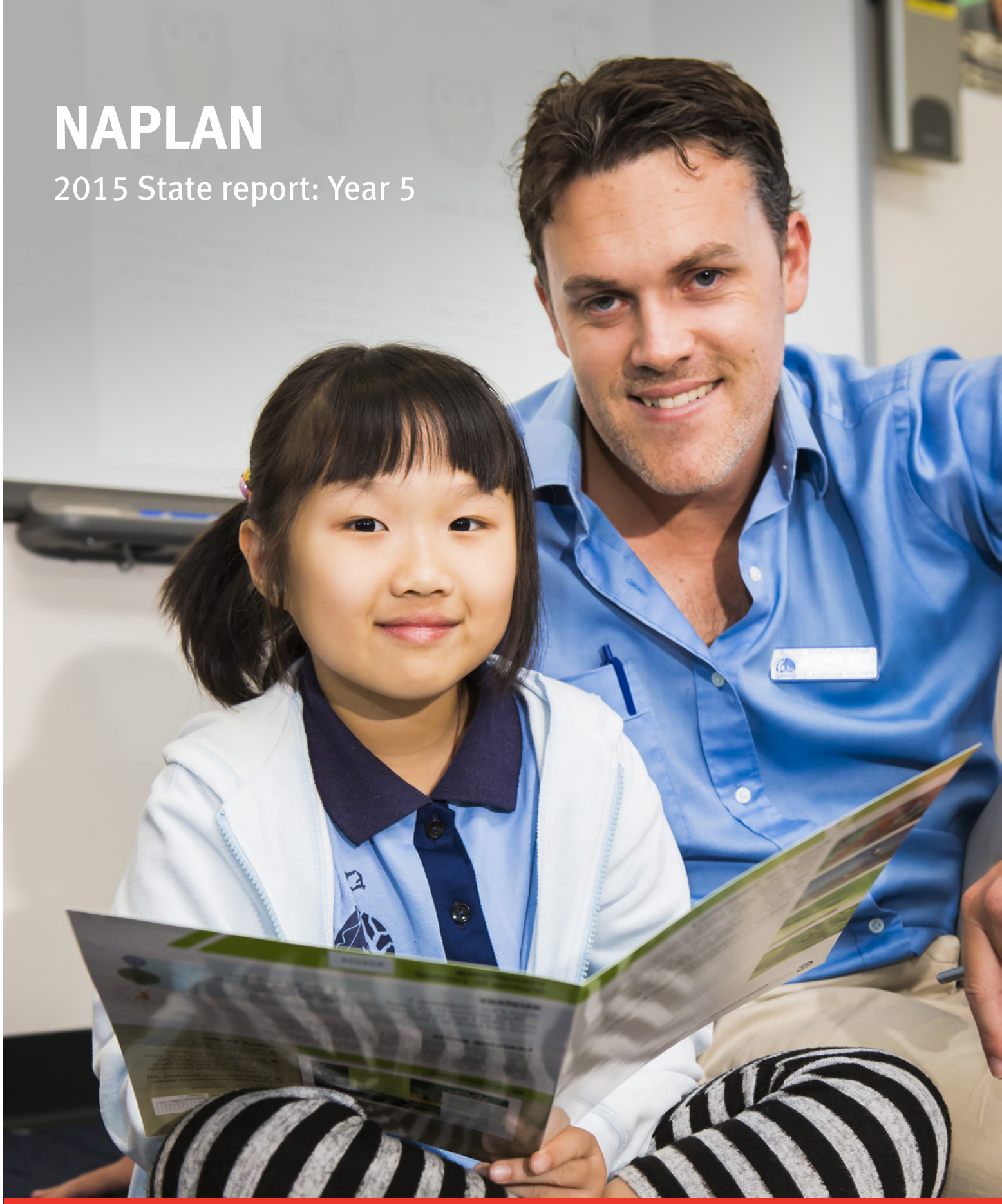


NAPLAN

2015 State report: Year 5



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Preface

The purpose of the National Assessment Program is to collect information that governments, education authorities and schools can use to determine whether Australian students are reaching important educational goals. As part of that program, the Literacy and Numeracy tests are valuable sources of information about literacy and numeracy learning that can be used to inform educational policy and current educational practice.

The National Assessment Program — Literacy and Numeracy (NAPLAN) tests are developed using the nationally agreed *Statements of Learning for English* and *Statements of Learning for Mathematics, 2005*. These statements describe essential skills, knowledge, understandings and capabilities that all young Australians should have had the opportunity to acquire by the end of Years 3, 5, 7 and 9. From 2016, the tests will relate to the Australian Curriculum.

The NAPLAN tests are designed to provide a nationally comparable indication of student performance in Language conventions, Writing, Reading and Numeracy. The tests are designed to assess a student's ability to demonstrate the following skills:

- **Language conventions:** The test assesses the ability of students to independently recognise and use correct Standard Australian English grammar, punctuation and spelling in written contexts.
- **Writing:** The test assesses the ability of students to convey thoughts, ideas and information through the independent construction of a written text in Standard Australian English.
- **Reading:** The test assesses the ability of students to independently make meaning from written Standard Australian English texts, including those with some visual elements.
- **Numeracy:** The test assesses students' knowledge of mathematics, their ability to apply that knowledge in context independently, and their ability to independently reason mathematically.

This document reports the performance of Queensland students in Year 5 who sat the 2015 National Assessment Program — Literacy and Numeracy (NAPLAN) tests.

Who should use this report?

NAPLAN: State report will help teachers, principals and other school personnel understand, interpret and use the student performance information contained in the test reports. Class and school reports are supplied electronically on the secure section of the Queensland Curriculum and Assessment Authority (QCAA) website: <https://naplan.qcaa.qld.edu.au/naplan/pages/login.jsp>. These reports are accessible only with the school's Brief Identification Code (BIC) login and password. Individual student reports are distributed to schools as printed copies.

Principals

Principals can use this document to help interpret their school reports and to provide information to the school community on aspects of the tests. The document provides information on how to access and interpret the online reports located on the QCAA's website.

Curriculum leaders, Heads of Department and Heads of Special Education Services

Queensland's performance on each of the Literacy and Numeracy strands is provided in this document. Curriculum leaders can use this information to interpret the class reports.

Classroom teachers

Classroom teachers can use information such as the item descriptors, state and national results and the commentaries provided in this report to interpret their class reports. Teachers can compare the performance of their students on a particular item with Australian results. For example, an item with a low facility rate may not necessarily indicate a problem in teaching and learning. It may be that this was simply a difficult item for all students in this cohort across Australia. The results for such an item may provide information about the learning challenges associated with that concept but should not necessarily be cause for concern.

Parents/carers

Parents can use the information in this document to interpret the results on their child's report. They are also able to judge how their child performed when compared with the whole population of students. The item descriptors provide useful information about the scope of the tests.

Pre-service teachers

Pre-service teachers will find the information in the commentaries on overall student performance useful in gaining an understanding of what students know and can do in some areas of Literacy and Numeracy at Year 5.

Placing the tests in the assessment context

The NAPLAN tests are national instruments designed to contribute to a school's assessment program and to inform the teaching and learning cycle. It must be remembered, however, that the results from the 2015 NAPLAN tests represent only one aspect of a school's assessment program.

The results from a school's formal and informal assessment of students should be consistent with the NAPLAN test results. Principals and teachers should keep in mind that these were pencil-and-paper, point-in-time, timed tests. If the test results are different from what was expected, consider the possible reasons. The results of the tests may indicate aspects of student performance that need further investigation within the classroom using other forms of assessment.

Marking and scoring the tests

Marking the tests

The tests are scored against nationally agreed marking guides. There are four guides, one for the writing task and one each for the open responses in reading, numeracy and spelling. These guides provide information on the acceptable forms of the correct answer.

For the Numeracy tests, students may provide a correct response in different forms. Professional officers review these results and decide how to score.

Calculating raw scores

The simplest calculation made in scoring the tests is the raw score — the number of questions answered correctly. All of the questions for the Language conventions, Writing, Reading and Numeracy tests are marked as either correct or incorrect.

Constructing scale scores

Raw scores have limited use. They enable the performance of students who have all completed

the same test at the same time to be placed in a rank order, but they do not provide information about the level of difficulty of the test nor the relative differences between students.

To achieve this, raw scores are transferred to a common scale that reflects how difficult it was to achieve each score. The scale is comparable between year levels for each assessment area. An equating process is also carried out on each year's test to enable scores to be compared between years of testing. This might mean, for example, that a raw score of 20 on the Year 3 Reading test is transformed to a scale score of 354. This will also represent the same achievement for a student with the same scale score in Year 5, and for a student with the same scale score for Reading in a previous year.

