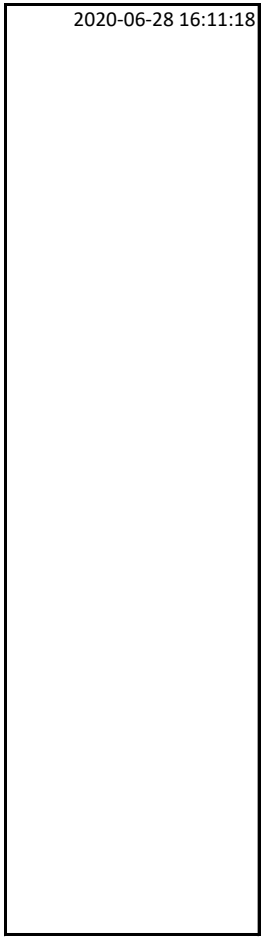
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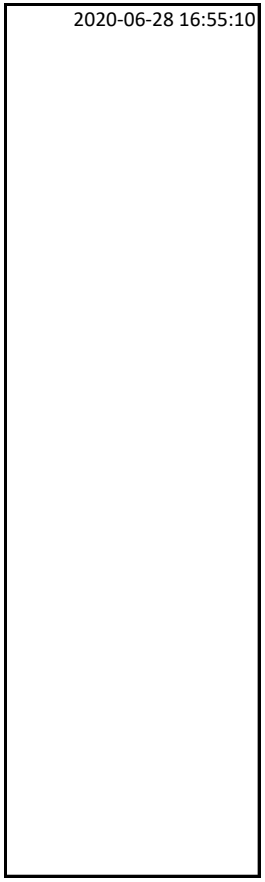
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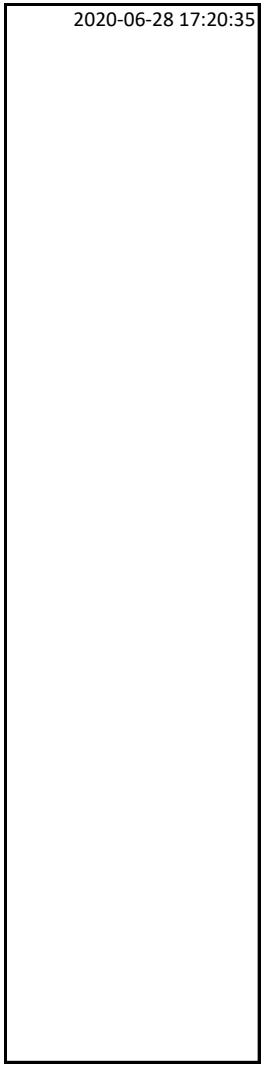
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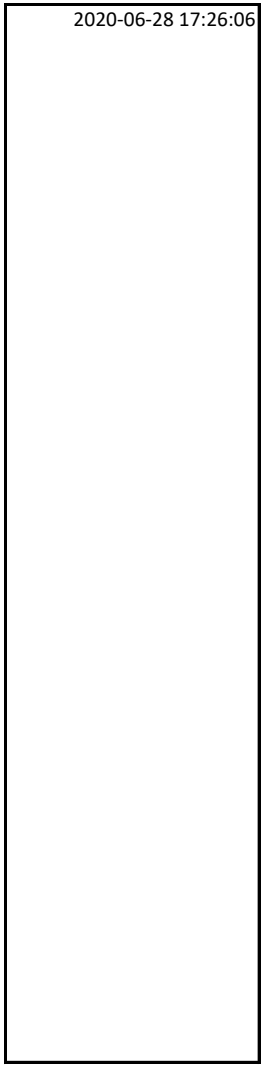
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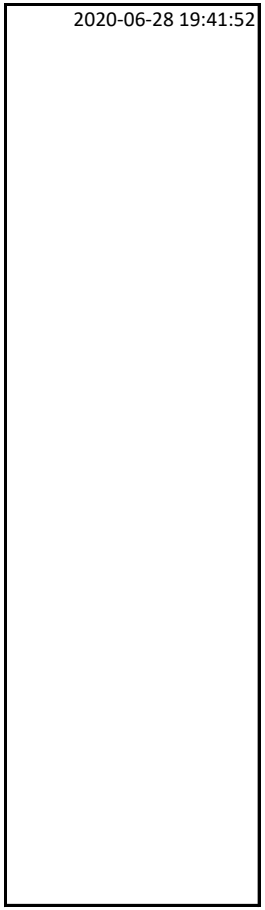
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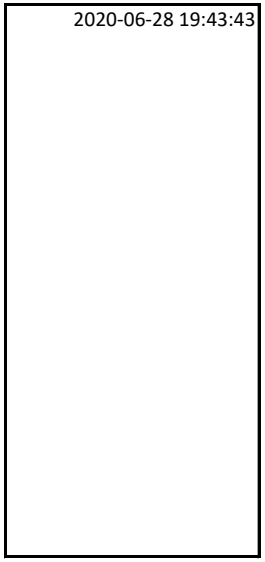
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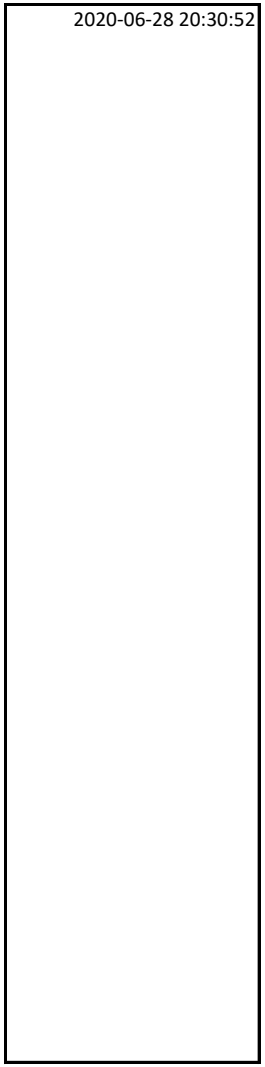
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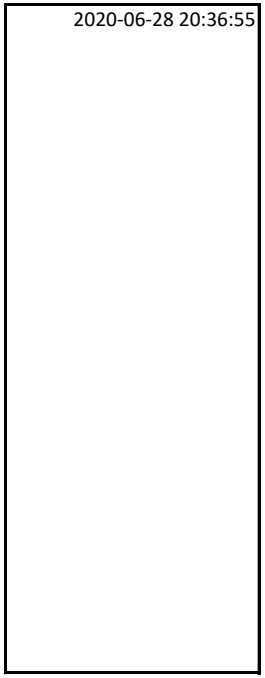
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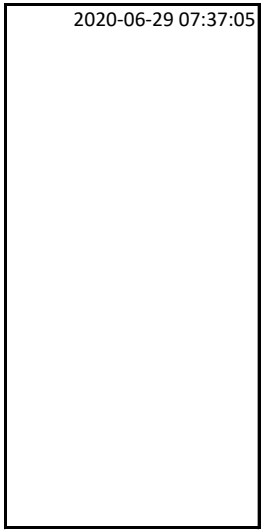
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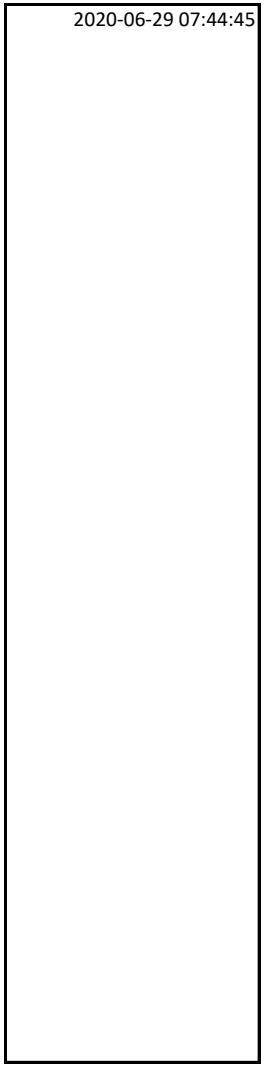
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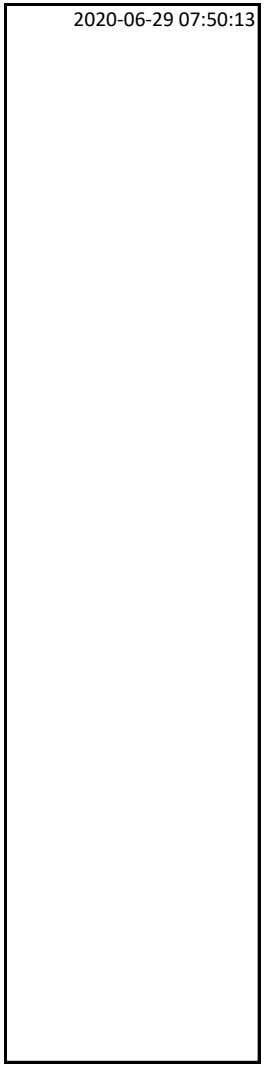
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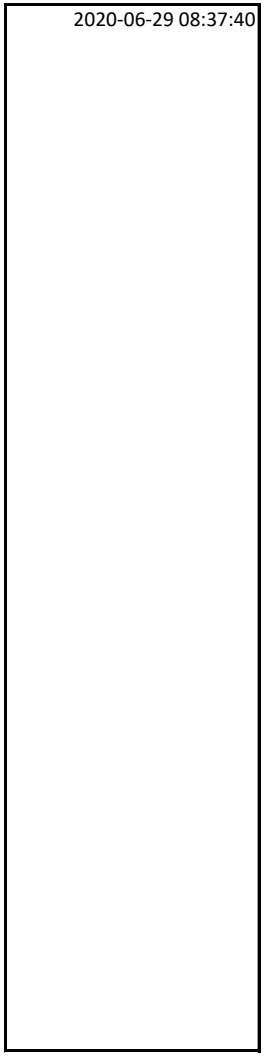
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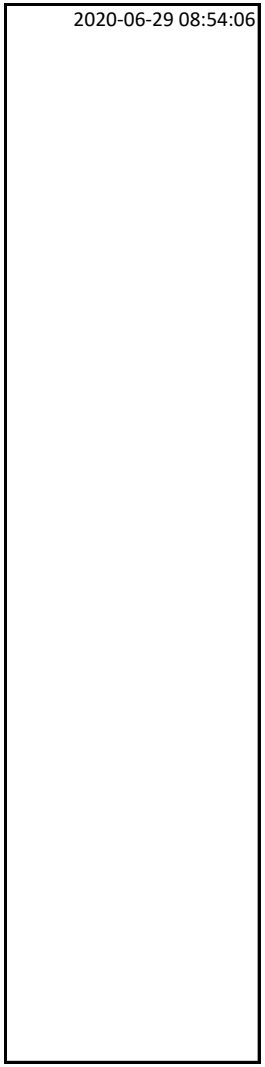
