

NAPLAN

State report – Year 7

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Government



Queensland Curriculum
& Assessment Authority

For all Queensland schools

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Preface

The QCAA issues State reports on the performance of Queensland students on the National Assessment Program — Literacy and Numeracy (NAPLAN) tests. State reports provide system-level information and are publicly available. This report for Year 7 students in 2017 contains:

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

Who should use this State report?

The NAPLAN State reports help principals, teachers and other school personnel understand, interpret and use information about student performance on NAPLAN.

School principals can use this report to provide information to the school community on aspects of the tests. This would allow professional conversations with their teachers, curriculum leaders, and department heads. Curriculum leaders can use this information to interpret the more specific information given in their school and class reports. These other reports are explained below.

Since this report is publicly available on the QCAA website, it can also inform providers of teacher training, special education services and educational research and policy.

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

About the tests

The purpose of the National Assessment Program (NAP) is to collect information that governments, education authorities and schools can use to identify the important educational skills Australian students can demonstrate. As part of that program, the NAPLAN tests are administered to full cohorts of students in Years 3, 5, 7 and 9 each year. These standardised tests are sources of information about literacy and numeracy learning that can be used to inform educational policy and current educational practice.

The NAPLAN tests were developed using the nationally agreed Statements of Learning for English and Statements of Learning for Mathematics, 2005. Since 2016 however, the tests now directly 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 student understanding in the following areas:

- **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 independently to 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 reason mathematically.

Marking and scoring the tests

Marking the tests

Markers mark those test items that do not use a multiple-choice format. These markers apply nationally-agreed marking guides. There are marking guides for open-ended Reading items if any such items are included. Marking guides allow consistent and reliable judgements by markers. There are guides for the Writing test and one each for the constructed responses in Numeracy and Spelling. For some Numeracy items, students may provide a correct response in different forms. Professional officers decide on agreed scoring protocols for these items.

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, Reading and Numeracy tests are marked as either correct or incorrect. Raw scores for the Writing test are sums of the marks on each of ten criteria.

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.

Constructing scaled scores and bands

To make raw scores more useful, they are transferred to scores on a common scale that reflects how difficult it was to achieve each score. Each year ACARA publishes equivalence tables that allow a student's raw score to be located on the NAPLAN scale. 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 successive years of testing. For example, a raw score of 20 on the Year 3 Reading test might be transformed to a scaled score of 354. This will also represent the same achievement for a student with the same scaled score in Year 5, and for a student with the same scaled score for Reading in a previous year.

Each NAPLAN scale is divided into ten bands used to report student progress.

Using NAPLAN reports to inform teaching and learning

Using scaled scores

The scaled score can compare the results of different students. Scaled scores provide a basis for measuring and comparing students' abilities across years of schooling, for example, comparing a student's result in Year 3 in 2015 and Year 5 in 2017. The scales can thus help to monitor the growth of groups of students over time. This enables the school to review and/or consolidate special programs that may have been put in place.

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.

Using item analysis

While the national and state reports provide the comparative data, class reports 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 of students.

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. As mentioned below, more detailed analysis by QCAA staff is available from the QCAA website.

Steps for analysis might be as follows:

- Compare the facility rates (percentage correct) achieved by the school's students with the national and state results available in this document. Is their performance consistent?
- 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, and are found in the item analyses that are part of SunLANDA Online).
- Form hypotheses about why students are making these errors, e.g.
 - How did students think about this aspect of the 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 may then test these hypotheses to see whether they are valid or whether there is more to be thought about and investigated. Teachers can then plan lessons related to the general areas where students seem to need help. Teachers can also 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.

Placing the tests in the assessment context

The results from the NAPLAN tests should be seen as only one input into a school's assessment program. Various forms of assessment are needed to inform the different stages of the teaching and learning cycle. Principals and teachers should keep in mind that NAPLAN is a pencil-and-paper, point-in-time, timed test that can only cover a few curriculum features.

The results from a school's own assessments of students should be consistent with the NAPLAN test results. 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.

An item with a low facility rate (percentage correct) 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.