The single scale for all students in all year levels is centred on approximately 500. Scale scores also provide a basis for measuring and comparing students' abilities across years of schooling, for example comparing a student's result in Year 3 in 2013 and Year 5 in 2015.

Using scale scores

The scale score can be used to compare the results of different students. Principals and teachers should take care when making comparisons between small groups of students. For groups of fewer than 10 students, differences may not be reliable, particularly small differences.

The scales can be used to monitor the growth of groups of students over time. Principals and teachers should ensure that the compositions of the groups are the same. This enables the school to evaluate special programs that may have been put in place.

Understanding the data

Which reports?

The *NAPLAN National Summary Report* and the *NAPLAN National report* provide nationally comparable data about student performance within the National Assessment Program. These data provide states and territories with information about the achievement of their students in relation to their peers across the nation. These data are available from the ACARA website.

This *NAPLAN State report* provides detailed information about student performance on each of the test items. It gives information about:

- the Queensland performance on each of the items
- the national performance on each item
- the item descriptors
- some commentary on the state results
- some recommendations for teaching.

Together, these publications provide system-level information and are generally available.

NAPLAN data	National report	Government systems Australian public	Analysis of systems data: • Systems planning • Trends
	School report	Schools	Analysis of school data: • Range • Comparisons of student & state
	Class report	Teachers	Analysis of class data: • Test results by – class – group response
Teaching, learning and assessment including planned explicit teaching and feedback based on identified learning goals.			

The *NAPLAN School reports* give information about a school's performance in each year level tested. They provide a summary of year-level performance as well as performance by gender, language background and Indigenous status in the following fields:

- distribution of scale scores
- distribution of achievement bands
- school and state means
- participation of the group.

The shading showing the range of performance for the middle 60% of Queensland students, together with the state mean, locates a school's performance relative to that of the state.

The NAPLAN *Class reports* show the performance of each student on every item. They show the items a student had correct, including the errors made in each strand with the exception of reading, where the answers are generally too long to record.

The report also gives the:

- scale scores for each student
- bands for each student
- percentage correct for each item for the class and state, and by gender.

The NAPLAN school and class reports are available to schools from the QCAA secure website.

Using data to improve teaching and learning

While the national and state reports provide the comparative data, it is the class reports that provide a school with the information that can be used to inform teaching and learning and to build capacity in schools. Analysis of the NAPLAN class data, in particular the performance on each item, will provide teachers with information about the understandings and patterns of misunderstandings in student learning.

An analysis of the distracters presented in multiple-choice items and the answers to the constructed-response items, other than those for reading, is available through the SunLANDA data analysis tool. This is available on the QCAA website and is designed to help schools with their analyses of class and school results. These results should be placed in a context with other school-based assessments.

Looking at the performance on the items and then analysing the error patterns allows teachers and principals to make hypotheses about why groups of students make particular errors. Schools can:

- compare the facility rates (percentage correct) of items to see if their performance is consistent with the national and state results available in this document
- look at the common errors made by their students and compare them with the common errors made in the state
(Only errors from Queensland students are available. These are found in the item analyses that are part of SunLANDA.)
- form hypotheses about why students are making these errors, e.g.
 - How did students think about this aspect of curriculum?
 - What misunderstandings might these errors represent?
 - How might the structure of the test question have shaped the response?

Using a combination of the NAPLAN data, school data and professional judgment, teachers should then test these hypotheses to see whether they are valid or whether there is more to be thought about and investigated. Interpretation of these results allows teachers to make judgments about teaching approaches and curriculum.

The professional conversations that are part of this process are the most effective and powerful way to use the data as they are the vehicle for developing shared understandings.

Year 5 Writing

Writing prompt

YEAR 3 AND YEAR 5

Try this activity

Choose a sport, hobby or activity that you are interested in. Write to persuade a reader why they should try your chosen activity.

- **Start with an introduction.**
An introduction lets a reader know what you are going to write about.
- **Write your reasons for your choice.**
Why is it important for others to get involved in this activity? Explain your reasons.
- **Finish with a conclusion.**
A conclusion sums up your reasons so that a reader is convinced of your opinion.

Remember to:

- plan your writing
- use paragraphs to organise your ideas
- write in sentences
- choose your words carefully to convince a reader of your opinion
- pay attention to your spelling and punctuation
- check and edit your writing so it is clear.

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Key messages

About the task

In 2015, the NAPLAN Writing test used two prompts for the first time, one for Years 3 & 5 and another for Years 7 & 9. Besides this change, the test conditions and administration remained the same as in previous years, i.e. teachers delivered the same spoken instructions and read the text aloud to students. Working independently, students had to plan, compose and edit a written response. Students were allowed five minutes to plan, 30 minutes to write their script, and a further five minutes to edit and complete the task. Three pages were provided for students to write a response.

The 2015 prompt for Years 3 & 5 was entitled *Try this activity*. Students were asked, in the textual component of the prompt, to choose an activity such as a sport, hobby or other activity and write to persuade a reader why they should try that chosen activity. Additional information was provided in the textual component of the prompt. This named the structural components, and further defined these elements, e.g. *Start with an introduction. An introduction lets a reader know what you are going to write about*. Other notes were also provided in relation to the conventions associated with this type of writing task. A series of stylised silhouetted images of various sports and activities surrounded the textual component of the prompt. As was the case in 2013 and 2014, the prompt was relatively open-ended, allowing students to base their writing on a topic of their own choice within the persuasive genre.

Markers for this Writing test were trained using the national persuasive writing marker training package, delivered as part of ACARA's national assessment program. Markers were recruited and trained in accordance with national protocols. Registered teachers mark the NAPLAN Writing test in Queensland. All markers applied the 10 criteria and related standards from the marking rubric. Writing test scripts were marked on screen in all states and territories. Stringent quality-control measures were applied to the marking of student scripts, including a prescribed percentage of scripts to be double-marked, and the daily application nationally of control scripts for all markers. As part of the Queensland marking operation for 2015, referee marking was expanded to further ensure marking reliability. There is also provision for appeal over individual Writing test scores, once test results are released. On appeal, a student's script is re-marked independently by two senior Writing test markers. The NAPLAN Persuasive writing marking guide is available at www.nap.edu.au/NAPLAN/About_each_domain/Writing/index.html.

Performance

As evidenced in scaled scores, there was a marked improvement in the performance of Year 3 students, and to a lesser extent Year 5 students in the 2015 Writing test, compared to 2014 performance. A number of factors may have influenced this result. Anecdotally, teachers reported that younger students felt quite comfortable with the 2015 prompt. Its open-ended nature and its familiar subject/s provided a useful source on which students could base their persuasive writing. The 12 graphics representing different activities may have helped students decide on a suitable topic, though these silhouetted forms tended to be more symbolic or representative of sports, hobbies and the like. Interestingly, there was no trend apparent in students' 'touring the stimulus' as their response, a pattern that had occurred in an earlier NAPLAN Writing test prompt where multiple images were displayed.

For younger students, a more scaffolded approach in teaching and learning can support greater control over the textual and structural features of a persuasive text. Since this was the fifth consecutive year in which this genre formed the basis of the Writing test, it is likely that school programs have become more closely directed to enhancing student control of this genre. There is

a balance though, between adopting a particular text structure on the one hand (e.g. a five-paragraph essay), and developing in students a deeper understanding of how it is that a writer is able to **persuade** a reader. The more that teachers are able to address these broader logical and textual aspects of the genre, such as condition, cause and effect, use of supportive evidence etc., the better the foundation that will be laid for successful students' writing in the future. Embedding these features in persuasive writing also yields a grammatical bonus, so that even young students can explore the use of more complex sentence forms, text connectives, modal operators etc.

Because the prompt asked students *to persuade a reader why they should try a chosen activity*, students generally identified others their age as the likely audience for the text. This allowed for a more natural control of language and vocabulary. In terms of text structure, many students still adopted the *firstly, secondly ...* approach for body paragraphs, with introductions that usually included a preview, and conclusions that frequently amounted to little more than re-statements of introductions. Students who were able to foreshadow or précis their arguments in more interesting ways were generally rewarded.

Topics centred around sports, hobbies and games (particularly electronic games). Because students were familiar with these activities, they could draw on specific field knowledge quite readily. Shaping this supporting information into a persuasive form was not always achieved with fluency, and it was not uncommon for writers to just make simple 'persuasive' statements such as *... and this is why you should try this* As previously mentioned, the top and tail approach, with an introduction and conclusion 'sandwiching' points of argument, was most common. There appeared to have been some gains in vocabulary choice and use by younger students, though the criteria descriptors emphasise the need for precision, and this requirement was not always adhered to; i.e. students may have experimented with vocabulary that was not always contextually appropriate.