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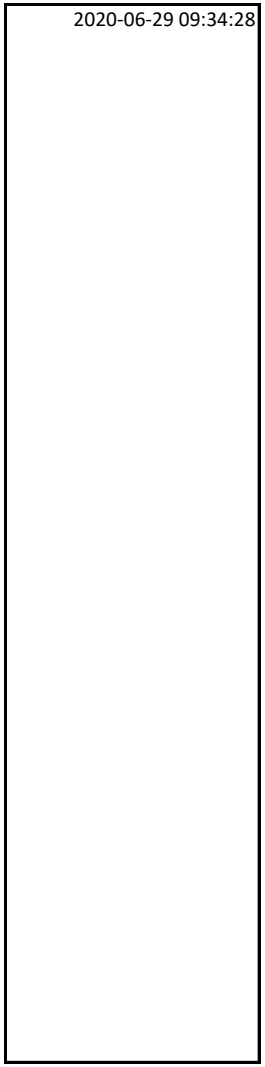
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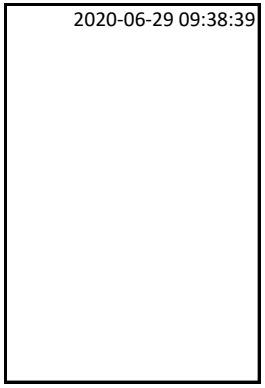
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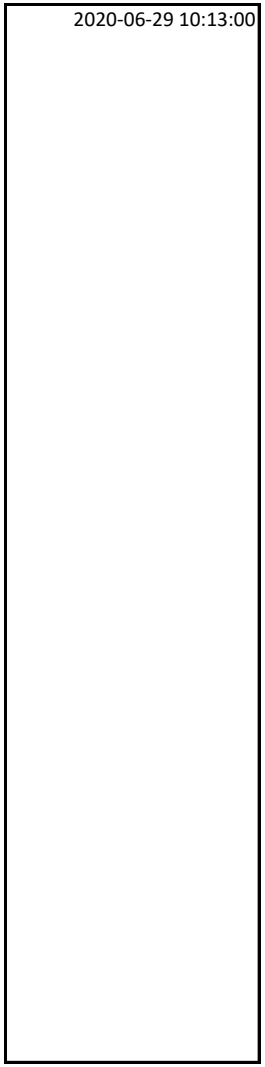
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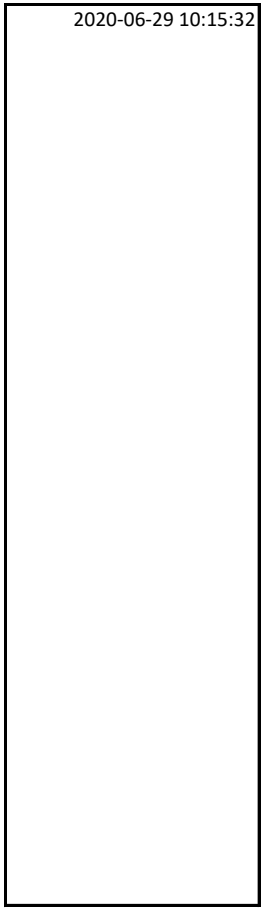
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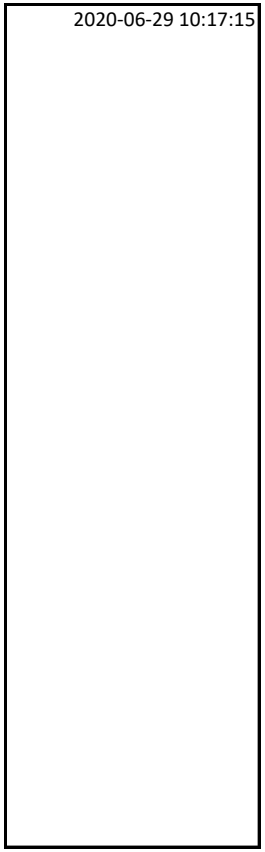
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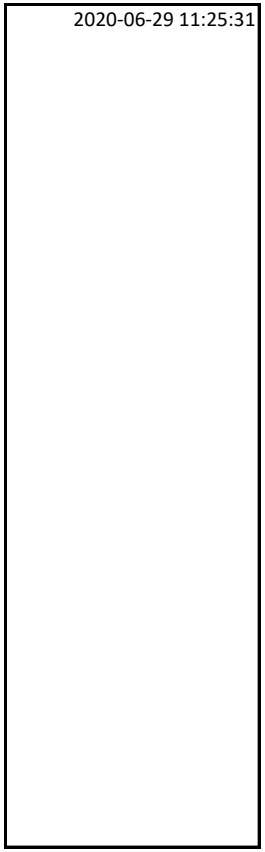
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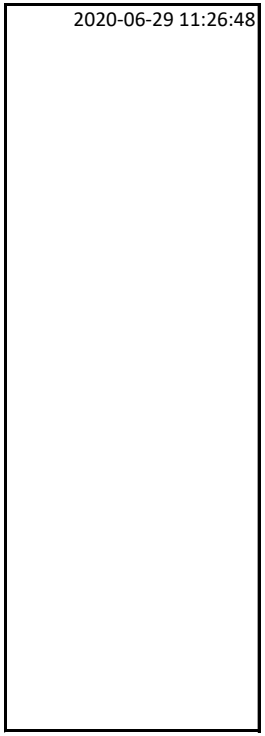
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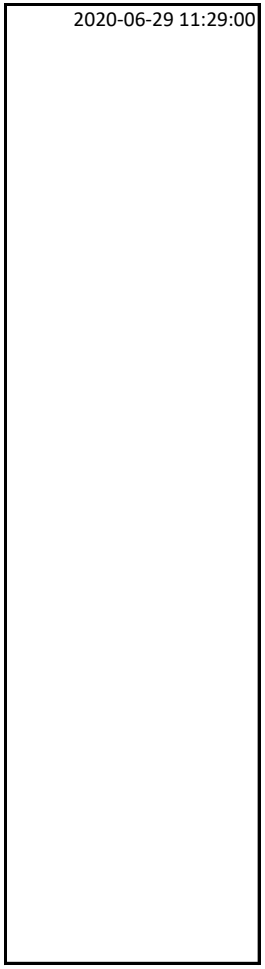
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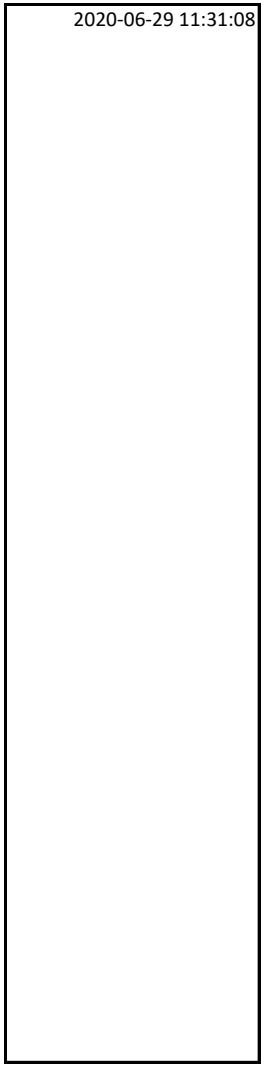
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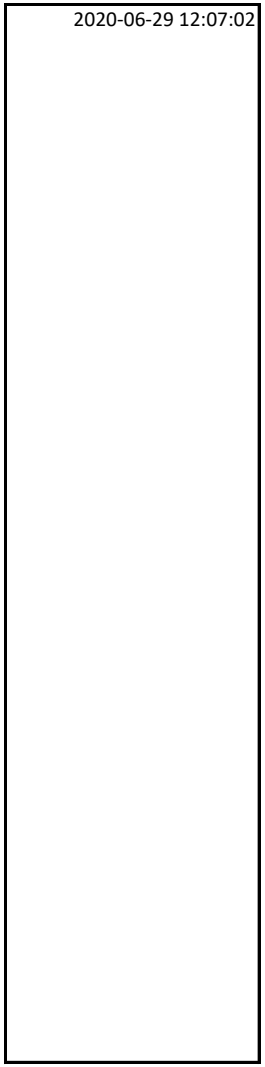
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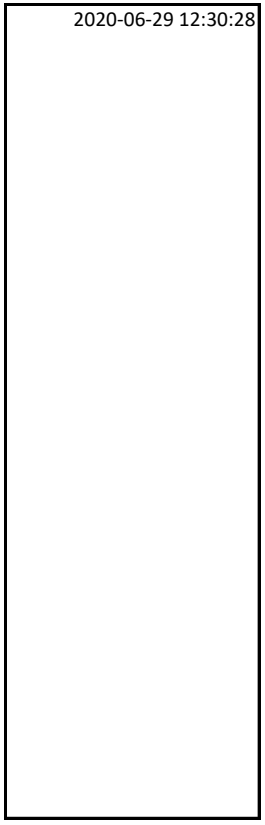
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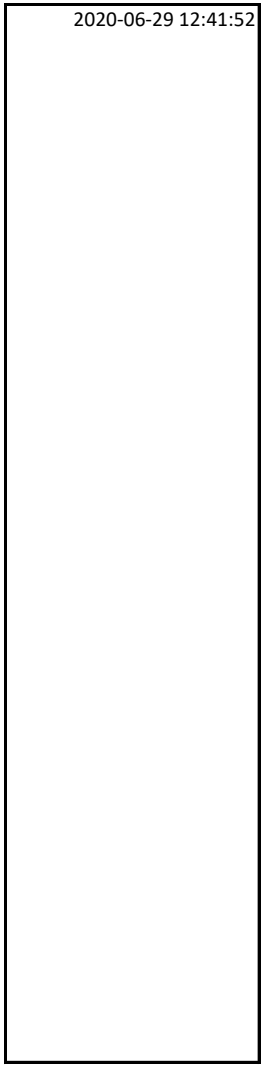
