

## Briefing Note: Literacy and Numeracy Assessment

<b>Date:</b>	28 September 2022	<b>Priority:</b>	Medium
<b>Security</b>	In confidence	<b>CR No:</b>	CR25307
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### Purpose

1. To update you on the new literacy and numeracy assessments including the upcoming results release.

### Background

2. Pilot assessments for the new literacy and numeracy assessments were conducted in schools at the end of June 2022.
3. Results were released to individual students and their schools on 29 August 2022. The Ministry of Education and NZQA are preparing to release results for the full participating cohort in the week beginning 17 October 2022.
4. In preparation for the release, a pack (see Appendix A) containing the documents listed below is provided for your information:
  - a diagram showing the relationship between the Learning Progressions Framework, the standard, the assessment items, the marking, and the evaluation
  - a table displaying how the standard is derived from a relevant framework and reflected in the assessment items
  - a blueprint for one of the assessments which displays how the writing team present the standard and map out the assessment (including such concepts as determining how many items are required to provide opportunities for students to engage)
  - the 2021 assessment report
  - the 2022 June summary assessment reports
  - the 2022 June assessments (NZ Curriculum).

### Recommendations

5. It is recommended that you:
  - a. **note** results for the full cohort participating in the June 2022 literacy and numeracy pilot assessments will be released in the week beginning 17 October 2022;

- b. **note** information contained in the pack of materials provided as background information in preparation for the release of results.



**Dr Grant Klinkum**

Chief Executive

28 September 2022

**Hon Chris Hipkins**

Minister of Education

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**Hon Jan Tinetti**

Associate Minister of Education (Schooling)

08/11/2022



**Mana Tohu Mātauranga o Aotearoa**  
New Zealand Qualifications Authority

# **CR25307 Literacy and Numeracy Assessment**

## **Appendix A**

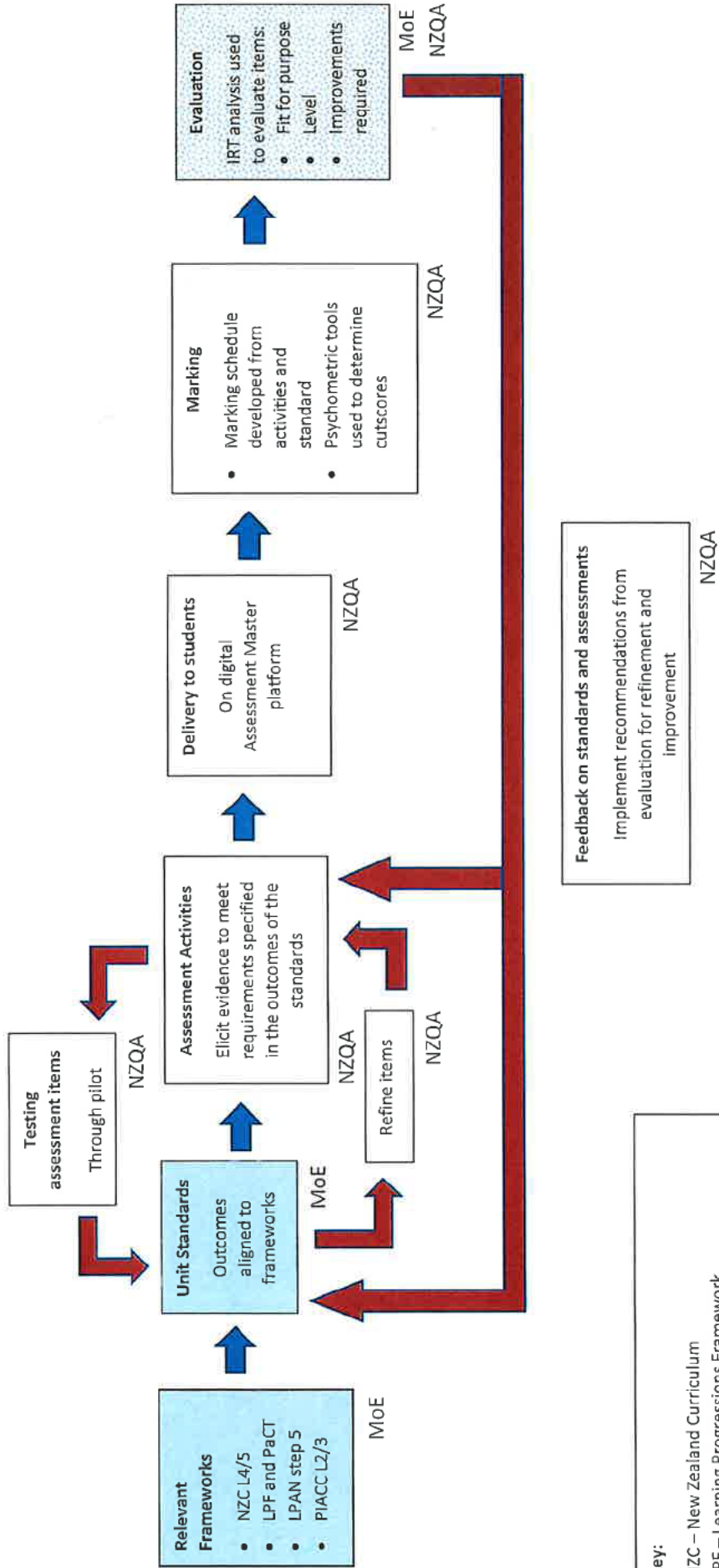
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# 1. Literacy and Numeracy Process: End-to-End

