NCEA Review and Maintenance Programme – 2026 updates

Review and maintenance work has been undertaken for all three levels of NZC NCEA for 2026. This pdf document contains the updated assessment materials for **Chemistry and Biology Level 1**. In January 2026 the NCEA website will be updated with these changes for Level 1, and the pdf version will be removed as it will no longer be necessary. For Levels 2 and 3, assessment materials will be updated on TKI in January. For external assessment specifications, refer to the NZQA website.

Subject: Chemistry and Biology
Level 1

Product	What's changed?
Conditions of Assessment across all internal standards	Updated to provide clearer guidance around authenticity.
AS 1.4 91923 Unpacking	Changes made for clarity and consistency to strengthen interpretation of the Achievement Standard.

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NCEA Conditions of Assessment across all internally assessed standards

Subject:	All NZC subjects
Achievement Standard:	All NZC internal Achievement Standards

The Conditions of Assessment across all Level 1 internally assessed standards have been updated to include clearer guidance about authenticity. Any changes to Standard Specific Conditions of Assessment will be shown separately within this document.

Conditions of Assessment
for internally assessed standards

These Conditions provide guidelines for assessment against internally assessed Achievement Standards. Guidance is provided on:

- specific requirements for all assessments against this Standard
- appropriate ways of, and conditions for, gathering evidence
- ensuring that evidence is authentic.

Assessors must be familiar with guidance on assessment practice in learning centres, including enforcing timeframes and deadlines. The NZQA website offers resources that would be useful to read in conjunction with these Conditions of Assessment.

The learning centre's Assessment Policy and Conditions of Assessment must be consistent with NZQA's Assessment Rules for Schools with Consent to Assess. This link includes guidance for managing internal moderation and the collection of evidence.

Gathering Evidence

Internal assessment provides considerable flexibility in the collection of evidence. Evidence can be collected in different ways to suit a range of teaching and learning styles, and a range of contexts of teaching and learning. Care needs to be taken to allow students opportunities to present their best evidence against the Standard(s) that are free from unnecessary constraints.

It is recommended that the design of assessment reflects and reinforces the ways students have been learning. Collection of evidence for the internally assessed Standards could include, but is not restricted to, an extended task, an investigation, digital evidence (such as recorded interviews, blogs, photographs, or film), or a portfolio of evidence.

Effective assessment should suit the nature of the learning being assessed, provide opportunities to meet the diverse needs of all students, and be valid and fair.

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Ensuring Authenticity of Evidence

Authenticity of student evidence needs to be assured regardless of the method of collecting evidence. This must be in line with the learning centre's policy and NZQA's Assessment Rules for Schools with Consent to Assess.

Ensure that the student's evidence is individually identifiable and represents the student's own work. The evidence must be an accurate reflection of what the student independently knows and can do, according to the Standard being assessed. This includes evidence submitted as part of a group assessment, evidence produced outside of class time or without assessor supervision, and evidence produced with any use of generative artificial intelligence tools (GenAI). GenAI use should be carefully considered in the context of the Standard being assessed and its Conditions of Assessment, discussed with students before the assessment, and its use must be acknowledged. For example, an investigation carried out over several sessions could include:

- teacher guidance on the nature and extent of acceptable GenAI use, if any
- assessor observations and conversations
- meeting with the student at set milestones or checkpoints
- the student's record of progress, such as photographic entries or any GenAI prompts used.

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NCEA Unpacking the Standard

Subject:	Chemistry and Biology
Achievement Standard:	1.4 Demonstrate understanding of how the physical properties of materials inform their use
Credits:	5

The intent of the Achievement Standard

The purpose of this Achievement Standard is for ākonga to demonstrate knowledge of the structure and properties of materials (groups of substances which share structural similarities). They will show their understanding of why a particular material is used. This will involve linking the physical properties of materials in context to the underlying submicroscopic structure. Properties should be observable and macroscopic, related to structure at the level of atoms, ions, molecules, and electrons.

This Achievement Standard aligns with the following items of Significant Learning:

- consider how physical properties of matter are affected by the relative strengths of interactions between particles, atoms, ions and molecules
- explore how materials can meet the needs of a sustainable future by relating properties to purpose and use.

Ākonga interact with a wide range of materials in their lives. All of these materials are made up of one or more chemicals, and all of these chemicals are composed of atoms, ions, and molecules. Properties of materials are determined by the arrangement and interactions of these very small particles, of which all matter is made. There are repeatable, predictable patterns in the properties of materials, based on the attractive forces between particles and their arrangement. Understanding the patterns across and the links between properties of materials and the structure and arrangement of their particles, is a key foundational point of chemistry and opens further learning about the material world around us.