Other NAPLAN reports

In addition to the State reports, the following reports are produced:

SunLANDA Online

Since 2015, student data has been released on the QCAA School Portal using the SunLANDA Online interface. State schools can access the data through One School. Access to SunLANDA as application software is also still available on the QCAA website.

SunLANDA Online provides class and school information in an electronic form that permits customised spreadsheet generation by users. In addition, it shows representative samples of students' incorrect responses to constructed responses where applicable. Hyperlinks from within SunLANDA Online lead to the QCAA's test item analysis. Information on how to use this service is available at: www.qcaa.qld.edu.au/p-10/naplan/test-reporting-analysis/sunlanda/accessing-navigating-sunlanda

Test Item analysis

These pdf documents contain analysis of each test item. They can be downloaded directly from the QCAA website. The analysis reproduces each item followed by expert analyses of how the item operated. It shows the distractors presented in multiple-choice items and explains students' reasoning.

School and class reports

The NAPLAN school and class reports are supplied electronically on the secure section of the QCAA website. 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.

School reports

The QCAA issues NAPLAN School reports giving information about each school's performance. 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 scaled scores
- distribution of achievement bands
- school and state means
- participation of the group.

The School report positions a school's performance within the state on a graph that is shaded to show the range of performance for the middle 60% of Queensland students together with the state mean.

Class reports

The QCAA issues NAPLAN class reports that show the performance of every student on every item. Under the name of each student is recorded the items they had correct and incorrect. They also show students' responses to constructed-response items.

The class report also gives the:

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

Individual student reports

The QCAA issues individual student reports to schools after the tests. Schools receive one printed report for each student to distribute to parents/carers.

ACARA Reports

As well as the Queensland reports from the QCAA, national reports are available from the website of the Australian Curriculum Assessment and Reporting Authority (ACARA). The *NAPLAN National Summary Report* and the *NAPLAN National Report* allow states and territories to place the achievement of their students in relation to their peers across the nation. This is system-level information and is publicly available.

Literacy

Writing

Stimulus (writing prompt) Years 7 & 9

YEAR 7 AND YEAR 9

Don't waste it

Write to persuade a reader why something you care about should not be wasted or thrown away.

Choose something that you think should be re-used or recycled, or kept forever.

It might be a part of the environment like a river or a mountain, or a resource such as water. It might be something made by humans such as a building or a machine. It could be something that you can't see or touch, like time, a talent, a value, a tradition or an opportunity.

- **Start with an introduction.**
An introduction lets a reader know what you are going to write about.
- **Write your opinions on the topic.**
Give reasons for your opinions.
Explain your reasons.
- **Finish with a conclusion.**
A conclusion sums up your reasons so that a reader is convinced of your opinions.

Remember to:

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

About the task

In 2017, the NAPLAN Writing test was based on the persuasive genre. As was the case in the past two years, two prompts were used: one for Years 3 & 5 and another for Years 7 & 9. 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 2017 prompt for Years 7 & 9 was titled *Don't waste it*. Students were asked, in the textual component of the prompt, to:

Write to persuade a reader why something you care about should not be wasted or thrown away.

Choose something that you think should be re-used or recycled, or kept forever.

Additional textual information was provided. This named the structural components, and further defined these elements, e.g. Start with an introduction. An introduction lets the reader know what you are going to write about. Other notes were also provided in relation to the conventions associated with the writing task, e.g. write in sentences, check and edit your writing etc. A montage of stylised images surrounded the text, covering a range of possible topics/ideas such as a sun (global warming or renewable energy), a tap (water conservation), a clock (time) etc.

The prompt was relatively open-ended, allowing students to base their writing on one or more of the images provided, or compose their own text around a particular idea.

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 Queensland teachers marked the NAPLAN Writing test scripts. 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 2017, referee marking continued, further ensuring marking reliability. There was also provision for appeal over individual Writing test scores after the results were released. On appeal, a student's script was re-marked independently by two senior Writing test markers.