# Literacy and Numeracy

## Assessment Process – End-to-End



**Key:**  
 NZC – New Zealand Curriculum  
 LPF – Learning Progressions Framework  
 PaCT – Progress and Consistency Tool  
 LPAN – Learning Progressions for Adult Numeracy  
 PIACC – Programme for the International Assessment of Adult Competencies

## 2. Progression from the Learning Progressions Framework to Assessment Activity

## Progression from the Framework to the Unit Standard, reflected in the Assessment Activity

Literacy is a foundational skill that enables access to further learning, develops important life skills, and allows people to fully engage in work and in their communities. NCEA Literacy covers foundational literacy. This is approximately Level 4/5 of the New Zealand Curriculum, whereby a student has full control over level 4 and is ready to work at Level 5. This table shows the development of the unit standard from the relevant literacy framework, and how this is reflected in the assessment activity, designed to elicit student evidence that meets the requirements of the standard.

<b>Learning Progression Framework: Reading</b>	<b>Standard: Read written texts to understand ideas and information</b>	<b>Common Assessment Activity: Reading</b>
Making sense of text: using a processing system	Read to make sense of written texts: process information and identify important ideas	Comprehension Identify important ideas Process information
Making sense of text: using knowledge of text structure and features	Read to make sense of written texts: make links within texts using text structures and language features	Text language features Link text/language features to text meaning
Making sense of text: vocabulary knowledge	Read to make sense of written texts: identify the meaning of vocabulary essential to understanding the text	Vocabulary Identify meaning of vocabulary
Making sense of text: reading critically	Read written texts with critical awareness: identify and make links between the audience, purpose, and writer point-of-view; evaluate the reliability and credibility of the text and/or writer	Reading critically Evaluate reliability/credibility of the text and/or writer
Reading to organise ideas and information for learning	Read written texts for different purposes: Select and evaluate the relevance of texts according to the reader's purpose	Locate information (in relation to text purpose) Link writer's purpose and/or audience
Acquiring and using information and ideas in informational texts	Read written texts for different purposes: Locate and use information across a range of texts according to the reader's purpose	Locate and use information across a range of texts
Reading for literary experience	Read written texts for different purposes: Select and evaluate the relevance of texts according to the reader's purpose	Select and evaluate relevance of text according to reader's purpose



### 3. Assessment Blueprint example

CAA Numeracy

Outcomes	Whole numbers	Percentage Fractions Decimals	Rates and Ratios	Integers Powers	Linear	Symmetry and Transformation	2D-3D	Location and Navigation	Measurement	Statistics and data.	Probability	Target Percentage
1.1 Select an appropriate operation, representation, variable, and/or method to meet the mathematical and/or statistical demands of situations.	8a, 9a, 9b, 1c, 4a, 5a, 5b, 6c	2c, 3c, 3b, 4b, 4c, 5b, 6c	7a, 7b, 7c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	30% 50% 20%
1.1 Select an appropriate operation, representation, variable, and/or method to meet the mathematical and/or statistical demands of situations.	8a, 9a, 9b, 1c, 4a, 5a, 5b, 6c	2c, 3c, 3b, 4b, 4c, 5b, 6c	7a, 7b, 7c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	10a, 10b, 5a, 5b, 5c	33.33% 36.67% 30.00%

1.1 Select an appropriate operation, representation, variable, and/or method to meet the mathematical and/or statistical demands of situations.