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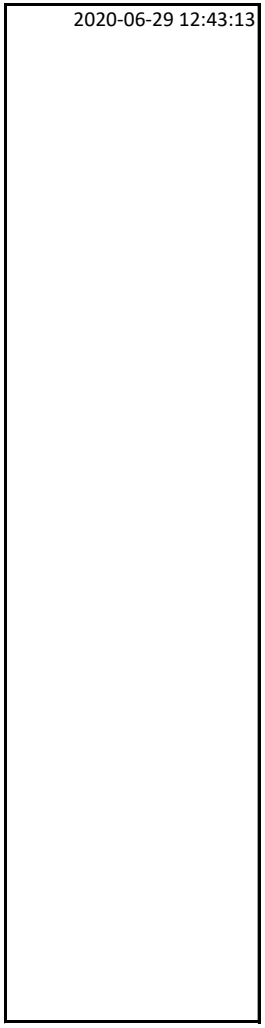
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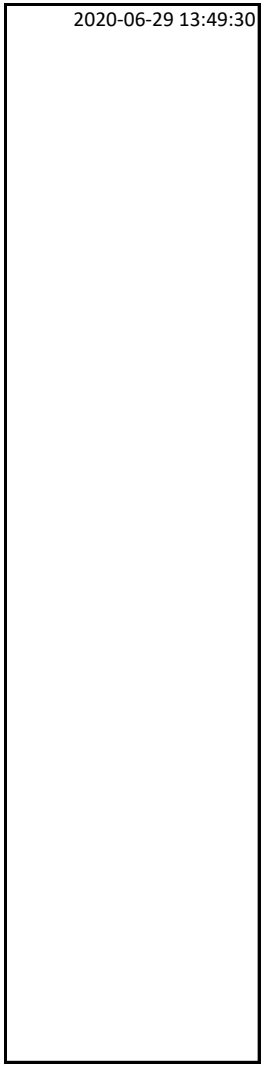
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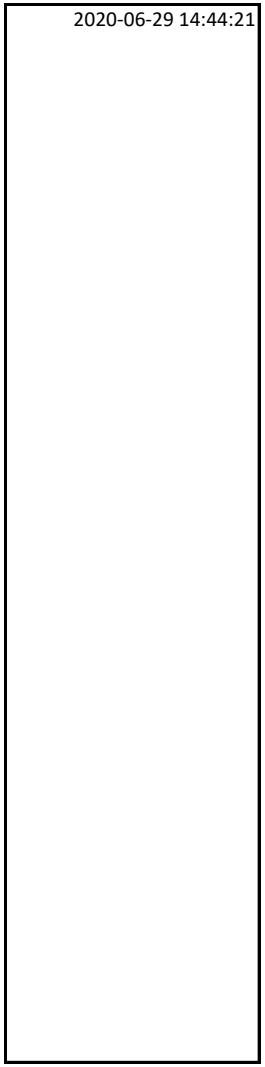
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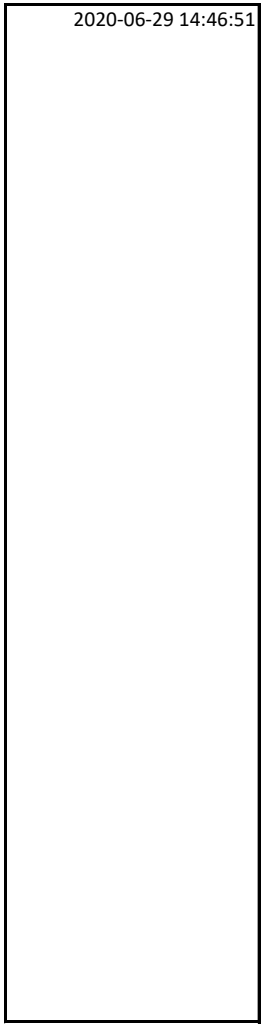
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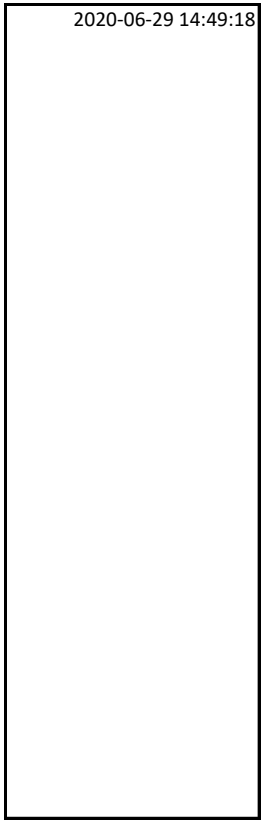
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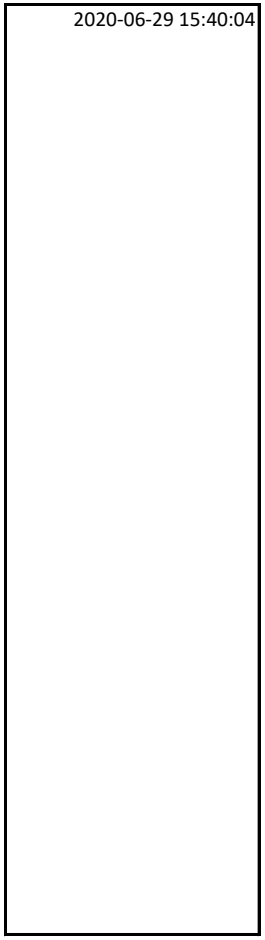
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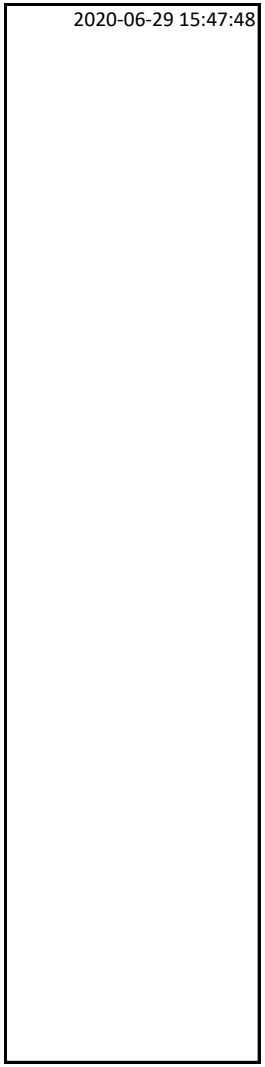
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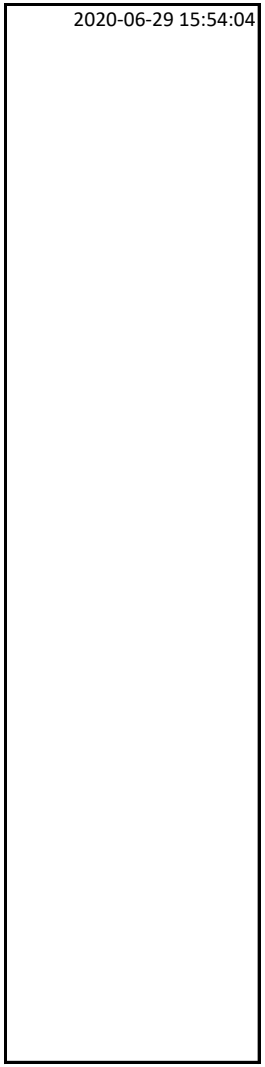
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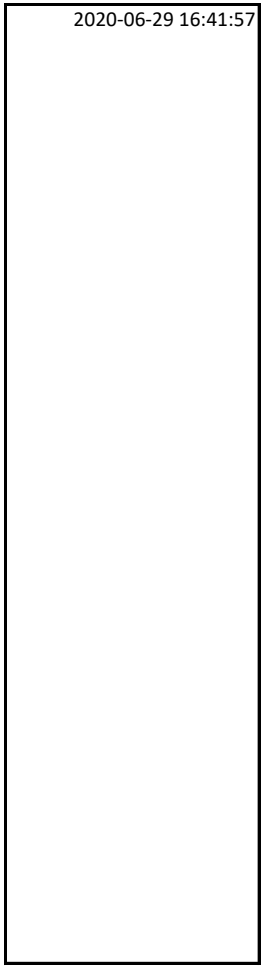
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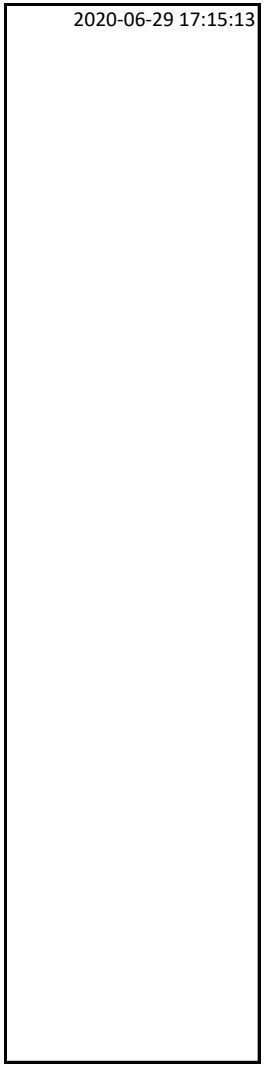
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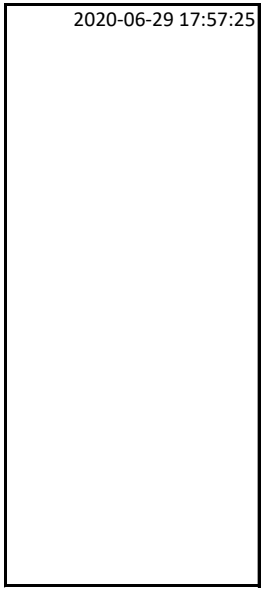
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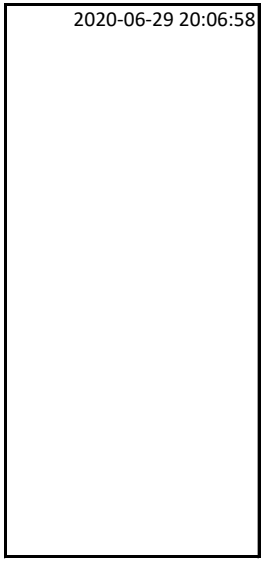
