

A resource for teachers

NCEA Numeracy Resource Bank

This is a curated list of resources for New Zealand secondary school teachers who are interested in developing their knowledge of numeracy teaching and support learning for the NCEA Co-requisite.

This resource contains:

| Teacher Development and Support Resources | Literacy Strategy Resources |
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| <ul style="list-style-type: none">• The NCEA Co-requisite and the NZC• Teacher resources to support the NCEA Co-requisite• Teacher resources to support Numeracy• Teacher readings and resources• Numeracy Support guides for teachers | <ul style="list-style-type: none">• Developing numeracy vocabulary• Financial Education• Problems and resources using mathematics• Problems and resources using statistics• Problems developing reasoning skills• Self-directed numeracy activities and assessment preparation• Supporting thinking, problem solving, and encouraging students to make evidence-based judgements. |
| Subject specific resources | |
| <ul style="list-style-type: none">• English Health and Physical Education• Learning Languages Science Social Studies• Technology Visual Art | |

Teacher Development and Support Resources

The NCEA Co-requisite and the NZC

| Resource | About this resource |
|--|--|
| Aligning Co-requisite and NZC Numeracy Aligning Co-requisite and NZC Reading Aligning Co-requisite and NZC Writing | An overview of how the NCEA Co-requisite for numeracy, reading, and writing aligns with the new NZC. |

Teacher resources to support the NCEA Co-requisite on [NCEA.ed](https://www.ncea.ed.govt.nz)

| Resource | About this resource |
|---|---|
| Supporting students after co-requisite results | The following information is provided for interpreting and responding to student results from the dedicated co-requisite standards in numeracy, reading, and writing. |
| Understanding the Numeracy Common Assessment Activity Understanding the Writing Common Assessment Activity Understanding the Reading Common Assessment Activity | These resources cover numeracy, reading, and writing. They are designed to help parents and whānau understand the Common Assessment Activity reports sent to students if they do not achieve. These resources also provide suggested activities to support and strengthen students' skills in numeracy, reading, and writing. |

- [Unpacking Co-requisite - Numeracy Outcome 1](#)
- [Unpacking Co-requisite - Numeracy Outcome 2](#)
- [Unpacking Co-requisite - Numeracy Outcome 3](#)
- [Unpacking Co-requisite - Reading Outcome 1](#)
- [Unpacking Co-requisite - Reading Outcome 2](#)
- [Unpacking Co-requisite - Reading Outcome 3](#)
- [Unpacking Co-requisite - Writing Aspect 1](#)
- [Unpacking Co-requisite - Writing Aspect 2](#)
- [Unpacking Co-requisite - Writing Aspect 3](#)
- [Unpacking Co-requisite - Writing Aspect 4](#)

These resources cover numeracy, reading, and writing. They are designed to help teachers understand the NCEA Co-requisite reports and how to unpack them using the recommended support materials. These resources also provide suggested activities to support numeracy and literacy learning for each of the standard outcomes.

Teacher resources to support numeracy on [NCEA.ed](#)

| Resource | About this resource |
|--|--|
| Apply mathematics and statistics in a range of everyday situations - Standard NCEA | The NCEA Co-requisite Numeracy Standard. |
| Approved Standards for Numeracy Commerce 1.1 Approved Standards for Numeracy Geography 1.2 Approved Standards for Numeracy Maths 1.1 | During the transition period (2024-2027), students can achieve the NCEA Co-requisite using either the six dedicated standards or around 130 approved literacy and numeracy-rich standards that are available across a range of subjects. |
| Planning for learner variability with the Approved Standards | We have developed one-page guides and a PowerPoint presentation to support teachers with planning variability with the approved additional standards. |
| Are your learners ready? NCEA | Knowing when students are ready for the assessment will provide them with the best opportunity to be successful and have a positive assessment experience. Learn more here. |