An earlier version of the NAPLAN Persuasive writing marking guide is available at:
www.nap.edu.au/_resources/Amended_2013_Persuasive_Writing_Marking_Guide_With_cover.pdf

Performance

There seems little doubt that the 2017 prompt was particularly suited to students in Years 7 & 9, with the content likely to be evident in a range of secondary learning areas such as English, Science and Humanities and Social Science. For the most part, students elected to focus on strongly environmental issues such as the excessive use of plastic, conservation of water, the renewable/non-renewable debate etc. Students who diverged from these more obvious responses were able to explore more abstract subjects such as time, love, relationships, memories etc., and generally, though not exclusively, wrote with greater proficiency. A small group of students successfully negotiated generalised territories such as writing a persuasive text purely on subjects like 'taking opportunities', without even providing more specific threads of information. In many cases though, this broader generalised approach ran out of substance. Undoubtedly this year, students were more acquainted with the topics of their choice, and could 'flesh out' arguments with plausible supporting detail. Some students' field knowledge, such as damage to the Barrier Reef and the need for its preservation, was truly remarkable.

In most cases, students in Years 7 & 9 showed competence with the persuasive form. Introductions provided more natural orientation for the reader, with quite passionate statements of position often presented. For example:

Clean, fresh and pure. This was what the air of the world used to be like. Now it has been tainted, riddled with large amounts of carbon dioxide and fumes from man-made products. The air is balancing on a fragile scale that has nearly been tipped. You need to care about the air. (Year 9 student)

As previously indicated, the body of texts tended to be more substantial and showed accurate use of credible information. The use of improbable data, quotation etc. was less evident than in 2015, the most recent Persuasive Writing test. Teachers should be wary of approaches to writing

that suggest the inclusion of implausible data or dubious supporting evidence attributed to some 'invented' authority. Markers are trained to accept what is on the page at face value, but irrelevant or erroneous information does little to support a writer's point of view, particularly at the higher end of the writing spectrum.

Though time in a demand writing task obviously affects the way in which student writing concludes, many responses included only a brief summation or re-statement of the text. Those students who, in conclusion, challenged the reader to fully consider the arguments presented produced highly effective closure to their writing, as the following extract demonstrates:

In conclusion, it would be catastrophic to lose handwriting. In a way, it articulates who we are! Without it, we are blank and homogenous. It increases our finger strength, fine motor skills, is always at hand, and bolsters out creativity. More physical skill. More convenience. More creativity. Handwriting will always be a part of who we are. (Year 7 student)

There was a relative improvement in Writing test performance compared to 2016 (narrative genre) and 2015 (last persuasive genre tested.) Most notably, students in Years 7 & 9 performed strongly in the criteria of Audience and Ideas. The appropriateness of the prompt may have been a contributing factor here. However, there was some gain in other skills-related criteria, such as Spelling and Sentence Structure (Year 9). Field familiarity may have contributed to spelling improvement, and it appears that students are gaining a stronger grasp of the causal and conditional grammatical clause forms associated with the persuasive genre. There remains room for improvement in the criterion of Punctuation. The use of 'run-on' sentence forms, often associated with the use of 'splice commas' as breaks, is a significant factor. Much of this has to do with the shift from oral to written language modes. The formalities associated with writing, in test conditions and elsewhere, need constant attention in writing programs. Punctuation can easily become a casualty of contemporary communication forms if it is not dealt with through a rigorous and contextualised writing program, closely associated with reading good-quality published texts.

Sample script

WRITING

One of the world's most famous netball players, Claire McMenamin, once said at a Firebirds dinner; "lots of young people today, if you ask them, don't know their good qualities". In today's society, we get so caught up in our image, we don't know ourselves as a person. You might say, "But I love Justin Bieber!" or "Gumpy Cat is a part of me!", but really, let's face it, there are hundreds, if not thousands of people who would say that. You are unique. Stop following Instagram posts and start following your dreams. When you were little, you might have wanted to be a ballerina, or a soccer player. So why are you just sitting around instead of getting dance lessons, or soccer training. The world is being wasted, and so is life. As a young member of this community, it's sad to see it happen.