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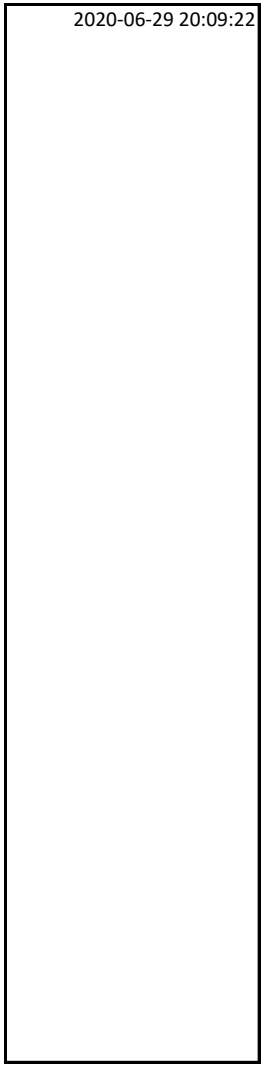
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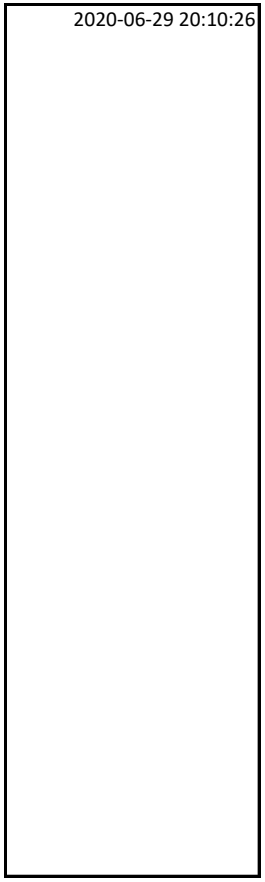
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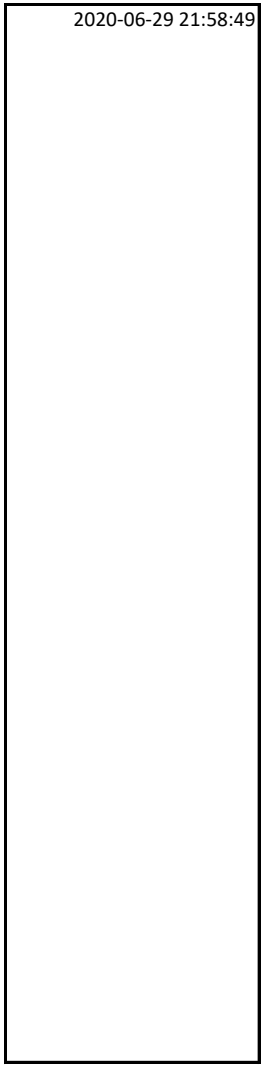
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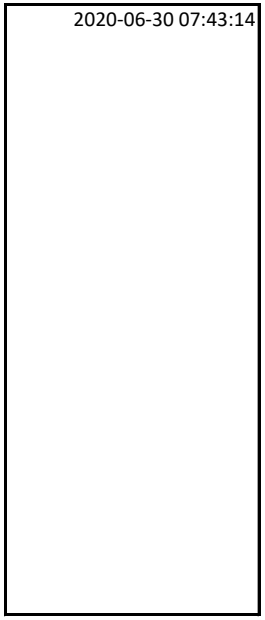
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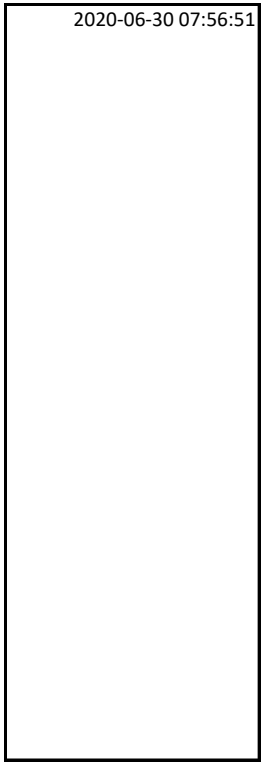
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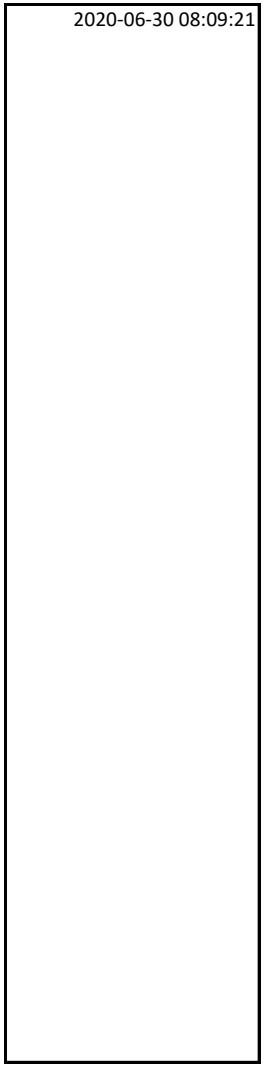
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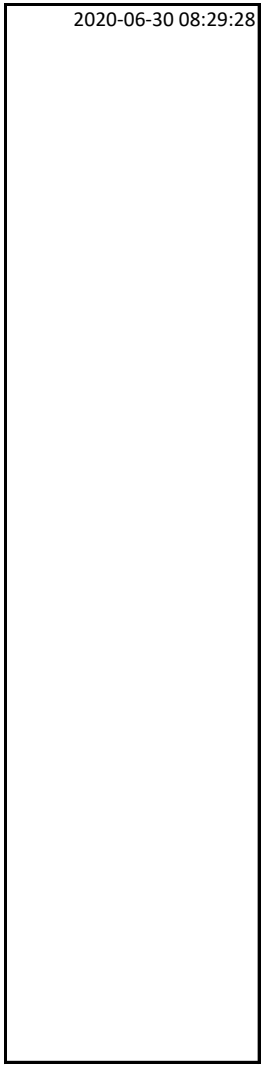
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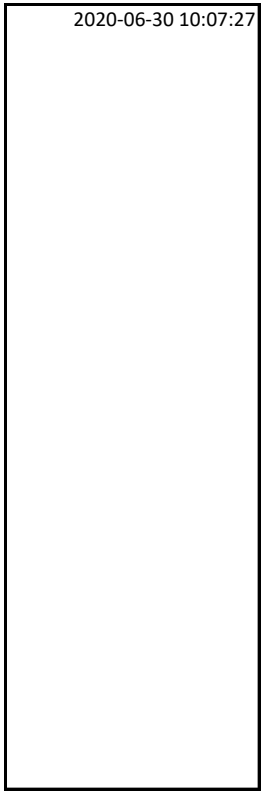
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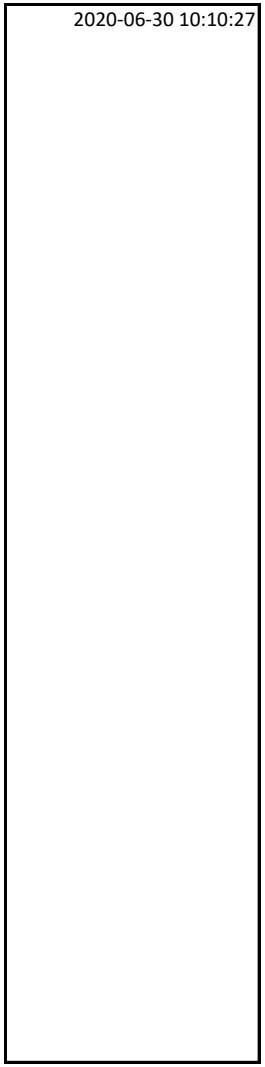
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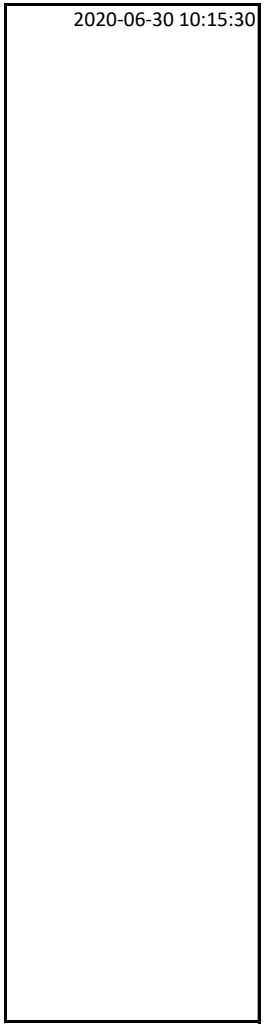
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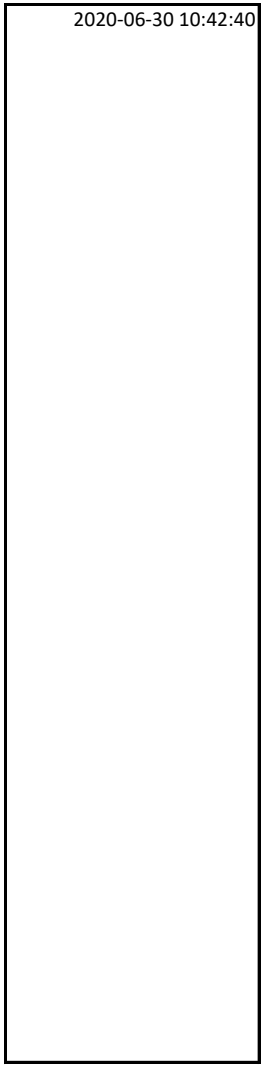
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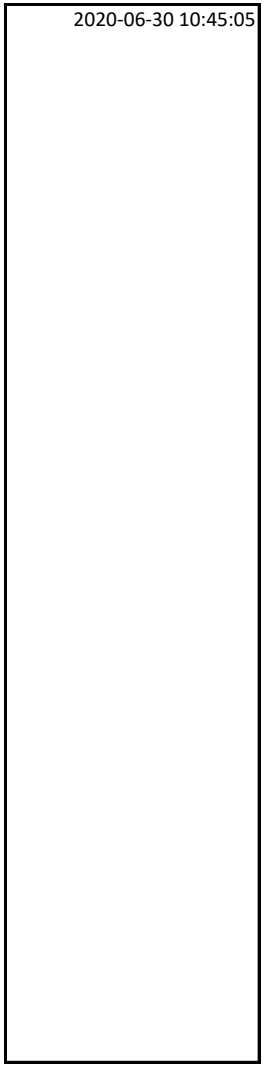
