



2022 Report Toi Tātai/Pāngarau

Paerewa 32412: Te whakamahi pāngarau me te tauanga hei whakatutuki i ngā hiahia pāngarau o ngā pūāhua whai take

Summary of the Pilot Assessment

There were 254 students across 11 schools who participated in the Common Assessment Activity (CAA). There were no portfolios submitted for marking.

Candidates who achieved:

- were clear about deconstructing the problem/situation to identify the mathematics
- know how to calculate different problems and number operations
- achieved across all 4 outcomes
- can read and interpret graphs and different representations
- understand whether a problem is a language, mathematics, or contextual question
- understand the specialised mathematics language and terms.

Candidates who did not achieve:

- struggled to interpret charts and types of graphs, for example, the labels and ideas of statistical and algebraic graphs
- struggled to apply the range of number operations
- were unsure whether the question was related to language, mathematics, or context
- struggled to unpack problems, perhaps due to language proficiency.

Outcome 1: Formulate a pāngarau approach to solving problems in a range of meaningful situations

This outcome required ākonga to select an appropriate operation, representation, variable, and/or method to solve the problem.

Ākonga who **met this outcome** were able to:

- calculate all costs, plus calculate using multiplication and division the price of things using the correct unit.
- identify the net for the correct 3-D shape
- rotate an object by a given degree
- collate all the prices to find the final calculation.
- identify the correct graph to accurately display data
- and work out the cost per unit by knowing the final cost.

Ākonga who were **unable to meet** this outcome:

- found it difficult to translate what is a non-mathematical concept in the mind to a mathematical process required to solve a problem
- were unable to convert one form of measurement to another.



Outcome 2: Use mathematics and statistics to address the numeracy demands of a range of meaningful situations and explain the reasonableness of mathematical and statistical responses to situations

This outcome required ākonga to use mathematical/statistical procedures that were appropriate to the situation and outline whether the procedures were reasonable to the situation.

Ākonga who **met this outcome** were able to:

- order decimals and identify the different fraction representations
- interpret linear graphs, tables and composite bar graphs.
- calculate the volume of a rectangular prism.

Ākonga who were **unable to meet** this outcome:

- could not read and interpret linear graphs, tables and composite bar graphs.

Outcome 3: Communicate mathematically in te reo Māori appropriate to the situation

This outcome required ākonga to communicate in a variety of ways using specialised terms, syntax and semantics appropriate to the situation.

Ākonga who **met this outcome** were able to:

- analyse data shown in a composite bar graph

Ākonga who were **unable to meet** this outcome:

- struggled to read and understand different graphs

Outcome 4: Identify the relevant socio-cultural practices underpinning the mathematical situation.

This outcome required ākonga to identify values, beliefs, relationships, and social practices underpinning numeracy situations.

Ākonga who **met this outcome** were able to:

- explain the significance of Matariki to Māori
- appreciate significant cultural traditions of Māori
- explain how the sun affects growing food in the garden.

Ākonga who were **unable to meet** this outcome:

- struggled to apply social-cultural considerations to solving mathematics problems



Guidance for teachers

The marking team recommends that kaiako focus on the following:

- The change in focus from purely mathematical content and process outcomes now includes outcomes for reo pāngarau and socio-cultural considerations.
- Provide rich learning experiences for ākonga that support mātauranga Māori and socio-cultural contexts, such as Matariki.
- Allow ākonga to master the use of simple calculators. It was not clear that ākonga understood this in the CAA because the challenge in some of the questions was not necessarily working out the answer (procedure/calculation) but knowing what it was to be calculated.
- Ensure that the appropriate cultural contexts and mātauranga are familiar to ākonga.
- This assessment is for students who have attended full immersion education as the assessment is written only in te reo Māori. Therefore, this assessment will be too difficult for students who are not proficient in te reo Māori.

Recommended Guidance for Students

It is recommended that students focus on the following:

- read and interpret charts and types of graphs for example to name the x and y axis
- apply correctly the number operations for whole numbers, decimals, percentages and ratios
- know about and apply the transformations within real contexts
- read and interpret different representations and equipment for direction and location.