| Resource | About this resource |
|--|---|
| Case Studies NCEA | Schools are working to adapt their practices to change, support students through the process, and lift numeracy and literacy outcomes for their students. A selection of schools were interviewed from across the country. These case studies provide tangible examples of teaching practice. |
| Effective Practices to Support Numeracy | Effective classroom practices aimed at enhancing numeracy in every classroom, regardless of subject. |
| Effective Relationships | Every school leader, teacher, student, and whānau member has a role in the development of literacy. By considering how everyone can work in a connected and coherent way, numeracy learning can thrive within and beyond educational settings. |
| Kaiako Numeracy Action Plan | An action plan designed to help schools plan for the NCEA Numeracy standards. |
| Numeracy - Learning NCEA | NCEA Numeracy supports students to develop a level of numeracy knowledge and skills to engage successfully with all the learning areas of the New Zealand Curriculum. Learn more here. |
| NCEA Literacy and Numeracy Resources: School Leaders NCEA Literacy and Numeracy Resources: Students and whānau NCEA Literacy and Numeracy Resources: Teachers-Kaiako | Our resource guides have organised our collection of numeracy and literacy resources for easy use by school leaders, teachers, whānau, and students. |

| Resource | About this resource |
|--|---|
| Targeted Support Materials for Additional NCEA Literacy and Numeracy-rich Standards NCEA | <p>During 2025, Evaluation Associates developed online Professional Learning and Development (PLD) resources (self-directed & guided) to provide targeted literacy/te reo matatini and numeracy/pāngarau support to schools.</p> <p>These recorded webinars, slide decks, and resources are aimed at helping schools to accelerate the literacy and numeracy skills of students, so they are ready for the co-requisite.</p> <p>Topics include: Accelerating literacy and numeracy using the science of learning practices Targeted support and acceleration - Numeracy Literacy and Numeracy Readiness Quality assessment practices Leading the engagement with NCEA Co-requisite</p> <p>(The above are links to PowerPoints for the webinars. To access the webinars, click on the main menu item: Targeted Support Materials for Additional NCEA Literacy and Numeracy-rich Standards NCEA.)</p> |
| TE MANU KA RERE Numeracy 10 lessons | <p>An approach to targeted support for numeracy learning for small groups, to support accelerated learning progress, and achievement in the NCEA Numeracy Common Assessment Activity (CAA), co-requisite assessments.</p> |

Teacher Readings and Resources

| Resource | About this resource |
|--|---|
| Developing Mathematical Inquiry Communities Education Counts | <p>Developing Mathematical Inquiry Communities is a model of ambitious mathematics teaching founded in equity which incorporates an advanced form of complex instruction. Learn more in this article.</p> |
| Mathematics site Mathematics Arc | <p>Resources to support planning, teaching and assessment in mathematics and improve outcomes in mathematics classrooms in Victorian schools.</p> |

| Resource | About this resource |
|---|--|
| Literacy and Numeracy Teaching and Learning - Effective Teacher Practices | Effective Teacher Practices - You Tube video. |
| Webinar - Teaching and Learning Module | Improving literacy and numeracy outcomes for students - You Tube video. |
| Scaffolding practices for effective numeracy teachers | Effective teachers use a range of scaffolding practices that support the students in their learning process. 12 scaffolding practices are listed here. |
| Building towards a thinking classroom - CensusAtSchool New Zealand | Tom Lin's (Epsom Girls Grammar School) workshop had participants create 'hooks' to improve students' curiosity and engagement. The workshop covered WHY, WHAT, and HOW to take small, easy steps in creating your own mathematical thinking classroom. |
| Exploring our class data 2021 | This activity is designed to support students exploring the class data that the teacher can access following their students undertaking the 2021 CensusAtSchool survey. |
| Glossary page Mathematics and statistics - Senior Secondary | A glossary of statistics terms. |
| Jo Boaler: The Importance of Brain Science and Mindset to Mathematics Teaching and Learning | We are in the midst of a revolution, in the science of the brain and learning. New knowledge from brain science is showing a clear path for mathematics learning, that is both exciting and inspiring for teachers. Learn more in this presentation. |
| Provide reading and writing supports for numeracy in NCEA Inclusive Education | Scaffold learners to find the "mathematical and statistical clues" in the context of the question. |