So many people these days are too caught up with other people. Ask any kid what Whip Nae Nae is and they'll know. But ask people what they do in their spare time and you will almost certainly have to wait for an answer. Kind of sad, don't you think? The next generation knows about all the celebs, but they know nothing about themselves. They know all about scandals in the US, but don't know what they individually want to do except watch TV, or go on their devices.

Everyone knows that good comes to those who wait. But that doesn't mean you can sit around waiting for "good" to come. You should be out there chasing down "great"

DO NOT WRITE OUTSIDE THE BORDER

WRITING

on "fantastic". If you hunt for long enough, maybe a "phenomenal." But no. You can just laze around waiting for "good," if that's what you want. (That was sarcasm, of course you can't be happy with good".) You need to seize the day and throttle it, give it the heimlich manoeuvre, and kick it halfway across the world instead of reading up on celebrity couples. Because you might lose the moon while counting the stars.

Do you like looking good in selfies? Having the light at just the right angle? That's right, I'm going to tell you to stop focusing on your screen, and start focusing on your life (is that, what, the billionth time I've said it?). Maybe you could go for a walk, or to a café with yourself. It's been a while since you caught up. Maybe you should & relive some memories. Have your perspective on life at the right angle. Hunt for "fantastic". Meet yourself. You might even make a friend you never knew you had (I'm talking about you). Don't waste your life. Don't waste your happiness. Don't waste you.

DO NOT WRITE OUTSIDE THE BORDER

Commentary on sample script

In a quite sophisticated text, this Year 7 student has carefully and cogently developed an argument around the need for young people to forgo the current infatuation with the artificial world of social media, celebrity and fame, and direct their attention to the strengths and capacities found within themselves. Broadly, the text is a call to action for the young to firstly recognise, and then to not waste those opportunities presented to them.

The argument is slowly and carefully developed. The introductory paragraph uses a quotation (which appears credible) from a champion netballer: *Lots of young people today, if you ask them, don't know their good qualities*. This observation is then contrasted with the current obsession of the young to have a far greater awareness of famous celebrities than of themselves. The thesis statement, *The world is being wasted, and so is life. As a young member of this community, it's sad to see it happen* marks the end of the introduction, and links directly to the body of the text, where the broad themes of our current misguided fascination with media idols and the urgency of raising life expectations are elaborated. The conclusion cleverly uses an extended photographic metaphor to highlight how young people need to *Meet yourself, find ...perspective on life at the right angle*, and not to *...waste you*.

The text provides a strong example of how essentially one 'big' idea can be effectively developed in a persuasive text. The thesis is supported through quotation (both acknowledged and paraphrased), anecdotes, relevant examples, figures of speech, and word play to provide a high level of substance to a theme that could have easily become glib.

Part of the appeal of the text lies in the ability of the writer to engage with the reader at an appropriate level. On the one hand, the writer works within familiar contexts and examples. On the other, she steps outside of these contexts and draws powerful conclusions about the sometimes misguided emphases and understandings of the *next generation*. The personal tone, *As a young member of this community, (That was sarcasm, of course ...), I'm going to tell you ...*, helps soften slightly the otherwise strongly imperative mood, evidenced throughout, but particularly in the conclusion. *Don't waste your life. Don't waste your happiness. Don't waste you.*

A strong command of vocabulary, and language in general, is evident in the text. The cline, built around *...that good comes to those who wait. (good, great, fantastic, phenomenal)* is a clever and highly effective construct. The final paragraph metaphor, merging *selfies* with the *...light at the right angle*, with *...focusing on your life* and having the *...perspective on life at the right angle* illustrates the writer's command of language beyond the literal. Sentence structure, too, is sophisticated in form, meeting the high NAPLAN score range demand for 'quantity, quality and variety'. Extended complex sentences are interspersed with rhetorical devices and punchy simple sentences and fragments for effect. (*You are unique., But no., That's right, Meet yourself.*)

And in keeping with the overall quality of the writing, the skills area is equally well handled by this young writer. In spelling, over 20 words would be classified as difficult or challenging according to the NAPLAN rubric. The use of the *To* instead of *Too* in paragraph 2 was regarded as a minor slip, given that the words were used and spelt correctly elsewhere in the text, and this was the sole spelling error. Punctuation was strong, also, with many examples of the correct use of 'Other' punctuation, such as commas separating clauses, apostrophes of possession (with one exception), contractions, brackets etc. Sentence level punctuation was correct, with the absence of just one question mark in paragraph 1. In all though, the true test of punctuation, to signpost and pace the text in support of the reader, was clearly realised.