References

Australian Curriculum, Assessment and Reporting Authority, 2013 *Australian Curriculum: English*
www.australiancurriculum.edu.au

Queensland Curriculum and Assessment Authority, 2013 *Hidden worlds*
www.qcaa.qld.edu.au/downloads/p_10/3579_wt_hidden_worlds.pdf

Queensland Curriculum and Assessment Authority, 2011 *Queensland's Literacy Test: A framework for describing spelling items*
www.qcaa.qld.edu.au/downloads/p_10/3579_describing_spell_items.pdf

Writing task sample

Year 5 — Photography

Been there, tried that. It really is annoying. You need a hobby that you can settle down in, something that isn't always demanding your time, nor so dull that you drift off. Artistic, fun, quiet, loved. I know what you need.

You need photography.

Photography is interesting, and enjoyable. It can be taken at your own pace, and - you don't need any previous experience! Say you were - hmmm, a basketball player. Basketball is getting dull. One day, you go into a shop selling cameras. You stare around at the gleaming equipment, the beautiful, glossy prints, and something clicks in your mind. "Hey, this is for me." You can be a medium-professional photographer in less than four weeks! Amazing!

Photography is personal. You pour your own personality into your photos when you take them - the setting, the background, even the shapes are unique in your pictures. There are infinite possibilities. "Hey, I wonder what this would look like in sepia?" "Let's focus the subject, and blur the background."

Every little tweak makes your photos you.

You can even make money out of a hobby with photography! If you are good enough, you can make canvas prints of your photos, and sell them. Beautiful photos are a phenomenon, and it is more than possible to make a stable income out of photography. Better still, enter your best prints in local competitions, or hang them around the home. All of this can be accomplished with passion and hard work!

When most people think beauty, they conjure images of skinny women with long dresses into their mind.

This is ridiculous.

Photos are beauty.

They can be grief, or joy. Work or play. Love, or hate.

They are not 'just photos'.

They are brothers, mothers, sisters or fathers. They can be friends or memories, lost in time.

They are beautiful.

A photo can be anything.

It can be a light, a piece of toast, or chicken pecking the lens.

A whole relationship can be encased in a single print.

Next time you see a beautiful landscape print, or a glistening
lit-up picture, say to yourself, "I could do that."

Because you can.

I know you can.

END OF TEST

Year 5 — Photography

Audience	5
This is not a typical script but it shows that a very high standard can be aspired to. The first words, <i>Been there, tried that</i> , adapt a popular catch phrase ('been there, done that'). This orients the reader to a text about trying an activity. The rest of the introduction leads to the revelation that the activity is photography. The student draws on her own experiences and uses poetic prose to evoke the hobby's artistic appeal.	
Text structure	4
Despite flaws, the script earns a high mark by moving beyond the rigid, 3-reason, 'hamburger' structure. The contrasting paired terms — <i>Artistic, fun, quiet, loud</i> — foreshadow the script's stress on the artistic appeal of the hobby. The terms also allude to the hobby's flexibility. The body section moves through ideas in the order that a hobbyist new to photography would think about them. The last paragraphs focus on the attractions of advanced photography. The conclusion, though too brief, nevertheless leaves the reader with another image of themselves trying the hobby.	
Ideas	4
The ideas emphasise personal pleasure on one hand and, on the other, the seriousness of photography as an art.	
Persuasive devices	4
Readers are directly addressed as <i>you</i> and encouraged to imagine themselves enjoying the pleasures of photography. The script anticipates objections such as 'I already have a hobby' and 'Photography is for experts'. Photography is depicted as the happy medium between dullness and excessive demand. This invites the reader to find fault with their current hobby. The script even suggests the words that the reader will say about photography (e.g. ' <i>Hey, this is for me</i> '). Rhetorical repetition of sentence forms (<i>Photography is ... and Photos are ...</i>) makes readers feel that reasons are accumulating. Sentence fragments are used for dramatic effect. Praise of photographs serves to entice readers to create their own.	
Vocabulary	4
The student chooses mature phrases (e.g. <i>pour your own personality; can be accomplished; memories lost in time, conjure images, the relationship can be encased in a single print</i>). The student attempts to use metaphorical naming but this does not quite succeed (<i>Photos are beauty ... They are grief</i> etc.). These ideas needed to be explained discursively, e.g. by contrasting glamour with true beauty and contrasting artistic interpretation of subjects with mere recording.	
Cohesion	4
The first paragraph exemplifies the student's control of the topic focus. The subject, <i>a hobby</i> , is next referred to as <i>something</i> , then the pronoun is dropped (<i>nor [something] so dull ...</i>). The sentence fragment that follows elides both the subject and verb ([<i>Something that is</i>] <i>artistic, fun, quiet, loud</i>).	
Paragraphing	3
The paragraphs have a logical and cumulative effect (see the comment above on text structure). Some single-sentence paragraphs are effective (<i>You need photography; This is ridiculous</i>). The single-idea paragraphs on the second page, each beginning with <i>They</i> , make for an interesting experiment but they are not really suitable for prose. Possibly the writer envisaged these sentences as captions for photographs in a slide show.	
Sentence structure	5
Sentences are varied and crafted. Control of sentence fragments sometimes is weak.	
Punctuation	3
The boundary punctuation of the first two sentences in paragraph three are incorrect and there are a few misuses of the dash and comma. Otherwise, the script contains many mature usages.	
Spelling	5
The word <i>phenomenon</i> was misspelt.	

Year 5 Literacy

Language conventions

Spelling — Results and item descriptions

The percentage columns give the proportion of correct answers (facility rates). These results are based on provisional data.

Item	Answer	Qld%	Aust%	Description
Proofreading — error identified				
1	funny (funnee)	92.5	93.4	Correctly spells a word with the suffix -y requiring doubling of the final consonant.
2	rocket (roket)	90.4	92.2	Correctly spells a word with -ck closing the first syllable.
3	community (comunity)	72.7	76.3	Correctly spells a word with the absorbed prefix <i>com-</i> creating a doublet at the syllable juncture.
4	swan (swon)	64.5	72.9	Correctly spells a word where <i>w</i> influences the short vowel: <i>a</i> for <i>o</i> .
5	shoulder (sholder)	66.6	70	Correctly spells a word with the long <i>o</i> vowel spelled - <i>ou</i> .
6	tube (tewb)	61.6	65.4	Correctly spells a one-syllable word with the long vowel pattern <i>u-e</i> .
7	crate (craite)	66.5	68.4	Correctly spells a one-syllable word with the long vowel spelled <i>a-e</i> .
8	multiply (multaply)	64.9	67.1	Correctly spells a word with the Latin prefix <i>multi-</i> .
9	penguin (pengwin)	47.3	53.5	Correctly spells a word with the consonant <i>w</i> represented by the letter <i>u</i> .
10	steak (stake)	44.4	46.8	Correctly spells the homophone <i>steak</i> .
11	honeycomb (honeycoam)	37.8	44.7	Correctly spells a word with the silent letter <i>b</i> .
12	exactly (eksactly)	37.6	39.8	Correctly spells a word with the ambiguous consonant <i>x</i> .
13	shields (sheelds)	23.5	24.7	Correctly spells a word with the long vowel <i>e</i> : <i>ie</i> .
Proofreading — error not identified				
14	adults (addults)	83.3	83.5	Identifies a mistake then correctly spells a word with an open first syllable.
15	wooden (wouden)	83.3	84.3	Identifies a mistake then correctly spells a word with the diphthong: <i>oo</i> .
16	dried (dride)	60.7	60.9	Identifies a mistake then correctly spells a word with the inflection - <i>ed</i> , requiring a change to the base word (<i>y</i> to <i>i</i>).

Item	Answer	Qld%	Aust%	Description
17	toasted (tosted)	53.8	56	Identifies a mistake then correctly spells a word with the long vowel <i>o</i> (<i>oa</i>).
18	nursery (nursry)	47.7	50.3	Identifies a mistake then correctly spells a word with the suffix <i>-ery</i> requiring a change to the base word (<i>e-drop</i>).
19	stomach (stomack)	32.9	41.6	Identifies a mistake then correctly spells a word with the hard <i>c</i> represented by <i>ch</i> .
20	helicopter (helecopter)	32.7	39.3	Identifies a mistake then correctly spells a word with the Latin element <i>heli-</i> .
21	squeezed (squeesed)	23.4	27.2	Identifies a mistake then correctly spells a word with the consonant <i>z</i> .
22	interfere (intaferre)	23.8	25.9	Identifies a mistake then correctly spells a word with the prefix <i>inter-</i> .
23	successful (successfull)	24.2	25.3	Identifies a mistake then correctly spells a word with the suffix <i>-ful</i> .
24	heavily (heavally)	17.1	18.3	Identifies a mistake then correctly spells a word with the suffix <i>-ly</i> , requiring a change to the base word (<i>y to i</i>).
25	vehicles (vehicals)	7.6	8.3	Identifies a mistake then correctly spells a word with an unstressed vowel in the final syllable.