Numeracy Support Guides for teachers

| Resource | About this resource |
|---|---|
| Conversions Questioning Transformations Calculating Averages | Quick reference guides to support teachers when teaching numeracy topics. |

Subject-specific Resources

English

| Resource | About this resource: | This resource supports: |
|---|--|--|
| How to write 100 trillion poems | This Numberphile resource gets students to play around with the concept of combinations of lines of poems by illustrating a way to write a few lines to create many different poems. | Learners to work with whole numbers up to billions, fractions, decimals to 3 places, percentages, and integers |

Health and Physical Education

| Resource | About this resource: | This resource supports: |
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| DataFit | DataFit is about helping students to improve their understanding and confidence in physical activity and the data associated with personal activity. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |
| Information is beautiful | This resource is a selection of infographics and visuals which show the data of a range of topics. The topics: Science, health and food and drink are relevant to Health. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |
| Working with Data Analysis Tools | Here students will explore and analyse health data and extract insights to share with their class. The unit outlines two lessons which are explained and link to all relevant resources. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |

Learning Languages

| Resource | About this resource: | This resource supports: |
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| Numeracy Language Teaching Ideas | This resource gives a list of ideas which language teachers could use to incorporate numeracy into their teaching through games and activities that encourage both second language speaking and numeracy concepts. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |

Science

| Resource | About this resource: | This resource supports: |
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| Blue Whales | Blue Whales is a resource that takes students through an analysis of blue whale data. This collection of videos, text passages and interactive data graphs will light up minds as students explore data that has been collected to explain what goes on when a blue whale is under the surface of the ocean. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |
| NRICH Science | NRICH provides thousands of free online resources for all school-aged students. They aim to enrich and enhance the learning by developing problem solving and thinking skills. The problems are challenging, inspiring, and engaging across a range of meaningful contexts. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |
| Robert Kaplinsky Science | RobertKaplinsky.com is a series of contextual problems for students to work on and explore. They use a Problem-Solving Framework to guide students through problems. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |

Social Sciences

| Resource | About this resource: | This resource supports: |
|---|---|---|
| Figure NZ | This is a free resource that allows students and teachers to explore data about New Zealand. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |
| Gapminder | Gapminder identifies systematic misconceptions about important global trends and proportions. Teachers can support students to read data and relate it to social studies learning. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |
| Litter Intelligence | This resource can be used alongside/while teaching a place and environment Social Studies topic. For example, when looking at rāhui and sustainability. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |
| Oxfam Bringing data to life | Aimed at 7 to 16-year-olds, these resources help students create, compare and explore different graphs. They also tell stories, for example, women producing honey for income in Ethiopia. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |
| Sorted in Schools | Sorted in Schools, Whai Hua - Kia Ora, is a financial capability teaching and learning programme. Resources are free. Teachers can filter resources by learning area, level, and theme. Available for both English Medium and Māori Medium Education. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |

Technology

| Resource | About this resource: | This resource supports: |
|---|---|---|
| NRICH Technology Activities | In these resources, maths is used as a tool to explore some aspect of design technology. These problems/activities allow for numeracy to be explored in the context of design technology. | Learners to formulate mathematical and/or statistical approaches to solving problems in a range of meaningful situations Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |
| Robert Kaplinsky Technology | RobertKaplinsky.com is a series of contextual problems for students to work on and explore. They use a Problem-Solving Framework to guide ākonga through problems. | Learners to explain the reasonableness of mathematical and statistical responses to situations |