This will be useful knowledge for many applications, such as manufacturing, trades, hospitality, and conservation. Ākonga who are continuing their study of the sciences will build further on this foundational knowledge.

Making reliable judgements

As part of the evidence submitted for assessment, ākonga are expected to describe the physical properties of materials, and the matter or particles of which they are made. At lower levels of achievement, use of chemistry language, symbols, and conventions is not required, so long as there is evidence ākonga have an understanding of the properties and uses of materials, based on particle arrangements and attractions between them.

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At higher levels of achievement, ākonga are expected to discuss how the particle arrangement and attractive forces between particles result in the observable properties of a material. Explanations should use chemistry vocabulary, symbols, and conventions, including names and formulae. This will allow ākonga to concisely and accurately show their understanding.

Ākonga do not need to quantify attractive forces but should be able to compare the relative strengths of attractive forces between particles. Attractive forces include covalent, ionic, and metallic bonding, as well as intermolecular forces. Intermolecular forces in molecular compounds can be identified but do not require explanation. Reference to permanent or temporary dipole-dipole attractions is not required.

An explanation of conduction may include why ionic solids do not conduct, but molten or dissolved ions do. Mobile electrons in metals and graphite, and mobile ions in molten or dissolved ionic substances, should be explained. Ākonga should understand why materials with free moving charged particles will conduct electricity, and those without will be non-conductive.

A change of state can be explained in terms of melting and boiling points. It is limited to the relative strength of the attractions between the particles present, and their arrangement in the chemical materials. Details about the nature of these attractions is not expected. Although attractive forces between particles are involved in phase changes, it is assumed that this will have been covered in teaching and learning in prior years, and as such is not assessable. This Achievement Standard focuses on how the properties of matter change as they change state, caused by the particle arrangement and relative strength of attractive forces between particles. For example, ionic solids become electrically conductive when molten, due to the different arrangement of particles in the two states.

Solubility can be explained by considering the relative strength of the attractive forces between the solvent and solute particles. The forces between the solvent and solute particles are stronger in soluble substances than the forces between the solute particles, which breaks the bonds between particles of the solute. Contextual settings could include how different materials react to the presence of solvents, based on the properties of each.

An explanation of density and malleability in metals may include reference to the packing of atoms and their ability to slide past each other without disrupting attractive forces. Discussion of the particle arrangement and attractive forces between them should include reference to electrons that are free to move between atoms that slide past each other when metal bends. Free electrons provide the attractive forces between the metal atoms.

Polymers should be viewed as molecular pure substances — as large molecules made up of long chains or networks of smaller molecules called monomers. Natural polymers include silk, hair, proteins, and DNA, while synthetic polymers include polyethylene, polypropylene and polyester. The type of bond and nature of monomer repeat units have an important effect on polymer properties. Polymers contain strong covalent bonds along the polymer chain and much weaker dispersive forces between the polymer chains. As a result of the different relative strengths of these attractions, polymers can have very useful properties. These properties include flexibility, non-conductivity, malleability, and mouldability. This allows polymers to be used for a range of applications, as an alternative to materials used in the past.

Collecting evidence

Refer to the External Assessment Specifications for further information.

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Possible contexts

Opportunities to seat assessment in scenarios that draw on mātauranga Māori in contexts that are meaningful to ākonga can encourage engagement and create accessible pathways for rangatahi. Incorporating kōrero tuku iho in learning and assessment and linking examples of uses of materials to examples in local pūrākau or tikanga, will create opportunities for use of knowledge as a key to understanding chemistry in the wider world.

Ākonga will explore and understand the physical properties of materials and use chemistry knowledge to explain ways they will behave in various conditions.

A teaching and learning program should include exploration of how the periodic table can be used to classify substances, and to develop understanding of how particles interact, including the relative strength of these interactions and the arrangement of particles.

Ākonga will use knowledge of patterns in physical properties of chemical materials to discuss how materials behave in different contextual uses. For example, the effect of increasing temperature on a metal pot. Reference should be made to the relative strength of attraction between, and arrangement of, particles in the material. Physical properties are determined by observation and measurement.

Centring studies around solids will provide accessible contexts for students, such as metals in a car. However, there is space for more complex physical chemistry, for example, the unique properties of water. Commonly encountered materials are often mixtures or may have aspects of their composition that draw on chemistry above Level 6 of The New Zealand Curriculum: Learning Media, Ministry of Education, 2007. By referring to types of materials, ākonga will be directed to the foundational chemistry aspects underlying a chemical type.

Standard Exclusions

This Standard has one or more exclusions, or Standards that assess the same or similar learning. These Standards are excluded against one another to prevent assessing the same learning twice. You can only use credits gained from one of these standards towards your NCEA qualification.

Find out more about the NCEA Level 1 Exclusions List.

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