Spelling — Key messages

Performance

The spelling component of the *Year 5 Language conventions* test showed that most students in Year 5 are developing their knowledge of both the ‘within-word stage’ of spelling development (how the sounds of words are coded and the letter patterns that represent those coded sounds) and the ‘syllables and affixes’ stage of development (using different syllable patterns and knowing the conventions for adding affixes).

Most students attempted all of the error-identified spelling items. Overall, girls scored better than boys. Their facility rate was higher on 21 of the items and equal to the boys on one item, *crate* (*craite*), item 7. The three items where boys scored higher than girls — item 13, *shields* (*sheelds*), item 20, *helicopter* (*helecopter*) and item 25, *vehicles* (*vehicals*) — involved words and contexts that boys may have identified with more. In item 4, *swan* (*swon*) and item 11, *honeycomb* (*honeycoam*), girls scored 10 or more percentage points higher than boys.

Across the paper, six items required students to demonstrate their understanding of adding prefixes, suffixes and inflectional endings. In item 1, 92% of students knew to double the final consonant (*n*) in *fun* when adding a *y* and corrected the identified error, *funny* (*funnee*). In item 16 *dried* (*dride*), 61% of students were able to correctly add the inflectional ending by changing *-y* in the base word to *-i* and adding *-ed*. Item 24 *heavily* (*heavally*), also required students to change a *-y* to *-i* before adding the suffix *-ly*. Students found this item much more difficult and 5% of Year 5 students did not attempt the item. Of those who did, only 17% were successful. The common errors for this item indicate that the majority of students did not relate the adjective *heavy* to the adverb *heavily* and therefore did not apply the rule to change *y* to *i* before adding an affix.

Students also had problems with item 23, *successful* (*successfull*). This item was not attempted by 6% and had a facility rate of 24%. Many students were not aware that *-ful* is a suffix and has only one *-l*. It is not the word *full*, and *successful* is not a compound word. Students had more success with item 18, *nursery* (*nursry*), achieving a 48% facility rate. They knew that the item required a change to the base word (e-drop) and that a suffix was to be added. The common error patterns demonstrated that they were unsure whether the suffix was *-ery*, *-ary* or *-ury*.

Only 24% of Year 5 students correctly spelled *interfere* (*intafere*) (item 22). This required knowledge of the common Greek prefix *inter-* (e.g. internet, interact, interweave). However the most common error, *interfear*, showed that while 15% of students were able to correct the spelling of the prefix, they introduced another error when they did so. These students should apply the general principle that if words are related by meaning they may also be related by spelling. In choosing between the spellings *interfere* and *interfear*, they should reflect that “fear” and “interfere” are unrelated concepts so the spelling *interfear* is less plausible.

Another item requiring etymological knowledge was item 20, *helicopter* (*helecopter*). This word has a Latin root, *heli-*, and almost 33% of Queensland students corrected the error. Students who were not successful with this item mostly accepted that *hele-* was the correct spelling. However, the most common error made by 16% of students was to identify *rugged* as the error and misspell it. The low facility rate of these two items indicates that Year 5 students would benefit from further study of the etymology of words and should learn to recognise words with Greek and Latin elements and be able to use this knowledge as a spelling strategy.

At this level, homophones and homographs are a common source of spelling problems. Item 10, *steak* (*stake*), required students to correctly spell a homophone with the long vowel digraph *ea* and this item had a facility rate of 45%. Because homophone errors often look right, they are easy for students to overlook, and that is why the spelling–meaning connection is critical. In order to correctly spell words that sound alike, students must have a firm understanding of which meaning to associate with the spelling pattern, and many students lack this.

Year 5 students have some control of the spelling patterns for long vowels in words such as *shoulder* (67%), *toasted* (54%), *tube* (62%) and *crate* (66%). The spelling of the word *shields*, (long vowel *e* spelt *ie*) offered a greater challenge, with a facility rate of only 24%. These results demonstrate the need to keep a teaching focus on this aspect of spelling, reinforcing the knowledge with short and familiar words while revisiting and then extending it as Year 5 students write more multisyllabic words.

In item 8, students had some success with the unstressed vowel in the middle syllable of the word *multiply*, with a facility rate of 65% — a significant increase from the Year 3 result for this word. Item 25, *vehicles* (*vehicals*), was another word with an unstressed vowel, this time in the final syllable. This was the most challenging word for Year 5 students across Australia, and had a facility rate of only 8%. Although students were mostly able to identify the target word, they did not know how to correct it. They appeared to use ‘sounding out’ as their main strategy when, for many words at a Year 5 level, students need instead to apply visual, etymological and morphemic strategies.

There are still aspects of spelling consonants that remain challenging for Year 5 students. Students across Australia had difficulty with the ambiguous consonant *x* in the word *exactly* (item 12) with only 37% of Queensland students able to spell it correctly. Many also did not understand the consonant *z* in item 21, *squeezed* (*squeesed*). The common mistake was to accept the incorrect letter *s* and target other letters. This item had a facility rate of 23%.

Almost half of the Queensland Year 5 students correctly spelt *penguin*, item 9. In this word the sound of the consonant *w* is spelt with the letter *u*.

By Year 5, most students are being taught about syllable patterns. Even straightforward patterns such as the two consonants in *roc/ket* and the doublet in *com/munity* offer a degree of challenge for some students. While 90% of Queensland students could spell *rocket*, those students who were unable to correct it left out either the *c* or the *k*. Even when students realised that there was an error in the word *community* (*comunity*), many could not correct the error.

Implications for teaching

Year 5 students should be developing their understanding of the orthographic system and be able to recognise when they need to draw on different layers of the system. The layers involved in the orthographic system are:

- the sound/symbol and pronunciation layer
- the syllable/word function layer
- the meaning layer.

All layers were tested in the 2015 Year 5 NAPLAN Spelling test.

Year 5 students are continuing to build on their knowledge of the conventions for adding inflectional endings (*-s*, *-es*, *-ed* and *-ing*). This development of knowledge began with oral language in the preschool years and continued as they studied inflectional endings in spelling. Studying inflectional endings in spelling will introduce students to base words and suffixes as well as the conventions that govern spelling changes. Students in Years 1 to 3 generally learn such conventions as the inflectional endings in the context of one or very short two-syllable words. While some students generalise the conventions to apply them to longer words, many do not and so the doubling and e-drop conventions need to be retaught in the context of longer words.

One of the major challenges students face when adding *-ed* or *-ing* is whether to double the final letter of the base word. The doubling convention is that when a suffix beginning with a vowel is added to a base word containing a single vowel followed by a single consonant (e.g. *skip*), the final consonant is doubled (*skipped*, *skipping*). Students can remember this as the one-one-one convention: one syllable, one vowel, one consonant = double. Words that end with *x* and *w* are exceptions as they never double (e.g. *waxing* and *showing*), but this convention is worth learning and has implications when looking at syllable juncture patterns.

In the syllable and affix stage, the learning is focused on the structure and function of longer words. To understand the structure of words, students need to learn about syllable patterns. That is, open and closed syllables and the letter patterns that signal them. Understanding syllables depends on knowing how vowels work in relation to consonants. Aspects of the sound layer taught in the context of single-syllable words need to be revisited and re-taught in the context of longer words. Through this teaching, students will learn how sounds, particularly vowel sounds, perform in stressed and unstressed syllables.

Students must also be given many opportunities to increase their knowledge of homophones. They will only learn to master them through repeated opportunities to explore and work with them. A few troublesome homophones can be learned with the help of mnemonics. For example, to distinguish between *there*, *their* and *they're*, between *piece* and *peace*, between *hear* and *here* and between *meet* and *meat*, students can learn these associations: *there* - *here*; *piece* - *pie*; *hear* - *ear*; *meat* - *eat*. Although mnemonics provide worthwhile reminders for some homophones, students should also be encouraged to collect homophones from their reading and writing and compile them into a personal or class language document that reinforces meanings as well as spelling patterns.

Approximately 70% of English words are derived from Latinate and Greek words. When students learn these 'building blocks' it becomes easy for them to recognise and decode unfamiliar words

that are related to the known root. As students grow it becomes increasingly important to teach the meanings of Greek and Latin roots explicitly, especially when they encounter scientific and technical topics and texts.

Etymology is sometimes called the historical dimension of spelling. It reveals the links between words and ideas. Etymological knowledge contributes strongly to our ability to recognise the chunks of meaning inside words. Our ability to recognise Greek and Latin affixes and stems contributes to our knowledge of morphology (all of the units within words that influence meaning and grammatical function).