Visual Art

| Resource | Purpose | Overview of the task |
|----------------------------------|---|--|
| Optical Art | The Optical Art Task combines Art, Mathematics and Design. Students are asked to work with and create optical illusions, think about the mathematics demonstrated, and then pose mathematical questions. | Learners to formulate mathematical and/or statistical approaches to solving problems in a range of meaningful situation |
| Tetrahedral Boat | The Tetrahedral Boat video works through the art of Conrad Shawcross and his works with tetrahedrons. It is an exploration of how he worked with the shapes and by discovering some properties of the tetrahedral shape, was able to understand how to work with them more efficiently. | Learners to formulate mathematical and/or statistical approaches to solving problems in a range of meaningful situations |

| Resource | Purpose | Overview of the task |
|--|---|--|
| What does numeracy in visual arts look like? | This one-page resource outlines what elements of numeracy are already used in many Visual Arts lessons. | Learners to understand and use the spatial properties and representations of objects |

Numeracy Lesson Resources

Developing numeracy vocabulary

| Resource | About this resource: | This resource supports: |
|--|--|---|
| Common Core Math Vocabulary Bank | This resource gives a list of ideas which language teachers could use to incorporate numeracy into their teaching through games and activities that encourage both second language speaking and numeracy concepts. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |

Financial Education

| Resource | About this resource: | This resource supports: |
|-----------------------------------|--|---|
| Sorted in Schools | Sorted in Schools, Te whai hua – kia ora, is a financial capability teaching and learning programme. Resources are free. Teachers can filter resources by learning area, level, and theme. Available for both English Medium and Māori Medium Education. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |

Problems developing reasoning skills

| Resource | About this resource: | This resource supports: |
|--|--|---|
| Being Curious | Being Curious - NRICH provides many problem-solving activities for students. The problems involve different levels of difficulty and require different styles of thinking. They also provoke curiosity within students to ask and investigate further questions. | Learners to consider and explain the reasonableness of solutions, outcomes, and approaches while reflecting on how they were chosen |
| Puzzle Calendars | Mathigon provides many problem-solving activities for students. The problems involve different levels of problems and require different styles of thinking. | Learners to consider and explain the reasonableness of solutions, outcomes, and approaches while reflecting on how they were chosen |
| Which One Doesn't Belong | Which One Doesn't Belong asks students to identify why an item(s) is different from the other items being grouped together. | Learners to explain the reasonableness of mathematical and statistical responses to situations |
| Would You Rather | Would You Rather is a series of problems giving alternate solutions to the problem and then asking students to calculate and justify which option is the best. | Learners to use critical judgements in relation to statements based on mathematical and statistical ideas. |

Problems and resources using mathematics

| Resource | About this resource: | This resource supports: |
|----------------------------|--|---|
| Maths Week | The Maths Week website has many useful challenges and fun games. These are broken down into curriculum levels (1-5). The website also advertises dates for yearly Math's Week events and explains how to get involved. | <p>Learners to formulate mathematical and/or statistical approaches to solving problems in a range of meaningful situations</p> <p>Learners use mathematics and statistics to meet the numeracy demands of a range of meaningful situations</p> |

| Resource | About this resource: | This resource supports: |
|------------------------------------|--|---|
| Robert Kaplinsky | RobertKaplinsky.com is a series of contextual problems for students to work on and explore. They use a Problem-Solving Framework outlined to guide students through problems. | Learners consider and explain the reasonableness of solutions, outcomes, and approaches while reflecting on how they were chosen |
| TED-Ed Mathematics | TED-Ed is a series of short videos posing statistical problems in contextual based fun ways. Each video also has a solution to the problem and extension parts included. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |
| Youcubed | Youcubed tasks are a series of activities that encourage students to explore and play with problems. The problems are quite varied in the way they can be used with some using specific mathematics or statistics knowledge, while others are quite general. | Learners to consider and explain the reasonableness of solutions, outcomes, and approaches while reflecting on how they were chosen |