2.1 Select and use mathematical and/or statistical procedures that are appropriate to the situations.

3.1 Demonstrate the appropriateness of responses in relation to situations.

Target Percentage	Running percentage
25%	43.33%
10%	10.00%
6.67%	3.33%
20%	26.67%
5%	0.00%
10.00%	10.00%

Frequency Table

Outcome	1	2	0	1	0	1	1	0	0	2	2	0	0	0	0	10
Outcome 1	4	0	0	1	0	0	0	0	0	1	1	1	0	0	0	11
Outcome 2	1	1	0	1	1	0	0	0	0	1	0	0	1	1	0	9
Outcome 3	5	3	0	3	1	1	1	0	0	2	3	1	2	0	0	30

- Possible Items
- 1. Hei (eggs)
  - 2. Making muffins
  - 3. Enough sleep?
  - 4. Trust Advertising
  - 5. Zoi in the big Air
  - 6. Air Koluuku
  - 7. Buying bananas
  - 8. Accidents in the workplace
  - 9. Kuako (Godwits)
  - 10. Sleepout
- Measurement and Geometry
- Step function?
  - Multiplication addition percentages
  - Fractions, relationships, measurement
  - Conversion of length, speed (rate), direction
  - Direction, scale, Claims about speed
  - Average weight,
  - Number, measurement, ratio

## 4. June 2022 Overview of results: NCEA Literacy and Numeracy



## Overview of results: NCEA Literacy and Numeracy Assessment

The purpose of this report is to provide a high-level snapshot of areas of strengths and weakness following the first assessment event of the NCEA Literacy and Numeracy Pilot in 2022. A more detailed Assessment Report will be released following the second assessment event.

The first assessment event took place on 27 June – 1 July for New Zealand and 11 – 15 July for Realm Countries. The assessments involved an online Common Assessment Activities, each of which learners completed in a single sitting with no time limit.

The following guidance has been collected from the markers of the assessment. The markers are an experienced and highly proficient group of teachers and have the unique experience of marking numerous scripts each. Below is their advice following the first assessment event for 2022.

### Literacy Writing

#### **Students whose writing was clearly at or above the standard demonstrated strengths in:**

- planning their answers, which generally resulted in a well-structured response to the issue
- formulating ideas and using a range of details and evidence to support their key points
- shaping and structuring the overall piece of writing by using topic sentences
- paragraphing their writing (or indicating an implied use of paragraphs through statements / change in ideas, appropriate flow of ideas or logical sequencing of ideas)
- using language for effect (e.g., the use of rhetorical devices, appropriate levels of formality and tone, punctuation, and syntax control)
- utilising prior knowledge of their area, curriculum knowledge and cultural knowledge to answer the questions.

#### **Students whose writing was below the standard demonstrated that they had difficulty in:**

- reading/following the instructions so that they answered the questions as required
- planning their answers so that the content followed a logical structure (e.g., a lack of paragraphing or logical sequencing of ideas)
- understanding that writing for different audiences and purposes required different language choices (e.g., appropriate levels of formality, such as tone and vocabulary choices, and an awareness of the requirements of different text types)
- editing their writing to eliminate syntax errors, particularly run on sentences
- proofreading for grammar, spelling, and punctuation errors.

#### **Markers recommend that teachers focus on:**

- developing students' understanding of the difference between text types and text forms
- providing exposure to a range of text types for different purposes and audiences
- ensuring an understanding of the need to plan and structure ideas
- organising and developing ideas for a particular purpose or effect using the characteristics and conventions of a range of text types
- deliberately choosing content and language to communicate precise meaning for effect



- developing knowledge and understanding of basic punctuation, spelling, and grammar
- developing understanding of how punctuation and grammar make meaning
- building flexibility in using different sentence types (simple, compound complex)
- proofreading writing for clarity (at the level of the whole text, the paragraph, and the sentence) and accuracy.