Language conventions

Spelling

Results and item descriptions

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

Item	Answer	Qld %	Aust %	Description
Proof-reading — Error identified				
1	loaded	89.75	89.69	Correctly spells a two-syllable word with the vowel digraph -oa-.
2	leather	93.11	93.38	Correctly spells a two-syllable word with the vowel digraph -ea-.
3	figure	58.12	60.79	Correctly spells a two-syllable word with the ending -ure.
4	themselves	69.9	71.03	Correctly spells a two-syllable word with a -ves ending.
5	spectator	66.85	67.13	Correctly spells a three-syllable word with the ending -or.
6	reasonable	69.54	69.3	Correctly spells a multisyllable word with the suffix -able.
7	saucepan	42.23	47.08	Correctly spells a two-syllable compound word with the vowel digraph -au-.
8	politely	47.78	49.38	Correctly spells a three-syllable word with the -ly suffix.
9	observance	63.58	64.58	Correctly spells a three-syllable word with the suffix -ance requiring an -e drop.
10	indigenous	34.03	36.96	Correctly spells a multisyllable word with a schwa sound.
11	columns	32.75	31.91	Correctly spells a two-syllable plural word with a silent letter -n-.
12	discipline	17.94	20.34	Correctly spells a three-syllable word with the consonant digraph -sc-.
13	mischievous	6.44	7.9	Correctly spells a three-syllable word with a schwa sound.
Proofreading — Error not identified				
14	remove	95.31	95.04	Identifies an error, then correctly spells a two-syllable word with the prefix re-.
15	interesting	71.1	71.83	Identifies an error, then correctly spells a multisyllable word with an elided syllable.
16	women	61.86	63.97	Identifies an error, then correctly spells a two-syllable irregular plural word.

17	cooperate	46.29	51.21	Identifies an error, then correctly spells a multisyllable word with the prefix co- and the base word beginning with -o-.
18	vegetation	50.4	49.1	Identifies an error, then correctly spells a multisyllable word with a schwa sound.
19	fossil	38.29	38.34	Identifies an error, then correctly spells a two-syllable word with an -il ending.
20	deliberate	44.12	44.62	Identifies an error, then correctly spells a multisyllable word with an elided syllable.
21	exercises	21.85	23.38	Identifies an error, then correctly spells a multisyllable word with -x- representing two sound values.
22	haphazard	19.22	20.8	Identifies an error, then correctly spells a three-syllable word with an unstressed final syllable.
23	camouflage	14.66	13.3	Identifies an error, then correctly spells a three-syllable word with an uncommon letter pattern.
24	acquaintance	16.5	17.64	Identifies an error, then correctly spells a three-syllable word with the suffix -ance.
25	resuscitated	5.25	5.41	Identifies an error, then correctly spells a multisyllable word with a schwa sound.

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About the test

- The 2017 Year 7 test involved the following spelling features:
- *Schwa vowel ('uh')*: 'Schwa' is a neutral vowel sound. Its spelling cannot be 'sounded out'.

Knowing how to spell words with the schwa involves knowing:

the spelling of prefixes and suffixes, e.g. **remove**, **spectator**, **indigenous**, **observance**, **figure**
vowel alternation patterns in affixed words, e.g. **disciple** to **discipline**, **mischief** to **mischievous**,
vegetable to **vegetation**, **cite** to **resuscitated**

the visual look of a stock of mature vocabulary words, e.g. **haphazard**, **camouflage**, **fossil**

- The words *interesting* and *deliberate* have silent or 'elided' vowels.
- *Soft s*: The soft s sound was tested with the digraph *sc* (*discipline*, *resuscitated*), with *ss* (*fossil*) and with *c* alone (*saucepan*, *exercise*, *observance*).
- Affixes were tested in **cooperate**, **reasonable**, **observance**, **acquaintance**, **indigenous**, and **mischievous**.
- *Inflections*: Anglo-Saxon inflections were tested in *woman/women* and *self/selves*.
- Complex vowels: Stressed vowel sounds were tested in **loaded**, **leather**, **saucepan** and **politely**.