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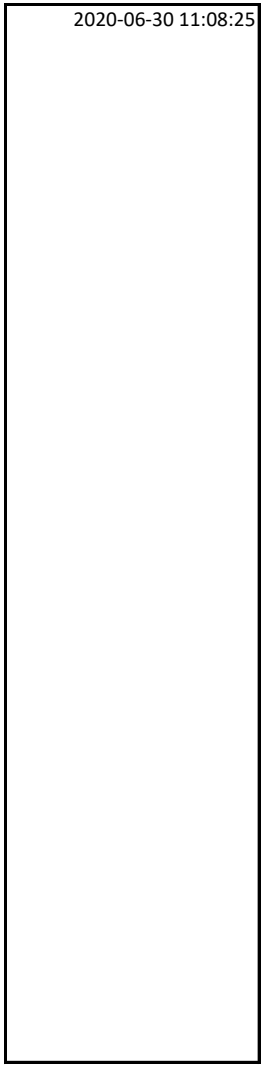
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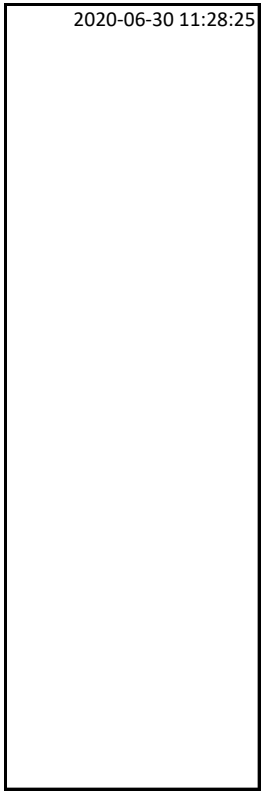
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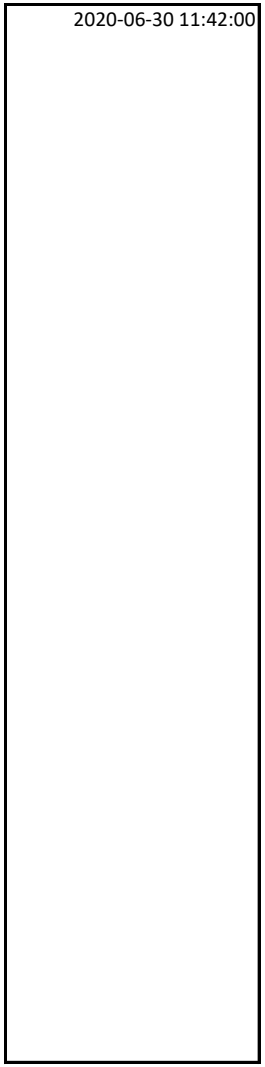
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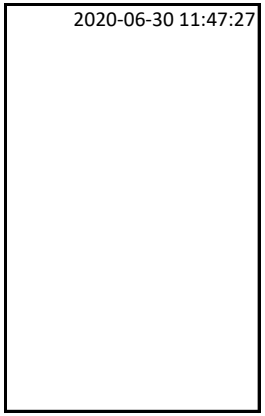
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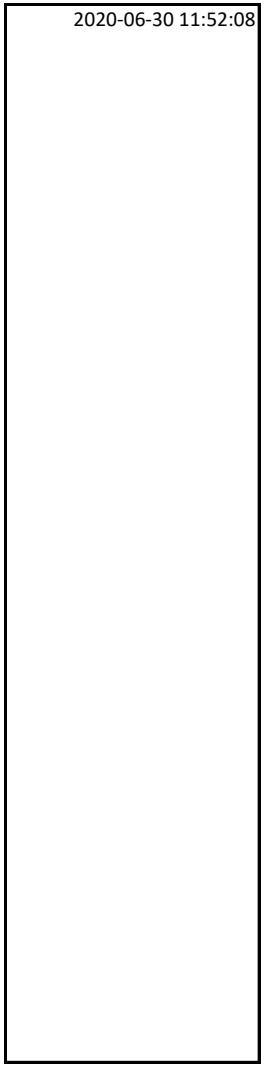
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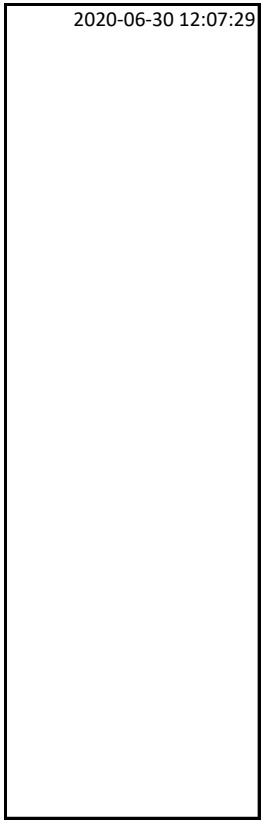
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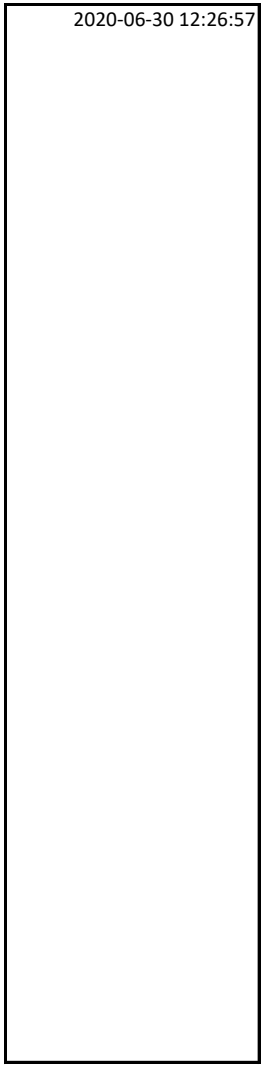
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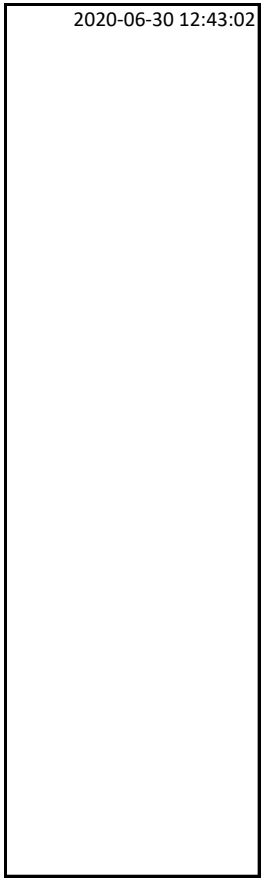
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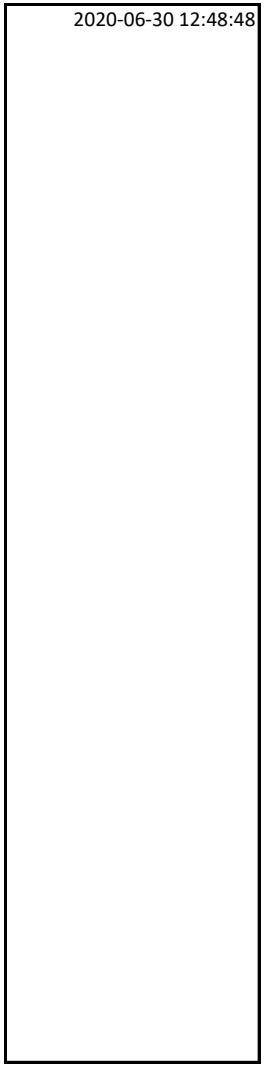
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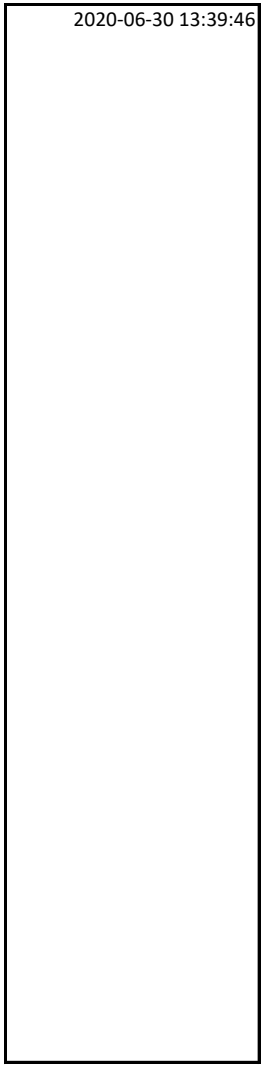
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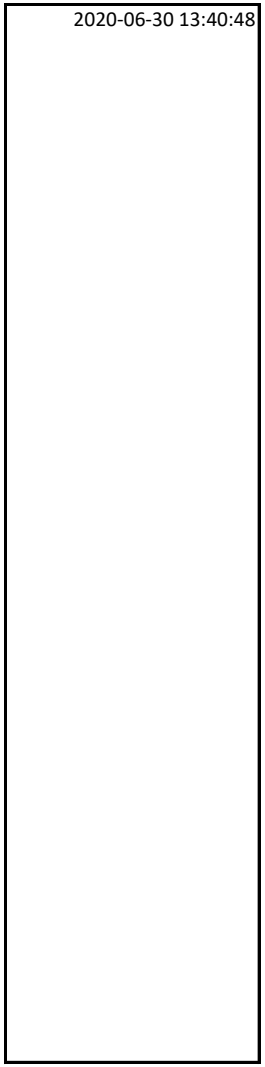
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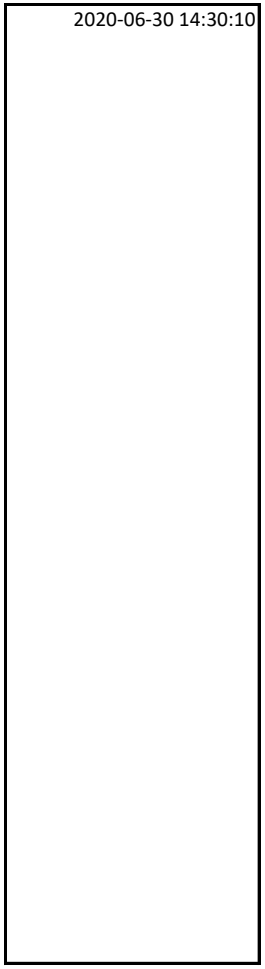