**NB. Careful consideration must be given to simply re-entering students for the second assessment because they didn't achieve in the first one. Ensure students have undergone sufficient additional teaching to address areas of weakness and are well prepared before they have a further attempt at another assessment. Helping students make progress in their learning is the most important thing.**

### Literacy Reading

**Students whose reading was clearly at or above the standard demonstrated strengths in:**

- reading the question carefully to understand their purpose for reading
- using appropriate processing and comprehension strategies to make sense of a range of texts created for different audiences and purposes
- understanding that writers make specific language choices to suit their purpose and audience
- understanding how language patterns and word families can help them make sense of unfamiliar text/s
- recognising information that is appropriate and/or relevant for their specific reading purpose
- using strategies to compare and evaluate information across or within different texts.

**Students whose reading was below the standard demonstrated that they had difficulty in:**

- using a range of reading strategies to suit different purposes
- understanding how to identify a writer's purpose
- making and recognising connections and inferences within and across texts
- locating, using and/or evaluating information for a specific purpose
- evaluating the reliability and credibility of a text/writer for a specific purpose.

**Markers recommend that teachers focus on developing students':**

- flexibility in using different reading strategies
- ability to select an appropriate reading strategy for the reader's purpose
- understanding of how language features and structures communicate meaning
- understanding of the language features and structures used in a wide range of written texts
- understanding of how different text features (including visual) can be combined with written text to enhance meaning
- ability to identify particular points of view within texts and how writers can position a reader
- ability to recognise the characteristics and conventions of range of text types and how they contribute to and affect meaning



- strategies to compare and evaluate information within and across texts
- wide reading vocabulary, including both general academic words and topic or subject specific words
- strategies to reflect critically on both surface and underlying meanings, including the awareness that words may have more than one meaning.

## **Numeracy**

### **Students whose numeracy was clearly at or above the standard demonstrated strengths in:**

- straight forward calculations involving multiplication and division
- finding averages
- compass directions
- identifying viewpoints

### **Students whose numeracy was below the standard demonstrated that they had difficulty in:**

- proportional reasoning such as application of rates and working with percentages.
- calculations with elapsed time
- interpretation of data displays, particularly dot plots
- interpreting bar charts and histograms
- interpretation of measurements contents, there was confusion among attributes such as lengths and angles, areas and volumes.

### **Markers' reflections across the assessment that may support next steps**

- Connecting the mathematics and statistics used across a range of contexts will help students/ākonga classify situations and transfer their knowledge and skills.
- Multiple representations, including equations, tables, graphs, and diagrams, is an essential part of numeracy in the real world.
- Students/ākonga should be at level 4/5 of the curriculum before participating in these assessments.
- Students/ākonga should be prepared for sitting the assessment with test taking techniques (e.g., using the digital platform, persistence, completing all questions, etc.).
- Preparation also needs to focus on explaining strategies, and justifying positions, using evidence from calculation, data, and information. Students/ākonga need experience with open tasks that have multiple solutions.
- Numeracy is a cross-curricula goal and schools need to take advantage of the potential for numeracy learning in Science, Geography, Art, Technology, and other subjects. The resources recently supplied to schools through the MOE Numeracy site go some way to supporting cross-curricula approaches.
- Students/ākonga need experience with using digital platforms for work and assessment. This includes the use of calculators, with more emphasis on interpreting the language in the question to identify the calculation that is required.
- Parents need support to recognise opportunities to improve the numeracy of tamariki through everyday experiences.



### **Assessing the standard**

The assessment demonstrated that students' /ākonga capability to meet Outcome 3 of the standard was very dependent on the literacy and digital skill for expressing explanations and justifications. This should continue to be a focus for teachers going forward.

5a. 2021 NCEA  
Assessment Report  
Unit Standard 32403  
(Reading)



## 2021 NCEA Assessment Report

### Standard Number 32403: Read written texts to understand ideas and information

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In the Common Assessment Activity (CAA), all three outcomes were assessed by requiring candidates to answer questions based on a range of different text types and contexts. The questions provided candidates with multiple opportunities to produce evidence they could achieve each outcome.

Text types included nonfiction and fiction, and continuous and non-continuous text structures. Some texts included or were combined with aspects of visual texts, such as diagrams/graphs and illustrations.

#### **Outcome 1: requires evidence of the ability to read and make sense of written texts**

This outcome requires candidates to show they can understand the content and ideas in texts that are typical of those they encounter in their learning, work, everyday lives, and communities.