Problems and resources using statistics

| Resource | About this resource: | This resource supports: |
|--------------------------------|---|---|
| Being Curious | Being Curious - NRIC provides many problem-solving activities for students. The problems involve different levels of difficulty and require different styles of thinking. They also provoke curiosity within students to ask and investigate further questions. | Learners to consider and explain the reasonableness of solutions, outcomes, and approaches while reflecting on how they were chosen |
| CensusAtSchool | Census At School hosts an array of resources to assist in the teaching and learning of statistics. Resources range from teaching plans, classroom activities, and statistical tools. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |

| Resource | About this resource: | This resource supports: |
|---|--|---|
| Problem Solving NZMaths | NZ Maths provides many problem-solving activities for students to attempt. The problems involve different levels of problems and require different styles of thinking. | Learners to consider and explain the reasonableness of solutions, outcomes, and approaches while reflecting on how they were chosen |
| TED-Ed Statistics | TED-Ed is a series of short videos posing statistical problems in contextual based fun ways. Each video also has a solution to the problem and extension parts included. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |

Self-directed numeracy activities and assessment preparation

| Resource | About this resource: | This resource supports: |
|---|--|---|
| Assessment Resource Banks | The Assessment Resource Banks (ARBs) are a collection of educational articles, conceptual maps, and formative assessment resources in Maths, English and Science for use with New Zealand students working at levels 1-5 of the New Zealand Curriculum (2007). The Maths assessments can provide useful insights into learners' numeracy levels. | Learners to formulate mathematical and/or statistical approaches to solving problems in a range of meaningful situations Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |
| Numeracy on Pathways Awarua | Pathways Awarua helps students to be self-directed in their learning as they progress along pathways at their own pace, starting at places that match their current capability. | Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations |

| Resource | About this resource: | This resource supports: |
|--|--|--|
| NZAMT Numeracy Questions 2023 NZAMT Numeracy Questions 2022 | <p>This resource is a bank of numeracy questions created by the New Zealand Association of Mathematics Teachers. These questions provide material for students to use all process ideas of numeracy.</p> | <p>Learners to formulate mathematical and/or statistical approaches to solving problems in a range of meaningful situations</p> <p>Learners to use mathematics and statistics to meet the numeracy demands of a range of meaningful situations</p> <p>Learners to explain the reasonableness of mathematical and statistical responses to situations</p> |
| Past numeracy CAA assessments on NZQA | <p>Students can access all past digital external assessments from NZQA, including those with copyright content, from their student login under 'Find past digital exams'. Here students can practice the most recent Common Assessment Activity (CAA). No feedback is given on practice attempts. Note that students require a NSN (National Student Number) to practice past digital exams.</p> | <p>Digital assessment preparation</p> |
| Preparing for Digital Assessment as a Student | <p>This is an NZQA webpage which provides information and resources to help students prepare for the numeracy Common Assessment Activity (CAA) and the digital nature of the assessment.</p> | <p>Digital assessment preparation</p> |

Supporting thinking, problem solving, and encouraging students to make evidence-based judgements

| Resource | About this resource: | This resource supports: |
|---|---|--|
| Break It Down | This is a step-by-step problem-solving support which can help students to break down a word problem they are trying to solve. | Learners to formulate mathematical and/or statistical approaches to solving problems in a range of meaningful situations |
| Data Detective Poster | This is a poster which outlines the Problem, Plan, Data, Analysis, Conclusion (PPDAC) steps when capturing and evaluating data effectively. | Learners to formulate mathematical and/or statistical approaches to solving problems in a range of meaningful situations |
| 100 Questions that Promote Mathematical Discourse | This is a teacher facing resource that provides teachers with a bank of questions that will allow them to probe student thinking when they are sharing ideas, engaging in problem solving, understand problems, and evaluate their processes. | Learners to explain the reasonableness of mathematical and statistical responses to situations |
| Sentence Starters | This resource provides phrases which students can use to start sentences when they are communicating their thoughts and ideas. | Learners to explain the reasonableness of mathematical and statistical responses to situations |
| Talk Moves | Posters which identify the 8 Talk -Moves (Revoice, Flexibility, Justify, Reasoning, Elaborate, Revise Your Thinking, Repeating, Wait) teacher prompts to stimulate discussion. | Learners to explain the reasonableness of mathematical and statistical responses to situations |
| The Four-Step Problem Solving Process | This resource outlines four steps to solving a problem. | Learners to formulate mathematical and/or statistical approaches to solving problems in a range of meaningful situations |



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