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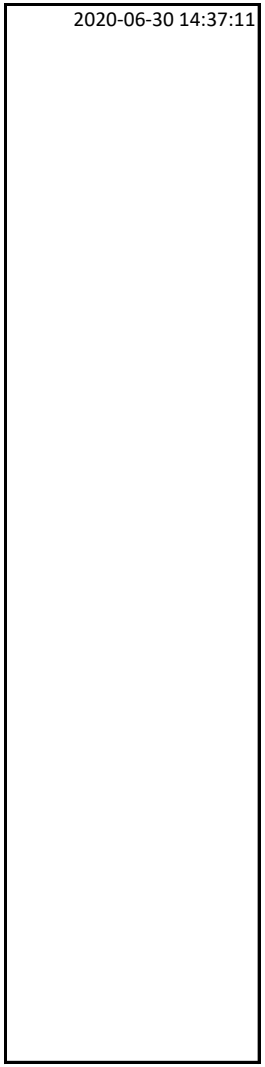
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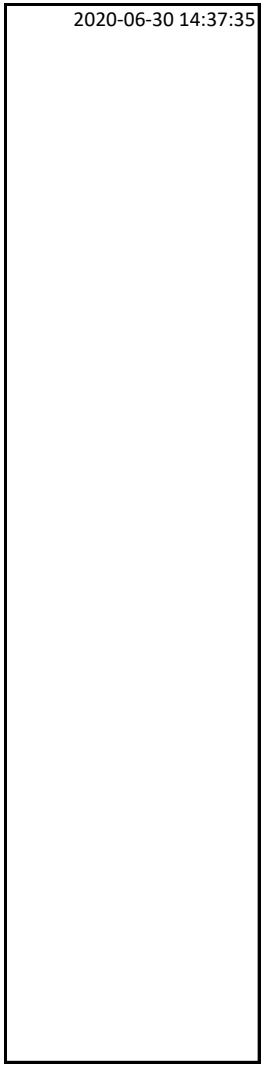
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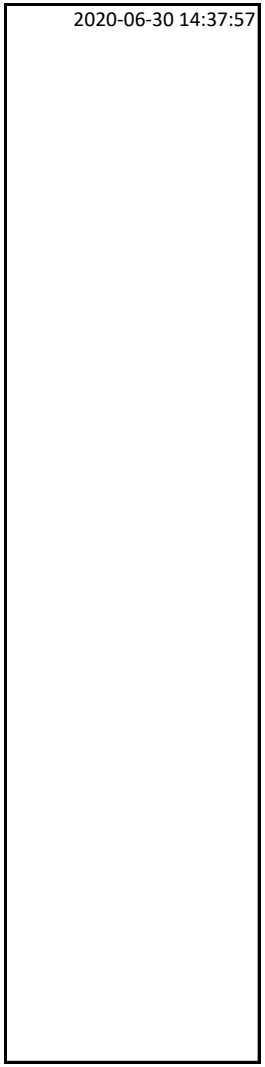
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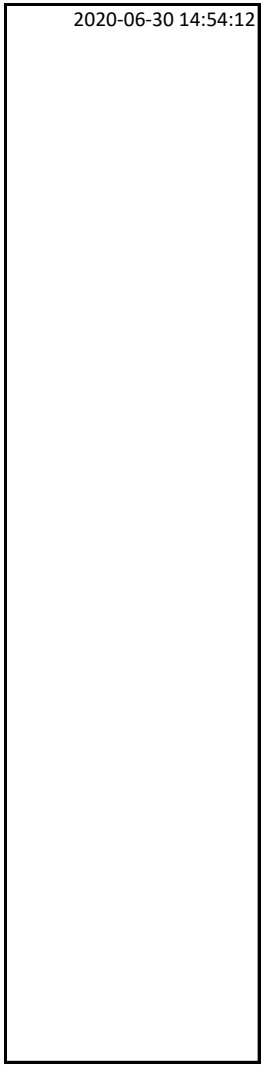
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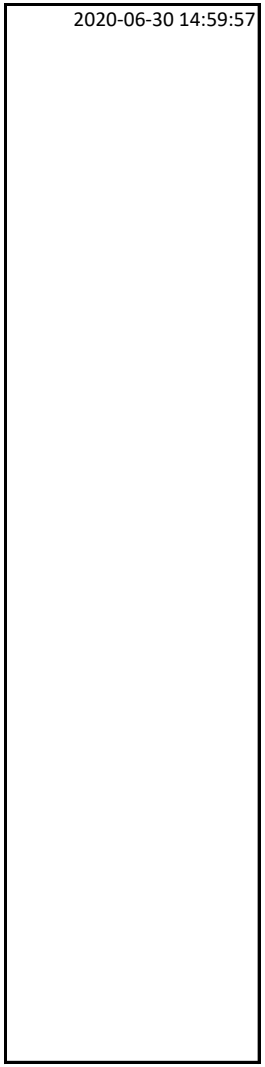
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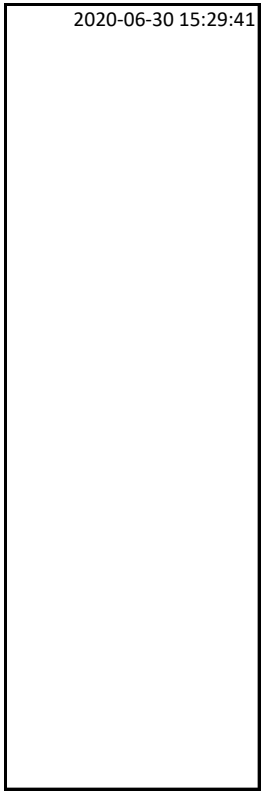
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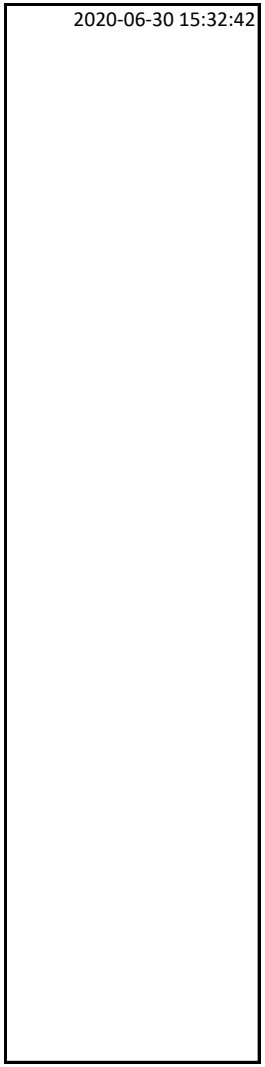
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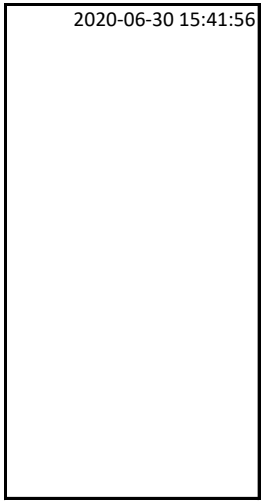
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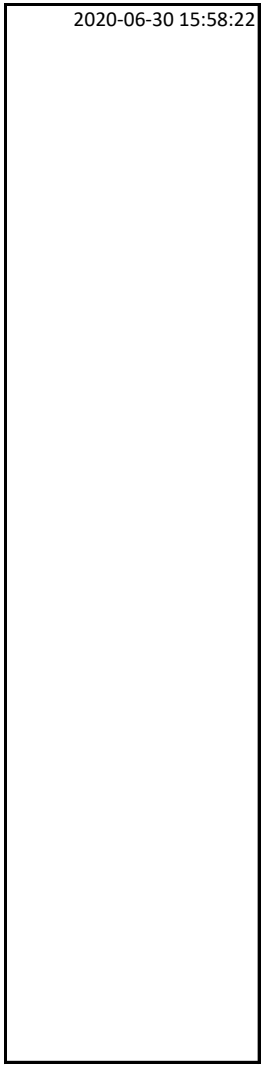
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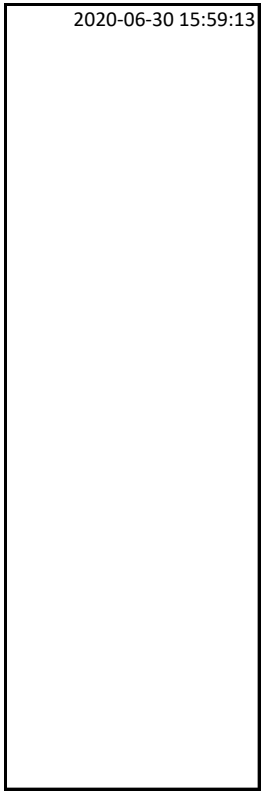
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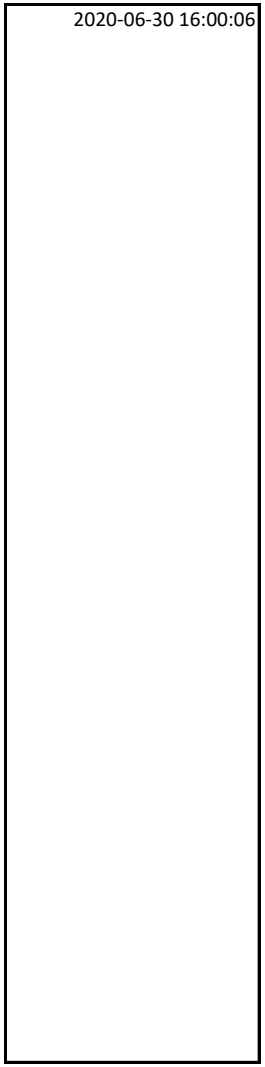
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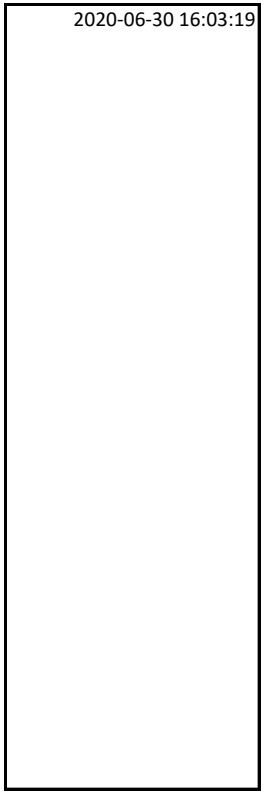