##### **1.1 Process information and identify important ideas.**

This includes using different skills and strategies to understand and make sense of what candidates read. For example, some questions involved the use of skimming and scanning skills to locate information, whereas other questions required close reading to develop a deeper and more precise understanding of the text. As well as identifying the main ideas in a text, candidates were also expected to make connections between parts of a text.

Some candidates did not read the text closely enough to correctly answer the questions or were not able to correctly identify the main ideas or make connections between parts of a text.

##### **1.2 Make links within texts using text structures and language features.**

This includes recognising the different language features and text structures that are used by writers. For example, some questions required knowledge of layout features, such as headings, illustrations, and bullet points; other questions required knowledge of language features such as grammar, tense, vocabulary, and sentence structures. Candidates needed to understand why an author might have used these features and structures in the text for that particular purpose and audience.

Some candidates did not demonstrate sufficient knowledge of text structures and language features and/or how a writer could use them to suit their purpose and audience.

##### **1.3 Identify the meaning of vocabulary essential to understanding the text.**

This includes understanding the meanings of words that are essential to making sense of the text and being able to use strategies to work out the meanings of less familiar words. For example, some texts required candidates to use the clues in the text to help them work out the meaning of unfamiliar vocabulary; some texts required an understanding of word families, common metaphorical phrases and words with multiple meanings.

A few candidates did not appear to have a range of word solving strategies to help them work out meanings of unfamiliar vocabulary.

**Outcome 2: requires evidence of the ability to read written texts with critical awareness**

This outcome requires candidates to show that they can read a text closely in order to develop a deep and precise understanding of both the explicit and implicit meanings of a text. This includes the ability to identify who wrote a text, for whom, why, and whether it may have purposes that are not immediately apparent.

**2.1 Identify and make links between audience, purpose, and writer point-of-view.**

This includes understanding a writer's point of view or opinions, even when it is not explicitly stated. For example, some texts required candidates to understand why a particular title was chosen, or why a particular illustration was included by the writer.

Although many candidates could, for example, identify a writer's point of view and/or link various text features and structures to the writer's purpose, a number of candidates had difficulty in identifying the purpose of a text when it wasn't immediately apparent, e.g., understanding that 'sponsored content' was an advertisement and not just an informational text.

**2.2 Evaluate the reliability and credibility of the text and/or the writer.**

This includes having strategies to identify a text's reliability and whether the writer/source is credible. For example, some texts required recognition of contradictory or missing information.

Many candidates were able to evaluate the trustworthiness of author/textual content, although there were some candidates who could not identify elements that related to the writer's credibility and/or had difficulty recognising bias or stereotyping.

**Outcome 3: requires evidence of the ability to read written texts for different purposes**

This includes being able to select and evaluate texts for a specific purpose and being able to locate and use relevant information within and across a range of texts.

**3.1 Select and evaluate the relevance of texts according to the reader's purpose.**

This includes the ability to use more than one strategy to select and check that a text matches their purpose for reading and being able to identify a variety of sources for specific information. For example, some texts required that candidates read headings, skimmed texts and scanned for key words.

Although some candidates were able to identify information relevant for a given purpose (for example, identify which movie would be most appropriate and enjoyable for a five year old, or which search result would give them the information required to solve a problem), many candidates did not read the questions or texts closely enough to select the best text/s according to the stated purpose.

**3.2 Locate and use information across a range of texts according to the reader's purpose.**

This includes the ability to compare, contrast, summarise, or link information across a number of texts.

Although some candidates could locate information across texts and were able, consequently, to piece together events across a number of short texts, many candidates did not answer these questions accurately.

## IN SUMMARY

**Areas of strength** demonstrated by candidates who were clearly at, or above, the required standard:

- used skimming and scanning strategies to help them locate the main points or find relevant information
- used strategies to reject misleading or inaccurate information
- recognised and understood why a wide variety of language features and text structures (e.g. punctuation, tables, hypertext, paragraphing) had been used
- had a reading vocabulary that included some general academic and specialised words
- could use knowledge and strategies to identify the meaning of some unfamiliar vocabulary (e.g. word families, figurative language)
- could identify the writer's point of view or purpose, even where it was not explicitly stated or immediately apparent
- linked writer's choices (e.g. vocabulary, text structure) to purpose and audience
- could use strategies to select and check that a text matched their own purpose for reading, (e.g. used headings and scanned for key words)
- used close reading in order to compare, contrast, summarise and link information from a range of sources.