Please refer to SunLANDA for a detailed analysis of individual test items. This includes the most common errors made statewide, which can be compared with the most common school errors. There are also teaching ideas designed to assist the development of the understanding and skills required by each item. SunLANDA is available to all schools on the QCAA website.

Grammar and punctuation — Results and item descriptions

The percentage columns give the proportion of correct answers (facility rate). These results are based on provisional data.

Item	Answer	Qld%	Aust%	Description
26	A	96.4	96.5	Identifies a word with an adjectival function.
27	D	88.6	89.3	Identifies a sentence requiring a question mark.
28	B	84.7	84.5	Identifies the correct pronoun referring to a compound subject.
29	A	86.6	85.9	Identifies a thinking verb.
30	C	86.4	84.6	Identifies an adverb in a sentence.
31	C	86.9	87	Identifies the correct preposition to complete a phrase.
32	A	74.3	76	Identifies the correct punctuation of a list.
33	D	78.8	76	Identifies the correct use of his/he's.
34	D	80.3	79.8	Identifies the correct punctuation of direct speech.
35	D	66.7	68.4	Identifies the main clause that correctly completes a complex sentence.
36	C	60.3	61.1	Identifies a word requiring a present tense inflection rather than a contraction apostrophe.
37	D	64.1	65.2	Identifies the correct verb form to maintain tense agreement in a sentence.
38	C	67.2	68.3	Identifies the sentence that correctly combines information.
39	C	69	69.4	Identifies the sentence that uses a contraction correctly.
40	B	58.5	59.5	Identifies a word functioning as an adjective.
41	A	64.4	66.1	Identifies the reference for a pronoun in a short text.
42	C	67.4	69.4	Identifies correct sentence boundary punctuation in two simple sentences.
43	D	49.1	52.1	Identifies a command.
44	B	51.1	53.4	Identifies the sentence with the correct indefinite article.
45	D	51.2	52.9	Identifies a word requiring a present tense inflection rather than a contraction apostrophe.
46	B	33.4	33.9	Identifies the correct use of commas to separate words interrupting a main clause.

Item	Answer	Qld%	Aust%	Description
47	D	43.4	44.6	Identifies a noun which has the same form in the singular and plural.
48	A	29.9	30.9	Identifies correct punctuation of attributed direct speech.
49	A	36.2	36.1	Identifies the pair of words that can form a contraction.
50	A	26.3	26.7	Identifies a sentence with a dangling modifier.
51	C	18.2	17.7	Identifies the time sequence signalled by verbs and conjunctions.

Grammar and punctuation — Key messages

Performance

The 2015 Year 5 Language conventions test (items 26 to 51) assessed students' use and knowledge of common grammatical conventions and punctuation in written Standard Australian English. Sixteen items tested aspects of grammar and 10 items tested the correct use of punctuation. Grammatical tasks included identifying the correct use of:

- verb tense, subject–verb agreement and modal auxiliaries
- adjectives to indicate relationships between objects or expand the meaning of nouns and noun groups in sentences
- adverbs to intensify or add information to verbs
- pronouns, prepositions and conjunctions within sentences.

The punctuation items tested knowledge of sentence boundary punctuation, commas to structure a list, capital letters for proper nouns, apostrophes in different contexts and the placement of speech marks for direct speech.

Queensland students outperformed the national cohort on five of the grammar items and two of the punctuation items. On all of the other items the Queensland facility rates were very similar to the national result. It is interesting to note that girls performed better than boys on 22 of the 26 items, scored the same on three items and were one percentage point behind the boys on one item, and that item was about *Tom, the captain of a team*.

The item with the lowest facility rate was item 51 (18%), which required students to identify a time sequence signalled by verbs and conjunctions. This type of item has appeared in the Year 5 Language conventions test paper each year since 2012 and results each year indicate that students find time sequence questions very difficult. The facility rate has not improved. As readers, students need to know that time sequences are not always developed in a way that replicates the sequence of events and, importantly, that the time can be signalled by words other than conjunctions and prepositions and is often signalled subtly in the verb structure, which can be quite complex.

Three items required students to look at clauses in a sentence. The first, item 35, required students to select the correct clause to complete a sentence. Queensland Year 5 students had a facility rate of 67% for this item. Item 46 required students to identify a correctly punctuated sentence and to do this they needed to distinguish the main clause from an interrupting phrase or clause. The facility rate here was only 33%, a marked drop from the previous item. The clause question that caused the most difficulty for students was item 50, with a facility rate of 26%. The difficulty with this item was that students had to remember that the test question asked which sentence was **incorrect**, and they also had to know that the noun and pronoun used in a sentence must agree. In this item, it can be seen in option A that the first clause mentions *students* (plural), and the second clause goes to the singular *you*. The results for these items indicate that

Queensland students require continued work with clause and sentence structure.

Another item that required knowledge of sentence structure was item 38, where students had to correctly combine information from two sentences into one. Two thirds of Queensland students were able to do this. Knowledge of sentence types was also tested, and students must be taught that there are four sentence types: *commands*, *statements*, *questions* and *exclamations*. They need to be able to identify each type. Item 43 asked '*Which sentence is a command?*', and this item had a facility rate of 49%, 3% less than the national facility rate, which indicates that further study in this area is required.

The facility rate for items looking at nouns and pronouns was generally quite high for Queensland students — item 28 (85%), item 33, (79%) and item 41 (64%). Item 47 required students to identify a noun which has the same form in singular and plural. Students found this more difficult, achieving a facility rate of 43%, a 10 percentage point decrease from a similar item tested in 2012. Perhaps some students did not understand the metalanguage, singular and plural, and this should be explicitly taught to them, along with regular and irregular singular and plural nouns. Another teaching point when looking at nouns is the use of articles and determiners. Item 44 required students to choose the correct sentence and to do this they needed to know which sentence had the correct indefinite article. 51% of Queensland students had success with this item and this suggests that further work in this area is necessary.

Year 5 students have shown that they understand basic grammatical structures including the adjectival form of *tight* (*tight tightly tighten tightened*) in item 26, achieving a facility rate of 96%. In item 40, students were asked to identify an adjective in the sentence and, even though they were told that it was a describing word, only 59% of students were successful.

Student understanding of verb forms varied. Most understood the metalanguage *thinking verb* in item 29 and achieved a facility rate slightly above the national rate. Item 37 asked students to identify the correct verb form to maintain tense agreement in a complex sentence, and while 64% of students were successful, this was slightly less than the national rate. Teaching verb forms in conjunction with clause structure will help students to understand the correct Standard Australian English forms and the relationship between verb tense and subject/verb agreement. Particular attention needs to be paid to more difficult verb groups in sophisticated sentences such as those with conditional clauses.

Queensland Year 5 students demonstrated sound knowledge of both adverbs (item 30) and prepositions (item 31), achieving a facility rate above 86 percent for both items, matching the national facility rate.

Results in the different punctuation questions varied. The majority of students demonstrated that they understood the purpose and use of list commas. The standard Australian convention for list punctuation requires commas between items in the list with the exception of the final two items, which should be joined by *and*. Students were not as successful when they had to identify the correct use of commas to separate words interrupting a main clause (item 46) and achieved a facility rate of 33%. To be successful with this type of question, students need to be able to distinguish a main clause from an interrupting phrase or clause and know the related punctuation conventions.

Items requiring knowledge of sentence boundary punctuation did not appear to be a problem. In item 27, 89% of students were able to choose the sentence requiring a question mark. Item 42 required students to identify the correct sentence boundary punctuation in two simple sentences. First the students needed to identify the two sentences and then they had to know the punctuation needed to mark the boundaries of both, i.e. a capital letter and a full stop. Close reading was required in this item as students had to note the punctuation used in each option, particularly where the two sentences meet, and then select the correct option. 67% of Queensland students

were able to do this.

Four items targeted apostrophes. In items 36 and 45, students had to identify which sentence was punctuated correctly. Three of the options in each item contained a word requiring an apostrophe of contraction and one option had a word that required a present tense inflection rather than a contraction apostrophe. Close reading and a sound understanding of the use of apostrophes was required to find the word that did not need an apostrophe. The facility rate for these two items was in line with the national facility rate. In both items 39 and 49 students had to identify the two words that could form a contraction correctly. Although the facility rate for item 39 was 69%, the wording of the stem was difficult. Instead of asking students to show the correct contraction of *she's*, which is already a contraction, it should have asked students '*in which option does the right hand column contain a correct contraction of the words in the left hand column.*' In item 49, students across the nation had difficulty identifying the pair of words that can form a contraction and achieved a facility rate of 36%. To understand the apostrophe of contraction, students need both grammar and spelling knowledge.