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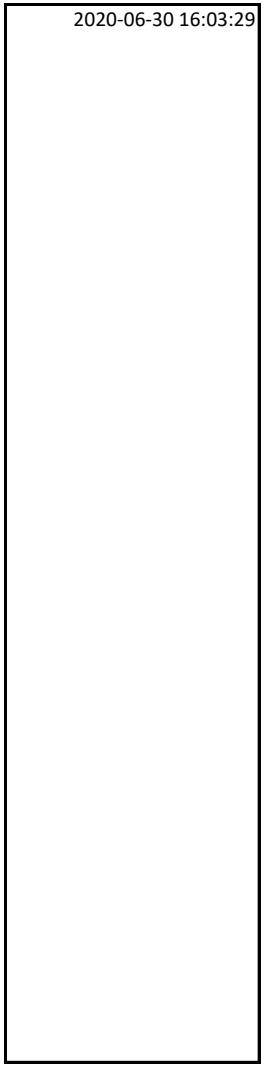
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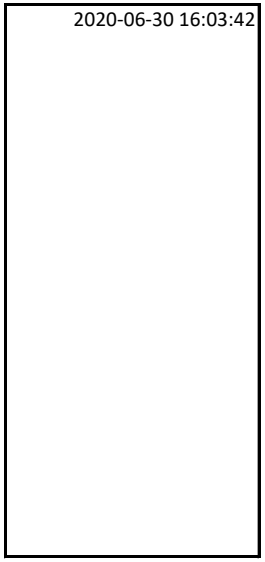
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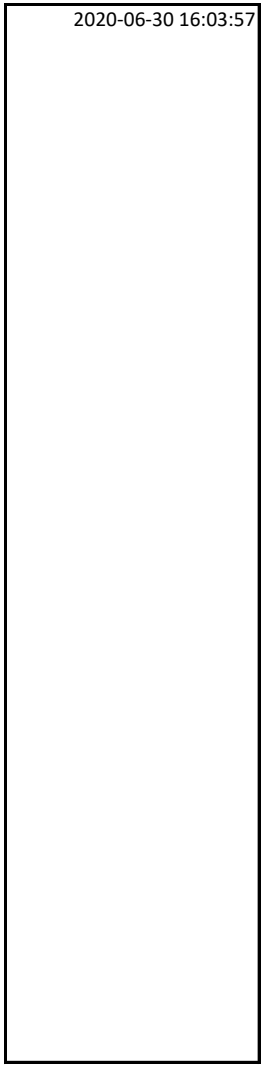
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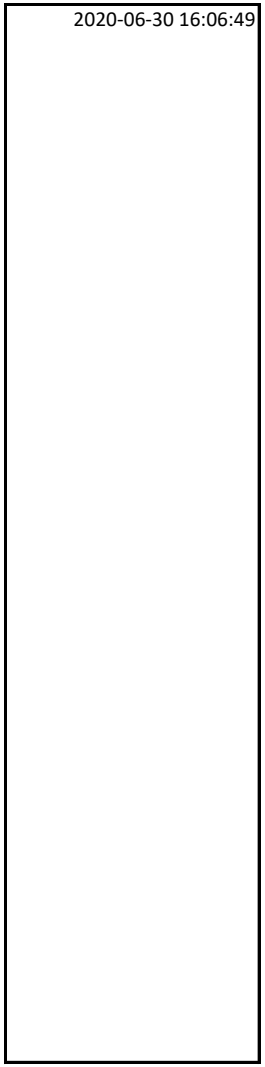
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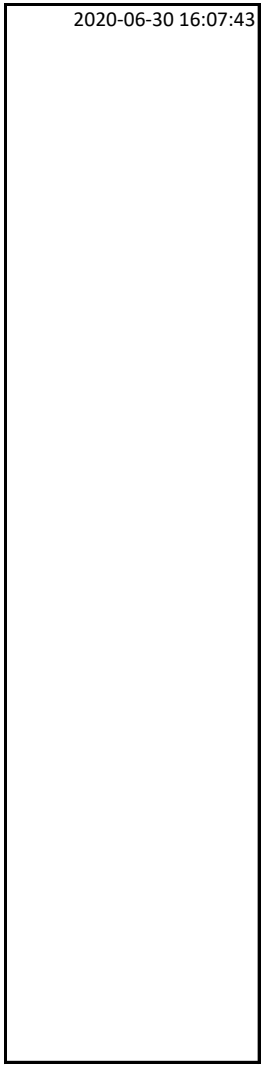
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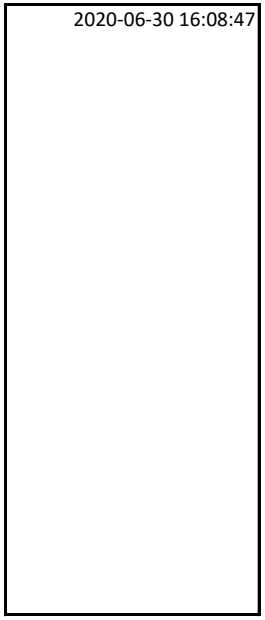
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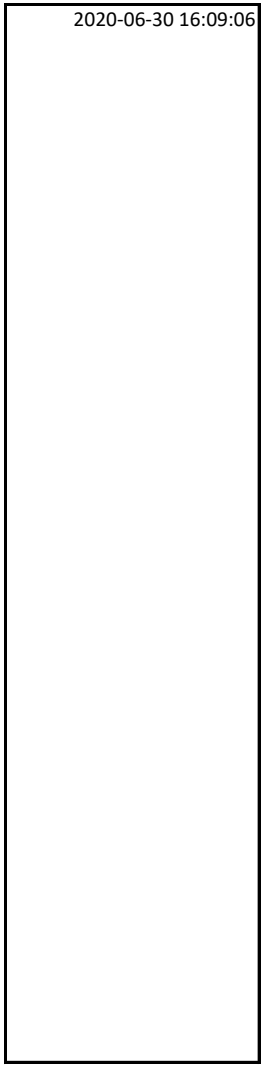
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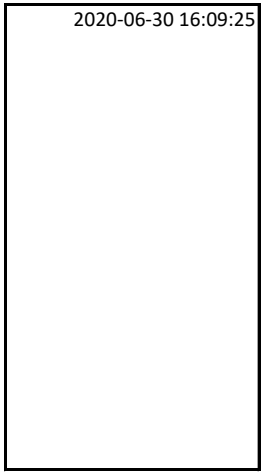
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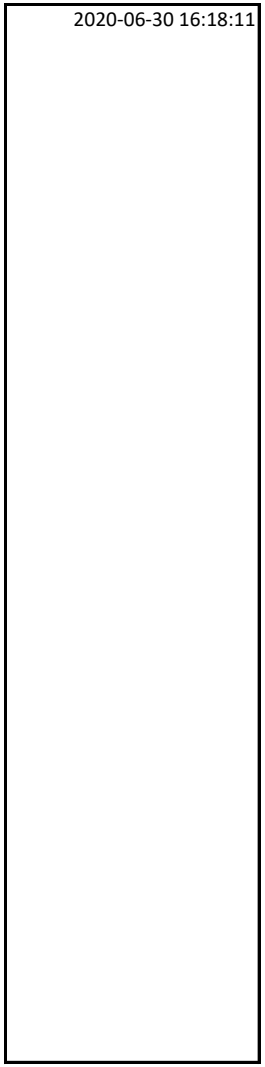
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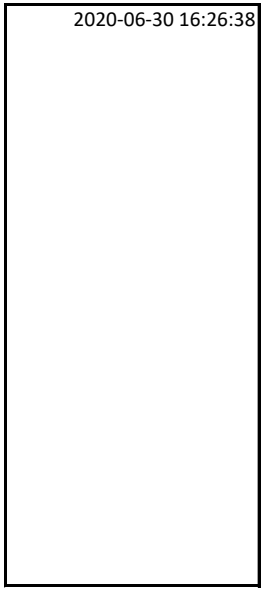
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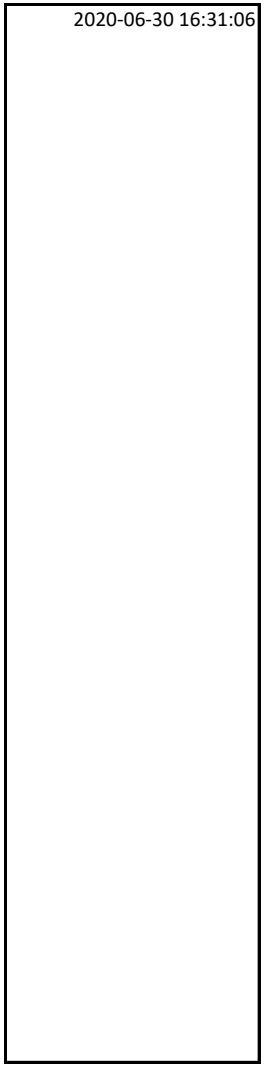
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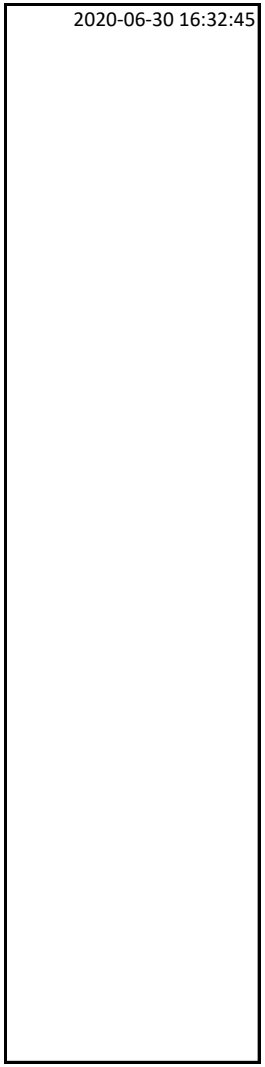