**Areas requiring improvement** demonstrated by candidates who were not at, or were borderline in meeting the required standard:

- skimming and scanning strategies to locate, check and select relevant information
- understanding a writer's purpose for writing, as distinct from their own purpose for reading
- reading closely to 'pick up clues' and 'read between the lines'.

**The marking team recommends that teachers focus on the following:**

- Development of skimming and scanning strategies to locate, check and select relevant information.
- Development of critical thinking and awareness, including an understanding of a writer's purpose and the implications for the reader (e.g. explicit/implicit, inference, opinion/fact, stereotype).
- Development of knowledge of a range of language features and text structures (e.g. sentence types, grammatical constructions, paragraphing) and reasons for their use.
- Development of reading vocabulary from a range of text types, including an understanding that some words/phrases can have multiple meanings (e.g. figurative language).
- Developing strategies to understand unfamiliar language (e.g. word families, word connotations).

5b. 2021 NCEA  
Assessment Report  
Unit Standard 32405  
(Writing)

## 2021 NCEA Assessment Report

Standard number: US 32405 Write texts to communicate ideas and information

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### **Outcome 1: requires evidence of the ability to write meaningful texts for different purposes and audiences**

This outcome requires candidates to show they can produce writing of different text types, for different purposes and audiences. At least one text must use formal language and at least one text must be a continuous text of at least 200 words.

In the Common Assessment Activity (CAA), this outcome was assessed by requiring candidates to produce two written texts, one from each of two sections. One section was labelled 'formal writing'. Each section contained a range of options/topics, a stated length requirement, a planning space, and a reminder to use appropriate paragraphs and punctuation.

#### **1.1 Select and use content that is appropriate to purpose and audience.**

This includes addressing the topic/option by establishing a main idea/argument/point and providing details to support that focus.

Candidates who completed the CAA generally provided relevant and appropriate content for the selected purpose, audience and text type.

A few candidates did not meet this requirement because, for example, they went off topic, or did not use age appropriate details for the intended audience, or provided too little additional detail, apart from that which was provided for them.

#### **1.2 Use text structures in ways that are appropriate to purpose, audience and text type.**

This includes organising their ideas so that the text is meaningful to the reader.

Most candidates met this performance criterion by using an appropriate structure/format for the stated purpose and audience (e.g. a letter to an employer is structured differently from an email to a friend); sequenced content appropriately (e.g. introduction, conclusion, paragraphs), and linked ideas and details appropriately (e.g. firstly..., another way...).

Some candidates did not select an appropriate text structure for the given purpose, audience or text type (e.g. the text moved randomly from point to point) or did not use paragraphs or other devices to aid reader understanding (e.g. appropriate beginnings and endings).

#### **1.3 Make language choices that are appropriate to purpose and audience.**

This includes the appropriate use of vocabulary (e.g. precision, register, tone), sentence types (e.g. length, variety, complexity), and tense (e.g. past, present).

Most candidates used appropriate register, tone and vocabulary (e.g. differentiation between ending an email to a family member with *See you soon/Ka kite anō*, and ending a letter of application with *Yours faithfully/Nāku noa*), and used appropriate sentence structures and

word forms (e.g. using 'cannot' as opposed to 'can't'; using simple, compound and /or complex sentences).

Some candidates did not show evidence of thinking about word choice, and/or that different words may work better in different contexts and for different audiences and/or purposes (e.g. 'kids' or 'children'). Some did not appear to consider the appropriateness of the tone and level of formality in the choices they made (e.g. politeness, civility and overuse of exclamation marks). Some candidates provided insufficient evidence of sentence variety (e.g. overuse of simple sentence patterns).

#### **1.4 Write text that demonstrates sufficient technical accuracy to communicate meaning, without intrusive errors in spelling, punctuation, or grammar.**

This includes having control of most writing conventions. Although some errors are acceptable, they should only occur when a student is attempting a more complex structure or using unusual or sophisticated vocabulary.

The candidates who met this requirement generally demonstrated control of writing conventions, such as sentence construction, subject-verb agreement, and the appropriate use of tenses, punctuation, pronouns and spelling. They also tended to answer most of the short answer questions (Outcome 2) correctly.