Two items (34 and 48) asked students to identify the correct punctuation of direct speech and the facility rates showed a huge variation. The facility rate for item 34 was 80%, while that for item 48 was only 30%. In both items, students needed to understand that quotation marks and their associated commas are used to mark the boundaries between what was said and who said it. This was made easier in item 34 because the comma at the end of the words spoken was given in each option. In item 48, the discrimination between the options was very fine, requiring slow and close reading. Students needed to approach the item with a conscious awareness of what it is about and what they are looking for and needed to check whether or not the words spoken needed to be in quotation marks. The low facility rate on this item suggests the need for explicit teaching in this area.

Implications for teaching

Grammar and punctuation need to be taught in meaningful contexts, so that students connect knowledge of these systems with the way they contribute to meaning making. The metalanguage of grammar and punctuation should be continuously and systematically developed over the years of schooling, in line with the *Australian Curriculum: English*.

In the upper years of primary schooling, it is particularly important to develop student understanding of clause and sentence level grammar. Clauses are the building blocks for extending, enhancing and elaborating simple units of language into more sophisticated structures. The development of knowledge about, and control over, clause structure is a long process. While basic clause structure is introduced into the curriculum in Year 3, the focus in Year 5 is on subordination and the creation of tight, cohesive language units which use the placement of clauses in sentences as a way to highlight particular meanings. As students move to express more complex ideas through their sentences, understanding the role of conjunctions to introduce dependent and independent clauses becomes a powerful tool for developing control over writing. Students need to learn the precise role of conjunctions as they express the logical relationship between clauses. For example, they need to learn that readers can locate action in time quite precisely by the words authors use, e.g.

- subsequent action is shown by the word *since, then, after that, afterward, next, finally, as soon as, soon*
- prior action is shown by words like *at first, until then, earlier, before, until*
- concurrent action is shown by words like *whenever, as, while*.

Understanding the precision of these words will help students answer the sequencing questions and give them the repertoire to improve their writing.

In the same way the students need to learn more literary vocabulary, they need to learn more literary ways of signalling relationships, e.g.

- subsequent action may be signalled by words like *by and by*, *without delay*
- prior action may be signalled by words like *prior to that*, *previously*
- concurrent action may be signalled by words like *meanwhile*, *at the same time*,

In more sophisticated sentences, the conjunctions that signal the relationships between the clauses are left out and readers need to be able to read them in, and to pay attention to the verb structures to recognise the nuances of such aspects as tense. In item 51, students had to read the sentence, *When Amy arrived, John picked up the bag he had packed and they walked to the station*, and determine which action occurred first. Being able to do this is critical to being able to manage higher-order reading questions and being able to craft their writing. In reading, students need to be able to answer the questions *What do I know about ... ?* and *How do I know that?* This builds the reader-writer connection as students develop conscious knowledge that they can then use to craft their writing.

Year 5 writers can also be introduced to the technique of removing the finite elements of the verb to produce more sophisticated sentences. This is where a clause such as *While I was standing by the tree, I was ...* is changed to *Standing by the tree, I was ...*. This technique subtly changes the focus of the sentence so that attention is drawn to the continuing nature of the action. Question 38 in this year's test asked students to engage with this kind of sentence construction.

As students learn to expand sentences, they also need to revisit the related clause and sentence boundary as they mark out these units of meaning with appropriate punctuation.

Please refer to SunLANDA for a detailed analysis of individual test items, including teaching ideas designed to assist with the development of the understanding and skills required by each item. SunLANDA is available to all schools on the QCAA website.

Reading

Results and item descriptions

The percentage columns give the proportion of correct answers (facility rates).
These results are based on provisional data.

Item	Answer	Qld%	Aust%	Description
New Zealand fur seals				
1	A	94.8	95	Locates directly stated information.
2	B	92.3	91.8	Interprets directly stated information.
3	A	94.9	95	Locates information from a map.
4	C	82.9	82.7	Interprets meaning from a photograph.
5	C	74.8	75	Interprets vocabulary to indicate a writer's mood.
Two park signs				
6	D	94.2	94.4	Interprets information from symbols.
7	B	73.2	74.3	Infers the intent of a graphic designer.
8	A	80.8	79.8	Identifies common information across texts.
9	B	64.3	66.4	Infers the meaning of imperative expressions.
10	B	72	74	Infers the purpose of using second person pronouns.
11	C	55.4	55.4	Integrates information to identify overall tone.
12	D	81.5	81.6	Identifies contrast in tone between textual descriptions.
The first moccasins				
13	B	80.9	81	Identifies the complication in a folktale.
14	C	64.1	64.5	Interprets information to make an inference.
15	A	55.6	55	Integrates information to make an inference.
16	D	68.4	69.7	Locates directly stated information.
17	D	62.4	61.3	Identifies the type of text in a folktale.
18	C	59.5	59.3	Identifies the main purpose of a folktale.
The mission				
19	A	59.7	61.7	Infers meaning from a paragraph context.
20	*	47.9	48.4	Interprets directly stated information.
21	A	72.1	72	Interprets the meaning of figurative language.
22	C	41.6	42.4	Interprets a character's response.
23	C	53.6	54.7	Interprets the meaning of a clause.
24	D	56.7	58.3	Identifies a change in a character's attitude.
25	C	30	30.1	Infers a character's role.

Item	Answer	Qld%	Aust%	Description
The honey bee mystery				
26	B	48.2	50.1	Locates directly stated information.
27	D	36.3	38.6	Integrates directly stated information.
28	D	31.8	32.7	Synthesises the main idea of a paragraph.
29	A	22.3	22.9	Identifies the purpose of a sentence.
30	C	53.5	54.5	Infers the reason for an action.
31	D	29.5	29.8	Infers meaning from an idiomatic phrase.
32	A	44.4	47.2	Infers the purpose of a concluding sentence.
Game review: <i>Crawlin' Kitten 2</i>				
33	D	37.8	40.4	Interprets directly stated information.
34	*	18.3	21.1	Interprets figurative language.
35	B	52	53.9	Identifies the purpose of an opening sentence.
36	D	39.5	42.8	Identifies a persuasive technique.
37	A	43.4	46.1	Identifies a reason supporting a writer's stance.
38	B	24.6	22.1	Identifies the use of adjectives to persuade.
39	C	27.1	29.1	Identifies the author's stance.

* **Item 20:** Responses that referred to any two of barking, lights, moving curtains were counted correct.

* **Item 34:** Responses that identified that the game looks easier to play than it actually is were counted correct.

Key messages

Performance

The Year 5 NAPLAN Reading test 2015 consisted of 39 items, based on 6 stimulus passages/units. Three of these units were informative (*Fur seals*, *Two park signs*, *The honey bee mystery*), two were narrative (*The first moccasins*, *The mission*), and the final unit persuasive (*Game review: Crawlin' Kitten 2*).

In general, the performance of Queensland Year 5 students was comparable with the national means for items, with only 6 items less than 2% below those national means. Performance across genres was fairly consistent, with the possible exception of the final persuasive unit, a review of a computer game, where of the 7 items, Queensland students outperformed the national mean on only one, item 38. Interestingly, this item proved to be the most difficult of all the multiple-choice items nationally, requiring students to determine the writer's purpose in including adjectives to describe features of the program under review.

As has historically been the case, students managed the more literal comprehension successfully. Unit one, *Fur seals*, in particular, illustrated this feature of student performance in Queensland. The two narrative units were also handled quite effectively by Queensland students, particularly *First moccasins*. *The mission*, a narrative unit linked to the Year 7 test, consisted of items that generally required higher levels of inference. Nevertheless, Queensland student performance approximated that of the nation.

Of the 39 items, two required students to construct a written response. Item 20, based on *The mission*, required students to identify two pieces of information from the text. Many students were able to accomplish this task successfully, about on par with the national mean. Item 34, from the persuasive text *Game review: Crawlin' Kitten 2*, required students to interpret a figurative

description of the computer game. This item had a very low facility rate nationally (21.1%), but the performance of Year 5 students in Queensland was lower (18.3%). This result, though consistent with previous NAPLAN Reading tests where Queensland students have been less successful in items related to the 'unpacking' of figurative language or items where written responses were required, may be an area requiring attention at the classroom level.

As has been the case in previous Year 5 NAPLAN Reading tests, the performance of girls exceeded that of boys. In fact Queensland Year 5 girls results were equal to or higher than those of boys on 34 of the 39 items. Interestingly though, the relative performance of boys improved on the final two units of the 2015 test, *The honey bee mystery*, and *Game review: Crawl in' Kitten 2*, where boys performed equal to or better than girls on 7 of the 14 items in these units. These two units proved to be the most difficult on the test.