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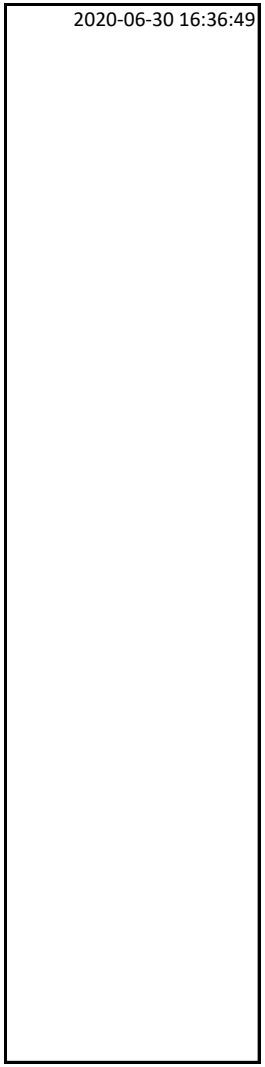
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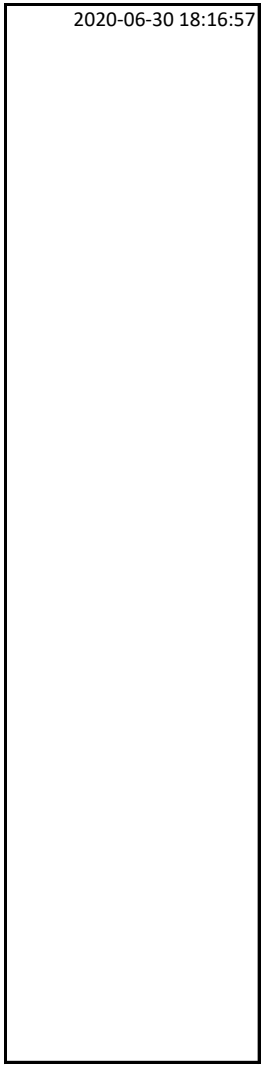
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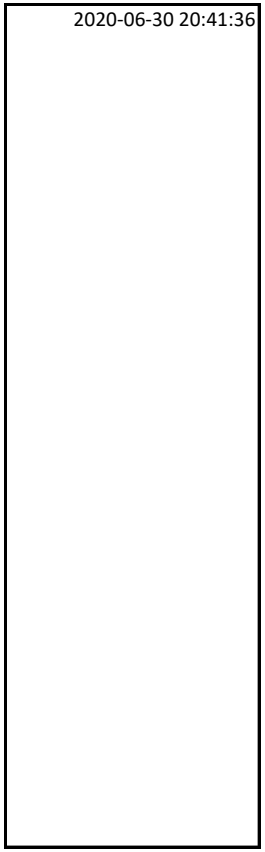
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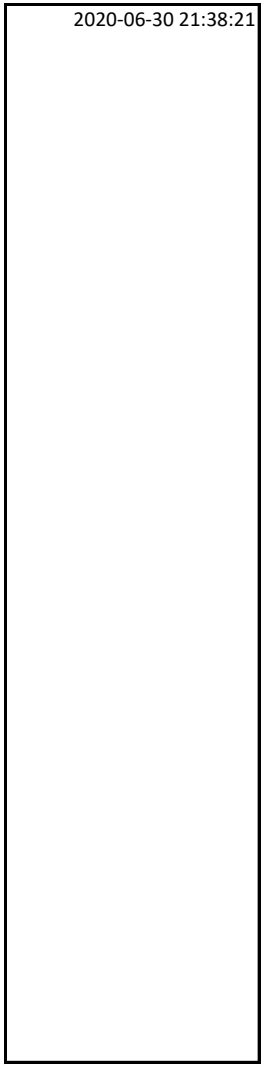
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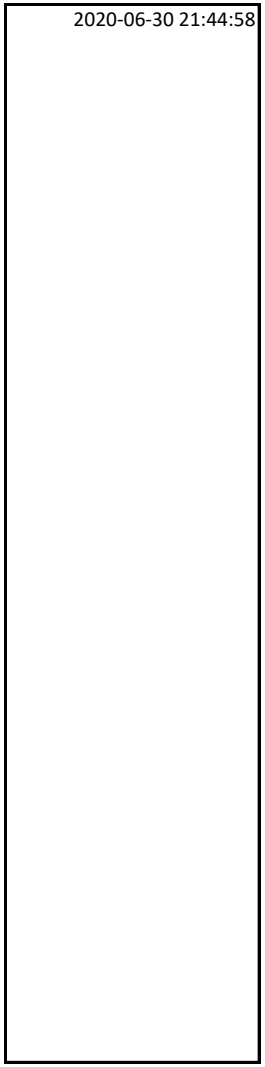
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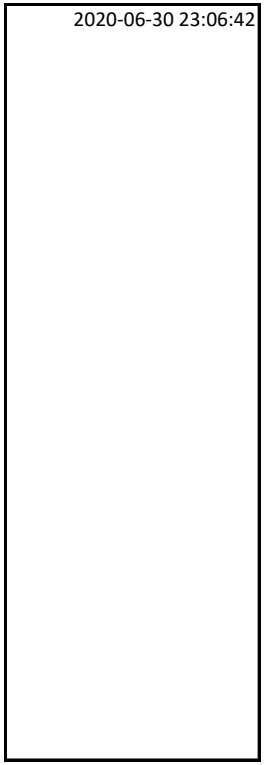
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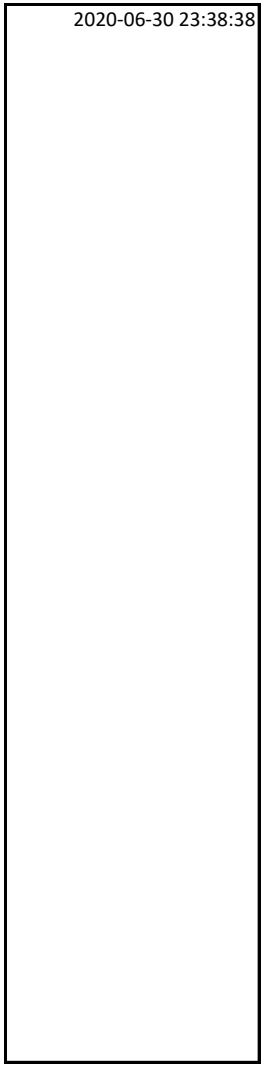
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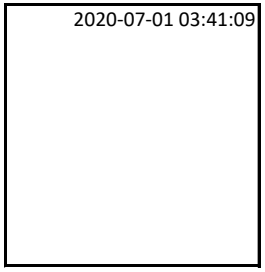
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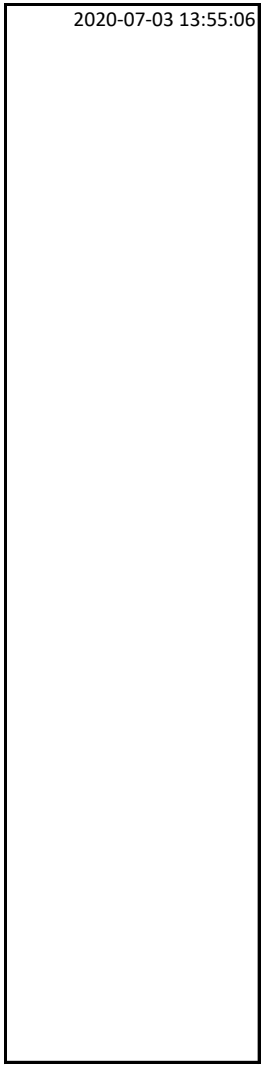
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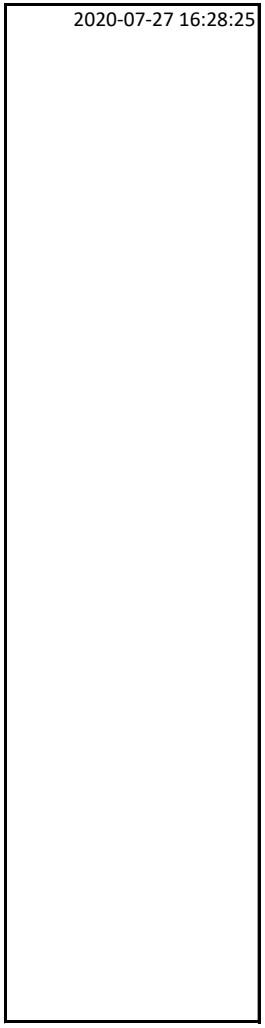
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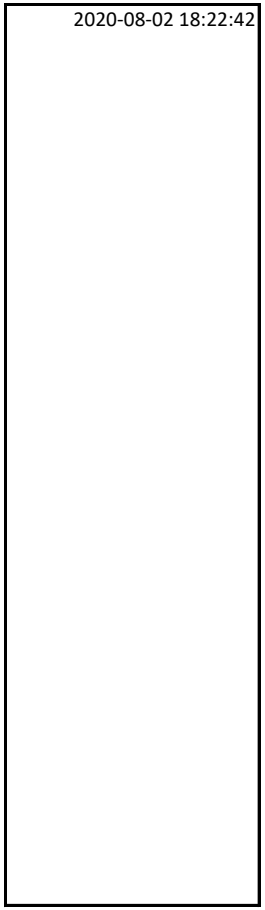
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