Many candidates had difficulty in meeting this requirement. The majority of the errors involved awkward and/or run on sentences, tense confusion and punctuation, grammar and spelling errors. Some of these candidates could often answer the short answer questions that tested the same language conventions quite accurately, although this apparent knowledge was not evidenced in their own writing. There was considerable evidence of a general lack of editing and/or proofreading their work.

#### **Outcome 2: requires evidence of the ability to use written language conventions to support communication**

This outcome requires evidence of control of specific language conventions to support communication.

In the CAA, this outcome was tested using a range of short answer questions.

#### **2.1 Construct a variety of complete sentences.**

This includes being able to correctly use a range of sentence types.

Most candidates were able to identify and write complete sentences, e.g. simple, compound and complex sentences, although they often had difficulty with the punctuation of the sentence.

Some candidates had difficulty recognising a complete sentence and/or had difficulty in writing one.

#### **2.2 Punctuate correctly to support meaning.**

This includes understanding the purposes and conventions of basic punctuation: what punctuation is required, where and when.

Many candidates did not use capital letters and full stops at the beginning and end of sentences.

### **2.3 Use grammatical conventions within sentences and paragraphs with sufficient technical accuracy to communicate meaning.**

This includes observing the conventions associated with, for example, subject-verb agreement, pronoun reference, appropriate use of word forms, and consistent tense use.

Most candidates answered these questions correctly, although some candidates had difficulty with some or all of these conventions.

### **2.4 Use and spell everyday high frequency vocabulary with technical accuracy.**

This includes being able to use every day high frequency words accurately (e.g., words found in the Essential Spelling List 1-7, and/or the first 2000 words of the New General Service List).

Most student completed these questions correctly, although many of the same candidates miss-spelt the same words in their own writing (**Outcome 1**).

### **2.5 Make simple changes to improve text coherence and the organisation of the content.**

This includes being able to recognise what had to be changed in order to clearly communicate the intended message.

Many candidates had difficulty with these questions, particularly, subject-verb agreement for example, Amyra and Cody enjoy/enjoys watching movies, pronoun reference for example, I removed the stereo from my car and sold it, and consistent tense use for example, I eat/ate an ice cream, then bought some popcorn.

Some candidates could not recognise the need for any changes.

## **IN SUMMARY**

**Areas of strength** demonstrated by candidates who were clearly at, or above, the required standard:

- planned their written answers (e.g. used the planning space) by thinking carefully about their selected topic/s
- focused clearly on the topic/question and provided relevant and appropriate supporting detail/s
- met the text length requirements
- organised and linked their ideas so they met the writing purpose and audience
- used a confident, strong and/or personal voice /language style (as appropriate to purpose and audience)
- demonstrated knowledge and control of writing conventions appropriate to the purpose and audience in both Outcomes 1 (short answer section) and Outcome 2 (own writing)
- reviewed, edited, and proofread their written texts.

**Areas requiring improvement** demonstrated by candidates who were not at, or were borderline in meeting the required standard:

- completing all sections of the assessment (e.g. completing 2 pieces of writing and the short answer questions)
- meeting all requirements of the standard (e.g. text length, text formality)
- using the planning space to organise their ideas
- taking note of the reminders, such as 'use appropriate paragraphs and punctuation'
- addressing the topic/questions (Outcome 1) appropriately with sufficient examples and detail
- recognising the difference between 'written' and 'spoken' language: some answers, particularly in the formal writing section, used language that was not always appropriate for the context
- using the knowledge that they demonstrated in the short answer section (e.g. spelling 'believe' correctly in Outcome 2, but incorrectly in their own writing).
- editing and/or proofreading their work for content, structure, language appropriateness, and technical accuracy.

**The marking team recommends that teachers focus on the following:**

- Development of planning strategies to help candidates organise content/ideas prior to drafting texts, e.g. brainstorming, graphic organisers, note taking.
- Extension of idea development beyond listing of ideas or examples.
- Development of an understanding of 'appropriateness' for purpose and audience (e.g. what 'formal' means, paragraphing, language/sentence appropriateness).
- Developing familiarity with processes of reviewing, editing, and proofreading written work.
- Helping candidates develop wider vocabularies (e.g. access to a range of different text types).



5c. 2021 NCEA  
Assessment Report  
Unit Standard 32406  
(Numeracy)

## 2021 NCEA Assessment Report

### **Standard number: US 32406: Use mathematics and statistics to meet the numeracy demands of a range of situations**

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Candidates who were awarded **Achievement** commonly met all outcomes of the standard to the required level.