One aspect of some concern in Year 5 performance was the high omit rate for items in the final unit, *Game review: Crawl in' Kitten 2*. An *omit* is where a student fails to select any of the multiple choice options, or fails to provide a constructed response. Eight per cent of Year 5 students chose not to attempt item 34. Several factors may have accounted for this situation, including the unit location in the test (final unit), the subject matter (computer gaming), though this could have been seen to be a quite engaging topic, the level of vocabulary in the text (and options), and the question types provided. With respect to the latter, most items in this set involved higher order comprehension, inference and synthesis. Two items, item 34, which required a written response (9% omit) and item 35 (4% omit) had the most significant number of non-attempts. While it is common for students not to attempt the constructed responses, the high omit rate for item 35 (2536 students) is of significance. This item asked students:

What is the purpose of the first sentence in paragraph 3?

Though a paragraph identifier was used, many students elected not to respond to the question. Questions eliciting *main idea* or *purpose* of a text have traditionally been problematic for Year 5 students in Queensland.

Implications for teaching

Year 5 students have continued to show capacity in answering comprehension items that rely on a more literal understanding of the text. These 'right there' questions, often related to information texts, require reading strategies such as skimming, scanning, recognising sequence, and the more straightforward vocabulary identification and translation.

Items that require higher levels of inferential thinking and analysis are handled less well, but there appears to have been some improvement in this regard in 2015. The range of units (and stimuli) in the NAPLAN Reading test points to the need to provide a rich and varied set of reading resources and opportunities in schools. Within this reading matter, students need to master skills in identifying patterns that lead the reader through the text, making necessary semantic associations, and recognising grammatical features that contribute to meaning making. Strategies that assist with questions requiring the identification of main idea or writer's purpose are of increasing importance from Year 5, so attention to this aspect of reading comprehension is highly desirable. The QCAA website (NAPLAN portal), provides teacher advice papers with specific strategies in this regard.

Please refer to SunLANDA online for a detailed analysis of individual test items, including teaching ideas designed to assist with the development of the understanding and skills required by each item.

SunLANDA Online is available to all schools through the School portal, also on the QCAA website. Additionally, these materials are available to Education Queensland schools through *OneSchool*.

Year 5 Numeracy

Results and item descriptions

The numeracy strands are abbreviated as follows: Algebra, function and pattern (AFP); Measurement, chance and data (MCD); Number (N); Space (S). All items are worth one score point.

The percentage columns give the proportion of correct answers (facility rates).

These results are based on provisional data.

Item	Strand	Answer	Qld%	Aust%	Description
1	N	A	93.5	93.7	Recognises an odd number less than 5.
2	MCD	D	96.8	96.7	Calculates the total with numbers expressed in tally marks.
3	N	B	87	87.4	Calculates the number midway between two given values.
4	S	C	90.3	90.2	Locates a position on an alphanumeric grid.
5	N	B	84.6	85.9	Uses place value to reduce a 4-digit number by 10.
6	S	C	81.4	82.5	Identifies a 3-D object from its net.
7	AFP	A	82.9	83.5	Solves an equation with a missing value.
8	MCD	B	78.6	79.2	Matches data to the columns of a bar graph.
9	MCD	B	67.4	68.2	Interprets a calendar to solve a time problem.
10	S	D	73.8	73.8	Determines the number of cubes in a 3-D stack hidden from view.
11	MCD	D	86	85.4	Interprets the likelihood of an event.
12	S	A	46.4	45.7	Recognises the same shape from a different position.
13	N	A	63.2	65.1	Solves a problem involving interpreting 4-digit numbers, ordinal numbers and time.
14	AFP	D	66.9	68.2	Evaluates number patterns to identify the one that matches the given rule.
15	MCD	C	67.1	69	Interprets a timetable to locate information.
16	AFP	A	66.9	70.4	Solves a problem involving division.
17	N	B	62.4	63.7	Identifies equivalent fractions represented as different area models.
18	MCD	C	63.4	63.9	Interprets the unmarked graduations on a set of scales.
19	N	A	59.3	62.2	Solves a money problem involving multiplication and subtraction.
20	MCD	A	47	49.5	Uses estimation and reasoning to identify a right angle.
21	AFP	18	55.8	59.4	Calculates the missing value in an addition problem.
22	N	C	47.3	51.1	Subtracts four-digit numbers to approximate the age of an object.
23	N	C	49.8	51.8	Solves a word problem involving multiplication and division.

Item	Strand	Answer	Qld%	Aust%	Description
24	S	D	40.2	46.1	Evaluates the properties of several given irregular shapes.
25	N	C	44.8	49.9	Calculates the difference between two 2-digit numbers.
26	MCD	5	49.5	48.4	Solves a problem involving interpreting information in a graph.
27	S	D	48.2	49.1	Identifies the net of a six-edged 3-D object.
28	N	360	41.9	40.7	Interprets the unmarked graduations on a number line.
29	S	D	36.8	33.6	Identifies a final compass point from given directions.
30	MCD	B	30.2	33	Compares the perimeters of four shapes to determine the largest.
31	MCD	C	33	35.6	Solves a problem involving measurement and proportional thinking.
32	S	5	31.6	32.9	Interprets a floor plan to identify a given pathway.
33	MCD	350	24.8	28.6	Solves a time problem involving converting minutes to seconds.
34	AFP	19	16	19.2	Calculates the unknown value in a given word problem.
35	N	41	13.2	16.8	Solves a two-step problem involving money and division.
36	MCD	B	17.6	20.3	Calculates the area of a composite shape.
37	MCD	E	12.1	14.1	Calculates the perimeter of a composite shape.
38	S	B	33.2	34.8	Visualises the result of a reflected 2-D shape.
39	N	19	18.1	21.6	Solves a problem involving multiplication, addition and money.
40	S	3	7.7	10.1	Solves a problem involving scale, division and interpreting a diagram.

Key messages

Performance

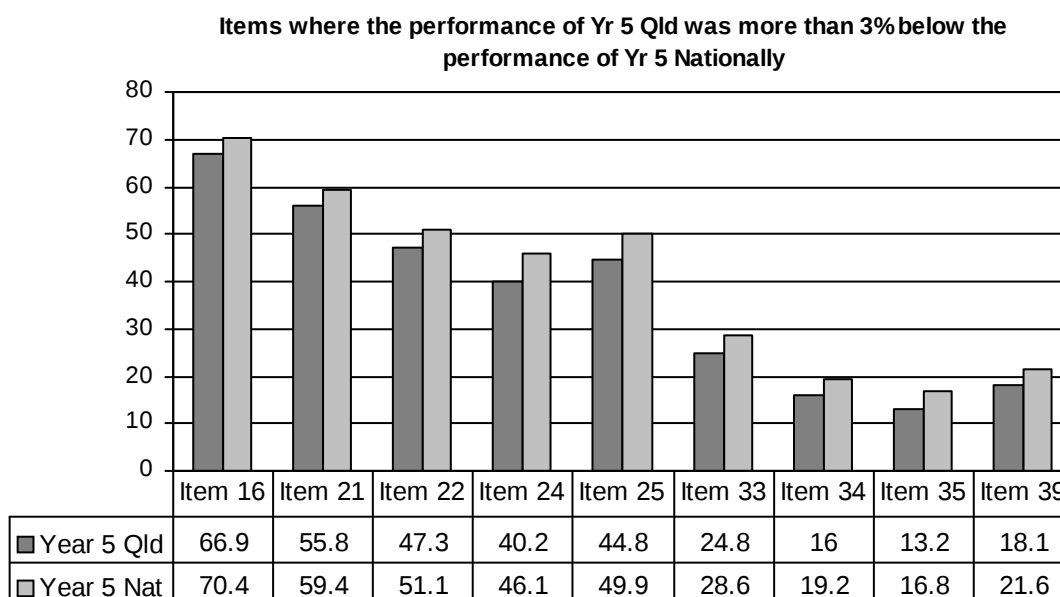
The 2015 Year 5 Numeracy tests used 40 items to test a sample of concepts and abilities from the four substrands of Numeracy. It is a range test, which means that it starts with easy items and gradually increases the difficulty to the most challenging items placed at the end of the tests. It is not a basic skills test and not all students are expected to be able to answer all the items. All Year 5 students across Australia answered the same set of items so Queensland's results can be compared to the larger national cohort.

The range of results for Queensland Year 5 students compared similarly with the national range. In Queensland the easiest item was answered by 96.8% of the students and the hardest by 7.7%. There were 21 items that were answered correctly by more than 50% of the total cohort of Year 5 students. In Queensland, eight of the 40 items were answered correctly by more than 80% of the students. Only 6 of the 40 items were answered correctly by less than 20%.