Candidates whose evidence was assessed as **Not Achieved** commonly:

- did not complete all sections of the assessment *and/or*
- did not meet the requirements of **all three** Outcomes.

*The lists below relate to the specific Numeracy assessment and will differ for each assessment.*

#### **Outcome 1: requires evidence of the ability to formulate a mathematical and/or statistical approach to solve problems in a range of meaningful situations**

This outcome requires candidates to show they are able to make sense of the mathematical and statistical demands of a range of situations; and to select an appropriate operation, representation, variable and/or method to solve the problem.

Candidates who met this outcome were able to:

- interpret a scale to estimate distance on a map
- find the average weight of one item
- find the cost of an item using the unit rate for price per kilogram
- interpret a bank statement to show understanding of positive and negative values
- select appropriate graph types to display category data
- read the diagram for a railway network
- choose the correct nets to form a rectangular prism shaped box
- read a dot plot to locate a specific data point and interpret that point
- decide if a promotional deal was better value than the standard offer.

Candidates who did not meet this outcome:

- selected mathematical and statistical approaches that did not meet the demands of the situation.

#### **Outcome 2: requires evidence of the ability to use mathematics and statistics to address the numeracy demands of a range of meaningful situations**

This outcome requires candidates to show they can select and apply mathematical and statistical concepts; select and use appropriate approaches; and use a degree of precision appropriate to the situation.

Candidates who met this outcome were able to:

- describe the direction of a journey using compass points
- calculate the number of items needed by calculating difference and applying unit weight
- reverse a weight to price rate to find the weight of an item given a price

- interpret a specific point as an ordered pair, representing weight and price
- calculate a bank balance
- interpret a multiple bar graph
- read a timetable and calculate elapsed time
- convert between measures given in centimetres and millimetres
- calculate the volume of a box in cubic centimetres
- calculate the median of a data set from a dot plot
- calculate with a simple rate
- choose division as the appropriate operation in a rate problem.

Candidates who did not meet this outcome:

- calculated or reasoned incorrectly
- selected an incorrect procedure.

**Outcome 3: requires evidence of the ability to explain the reasonableness of mathematical and statistical approaches to situations**

This outcome requires evidence of consideration and explanation of the reasonableness of solutions and approaches, and reflection on how these were chosen; use of evidence from the information provided to support conclusions; use of critical judgement in relation to mathematical and statistical statements; and engagement in sense-making to interpret solutions in relation to the situation.

In the assessment, candidates were required to interpret the mathematics and statistics used by others, take a position in terms of the appropriateness of the response, and justify that position using evidence from the situation, and from their own experience.

Candidates who met this outcome were able to:

- establish and justify the predicted time for a journey based on speed
- critique an estimation strategy for predicting the price of items, using weight and unit price
- justify the validity of a linear model for a pricing situation
- express and justify an opinion about someone's financial situation
- respond to a statistical claim based on multiple dot plots
- use a statistical display to argue about the relative position of a specific person within a distribution
- calculate the area of a wall in square metres
- find an angle of rotation.

Candidates who did not meet this outcome:

- left open response sections blank, or
- restated the claim without justifying their position using the available information.

## IN SUMMARY

**Areas of strength** demonstrated by candidates who were clearly at, or above, the required standard:

- items that involved statistics, including applying measures of centrality, and interpreting graphs
- number calculation, including applying rates.

**Areas requiring improvement** demonstrated by candidates who were not at, or were borderline in meeting the required standard:

- converting between units
- calculating areas and volumes
- working with angles in rotational symmetry.

Measurement and geometry were areas of comparative weakness. Of particular concern was the number of candidates who calculated elapsed time in the belief that one hour equals 100 minutes.

**The marking team recommends that teachers focus on the following:**

- Providing opportunities for candidates to take a mathematical or statistical position.
- Helping candidates develop and present a mathematical or statistical argument for that position and support it with evidence.

*This is required to address the current weakness with candidate responses for Outcome 3 where candidates need to explain the reasonableness of their mathematical and statistical approaches to solving problems.*

Performance of candidates was extremely variable, from strong argumentation that used evidence from the provided information to restatement of the claim with no supporting argument. A proportion of candidates did not attempt items requiring an open response. The standard requires this aspect of critical numeracy.