Items where Queensland students' performance was above the national performance included items 2, 4, 11, 12, 26, 28 and 29. Most of these items were from the *Space, Measurement and*

data strands but one (item 28) came from the *Number* strand, It involved the unmarked graduations on a number line.

For the more challenging items Queensland Year 5 students were more than 3% below the national results. These items are listed in the graph below.



Of these 9 items, 7 involved a type of computation, either addition and subtraction, or multiplication and division. Results from last year were similar where the overall pattern in the data showed that students made errors with items involving computations, in particular where understanding of place value was needed.

Items 21, 22, 25 and 34 involved a subtraction operation and many of the errors made by students indicated that there remains some confusion with renaming or regrouping, e.g. item 21 ($19 + ? + 8 = 45$). In this item students needed to recognise subtraction as the inverse of addition and then do the computation (i.e. calculate the total of 19 and 8 and then subtract it from 45). Many Queensland students answered 28 rather than the correct repose of 18 indicating there may have been some error in the renaming or regrouping. If students subtracted 27 from 45 but did not rename 45 as 3 tens and 15 ones but left it as 4 tens and 15 ones they would provide 28 as the answer.

Similarly, in items 22 and 25 many students (15%) and (18%) demonstrated the same error. For example in item 22 (subtract 1936 from 2015 and express to the nearest 10), students selected 90 rather than 80 as their response. These students may have correctly subtracted 6 ones from 15 ones but have not renamed and then attempted to subtract 3 tens from 11 tens. Interestingly for this item the other common incorrect response was 70, demonstrating either a problem with subtracting, or with rounding numbers to the nearest 10. Item 25 ($36 - 29 = 7$ not 17) was another example of a renaming error.

Multiplication and division calculations made up 20% of the paper and were represented by items 7, 16, 19, 23, 31, 35, 39 and 40. Students in Queensland performed below the national facility rate on all of these item and more than 3% below the national result for items 16, 35 and 39. Teachers may wish to analyse their own class data to see if similar patterns are evident.

From a statewide perspective many of the errors for these items are related to conceptual understandings of multiplication and division and number sense. For example, item 7 ($3 \times ? = 57$) was a relatively easy item (84% correct), however incorrect responses show that many students

selected 29 rather than 19 as their answer. This type of multiplication question could be answered if students recall a known fact, for example $3 \times 2 = 6$. This fact can then be extended to $3 \times 20 = 60$ thereby making $3 \times ? = 57$ easier. Students can next reason that 57 is three less than 60 so if 20 threes make 60, then 19 threes make 57.

Item 16 (*Dan had 62 blocks. He built some towers using these blocks. Each tower was made up of 15 blocks, and there were 2 blocks left over. How many towers did Dan make?*), involved knowing the two models of division, quotition and partition. It also required some understanding of remainders or 'left overs'. If students understand what is meant by the 'left over' blocks they would know to subtract 2 from the 62 before dividing by 15 blocks to find the number of towers that could have been made. It is also possible to work from the distracters and multiply 15 by each of the options to calculate the answer (4). The incorrect responses indicate that 26% of students did not recognise the computation as either multiplication or division and either added or subtracted the given numbers.

Teachers may wish to investigate students' understanding of the four computations and to judge how they select and use them in solving problems.

Implications for teaching

Last year we offered suggestions to teachers regarding the development of students' understandings of computations. Again this year we can see that Queensland Year 5 students' overall performance on items involving addition and subtraction or multiplication and division was slightly down compared to the rest of Australia. Most of these computations required more than one calculation so teachers may need to gather some base line data on how well their students understand the structure and process of the four operations.

Below are some suggested probing questions for teachers to ask students who make simple errors. These students may be experiencing difficulty with the computation or they may have difficulty with two-step word problems. Teachers may want to adapt and use these ideas to develop their own investigation into where the errors may be in the learning sequence.

The first diagnostic probe involves addition and subtraction. The second one will provide some insights into multiplication and division.

Diagnostic probe — Addition and Subtraction

Questions	Sample responses	Comments
Write the fact family for $36 + 45$	$36 + 45 = 81$ $45 + 36 = 81$ $81 - 45 = 36$ $81 - 36 = 45$	Students demonstrate the links between the two computations. 
Write 10 different ways you can calculate 99.	Responses can include all types of computations, not just addition and subtraction. $44 + 55$ $100 - 1$ $\frac{1}{2}$ of 198 10% of 990	Students demonstrate their partitioning skills. Students may only provide addition solutions whereas subtraction and other computations are also okay.
What is the difference between 48 and 19?	29	Students linking the word 'difference' with subtraction or missing addend
What do you need to add to 58 to make 112?	54 Or any combination of addition $50 + 4$ $2 + 50 + 2$	Missing addend type. Do they use addition or subtraction and does it matter? Teachers should note students who are confused and who add both numbers. They will provide 170 as a response.
Solve this problem Sarah thought of a number less than 20 and doubled it. She then subtracted 5. Her answer was 21. What number did Sarah think of at the start?	13	Drawing on the student's ability to use the inverse relationship to work backwards from the answer.
Write the numbers that would complete these computations $12 + ? = 26$ $13 + ? + 19 = 36$ $78 = ? + 54$ $43 - ? = 15$	14 4 24 28	Students will demonstrate how they can move between addition and subtraction to solve these computations. The next step is to embed them into single- and two-step problems.

Questions	Sample responses	Comments
Solve these problems Elizabeth received \$28 doing chores all term. She wanted a toy worth \$15. How much money would she have left over? The ages of two sisters added together make 64. One sister is 29. What is age of the other sister?	\$13 35 years old	Single-step problems
Solve these problems Jim and Kate picked a total of 42 pears. Kate picked 8 more pears than Jim. How many pears did Kate pick? My shopping included a loaf of bread at \$2.95, 3L of milk at \$4.50 and a bag of potatoes at \$3.75. I had a \$20 note. How much change will I receive? Laura buys a cap and a bag. The total cost is \$25. The bag costs \$5 more than the cap. What is the cost of the cap?	25 pears \$8.80 \$10	Two-step problems These are based on the NAPLAN style of problems. Teachers may wish to demonstrate to students various problem-solving techniques that may help solve these types of problems.

Diagnostic probe — Multiplication and Division

Question	Sample response	Comments
Draw pictures to show each of these 3×5 $12 \div 4$		Students answering these types of questions will demonstrate some conceptual understandings. Students may only demonstrate 'groups of'. Teachers may want to prompt the students to demonstrate other ways of showing the multiplication and division concept, i.e. arrays.
Answer these number facts 0×10 21 divided by 3 4×6 45 divided by 9	0 7 24 5	Number facts (any will do but try to keep to the 0, 1, 2, 5, 10 before introducing 3, 4, 6, 7, 8, 9). Recall of number facts will help students solve problems. Students can relate known facts to larger numbers, for example $4 \times 6 = 24$ so $4 \times 60 = 240$.
Write the fact family for $3 \times 6 = 18$	$3 \times 6 = 18$ $6 \times 3 = 18$ $18 \div 6 =$ $18 \div 3 =$	Relating multiplication and division facts. Knowing the inverse relationship will help students with 'seeing' different ways of solving problems.
What do these arrays show OOOO OOOO OOOO OOOOOOO OOOOOOO	3 rows of four 3 fours or 4 threes two rows of seven seven 2s or two sevens	Understanding another model of multiplication.
Solve these $\begin{array}{r} 48 \\ \times 2 \\ \hline \end{array}$ $\begin{array}{r} 35 \\ \times 4 \\ \hline \end{array}$ $\begin{array}{r} 134 \\ \times 5 \\ \hline \end{array}$	96 140 670	Students use known facts to solve multiplication with larger numbers. Teachers may need to watch students solve these problems to observe the strategies used.

Question	Sample response	Comments
Solve these problems Sarah is three times older than her sister. Her sister is 9, how old is Sarah? A BBQ was held for 36 people. Each person ate 3 sausages. How many sausages were eaten?	27 years old 108 sausages	One-step problems These problems are similar to problems on the Year 5 NAPLAN test.
Solve these problems Biscuits are sold in packs of 10. Max wants to give one biscuit to each of his 27 classmates. What is the least number of packets that Max needs? Jake was selling cupcakes and had 4 trays with 10 cupcakes on each tray. It was too squashy so he found one more tray and placed the cupcakes evenly in the 5 trays. How many cupcakes are now on each tray? Use each of these 4 numbers to make the number sentence true. 0, 2, 4, 5 ??? x ? = 2010	3 packets 8 cupcakes $402 \times 5 = 2010$	Multi-step problems These problems are similar to problems on the Year 5 NAPLAN test.

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