Performance

- Queensland students' facility was a little lower than the national average on most spelling words, especially *cooperate* and *saucepan*. Queensland was a little higher on *camouflage* and *vegetation*.

- The results should be interpreted in the context of the proofreading formats of the test items. In a proofreading test, the distractor words and the supplied errors in the target words can affect student behaviour. For example, many of the students who spelled *exercise*, *discipline* and *woman* incorrectly in this test might spell them correctly in a dictation test or in their written compositions. Reports on each item can be found through the SunLANDA program or as PDF documents at <https://www.qcaa.qld.edu.au/p-10/naplan/test-reporting-analysis/test-item-analysis>
- Attempts by students to ‘sound out’ letters is often evident, e.g. ‘vegetation’, ‘columns’ and ‘intresting’. This is an especially ineffective strategy for spelling words that contain a neutral vowel, elided syllable or silent letter.
- Phonetic attempts also led students astray with the word *discipline*, which was presented to students with the schwa vowel spelled correctly but with an error elsewhere. Many students rushed to respell the schwa (e.g. as *disapline* (22%)). Instead, they should have thought about the related word, *disciple*, which reveals the *i* spelling of the vowel is correct.
- Student attempts to spell *saucepan* make it plain that many do not understand how spelling involves meaning; 30% of students tried to spell it as ‘sourcepan’. They should, instead, have reflected on the obvious relevance of *sauces* to *pans*!

Implications for teaching

- 1. The test results show Year 7 students’ continuing inappropriate use of ‘sounding out’ strategies. They need to learn the other ways that English spelling represents words.

In particular, they have to know that suffixes and inflections have grammatical effects. It is not possible, for example, to use a past tense inflection, -ed, on an adjective such as *haphazard*. Affixes have stable spellings themselves and they have regular spelling effects on base words.

- 2. Students need to build a mature vocabulary. Word study belongs in all their subjects, not just English. Students should learn:

the pronunciation of advanced words and their look when written on the page

the meaning of their component morphemes (word parts)

other words built from the same stem.

- 3. In subject English, spelling lessons should focus on regular patterns, not on random ‘hard’ words. For example, the suffix -ous could be studied along with other suffixes that form adjectives, such as -y, -able, -acious, -ic, -al, -ish, and -est. From another angle, -ous words can be divided into those with a ‘sh’ sound, e.g. *audacious*, and those without (e.g. *indigenous*). Exceptions, rarities and oddballs should be noted as well as the general patterns.

- 4. Proofreading skills should be taught as an authentic writing skill. This will also help students read test questions carefully.

QCAA resources

- Teaching implications for each item are published in the item analysis documents available through the SunLANDA program or as PDF documents at <https://www.qcaa.qld.edu.au/p-10/naplan/test-reporting-analysis/test-item-analysis>

Grammar and punctuation

Results and item descriptions

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

Item	Answer	Qld%	Aust%	Description
26	B	97.28	97.45	Identifies the correct modal operator in a complex sentence.
27	C	95.04	95.32	Identifies a word that cohesively links two parts of a complex sentence (synonymy).
28	C	91.44	91.41	Identifies the correct verb indicating future tense in a compound sentence.
29	D	71.81	73.04	Identifies a word that cohesively links two parts of a compound sentence (pronoun reference).
30	C	77.03	78.09	Identifies the correct contraction and pronoun in a complex sentence.
31	B	69.91	69.63	Identifies the correct placement of quotation marks for direct speech with internal attribution.
32	A	68.7	70.82	Identifies the correct placement of clause commas in a complex sentence.
33	B	54.5	56.32	Identifies an error in colon use.
34	000110 000100 0010 *	54.52	59.49	Identifies sentences related to common text types.
35	011010 01 **	31.87	30.98	Identifies main and subordinate clauses in complex sentences.
36	A	44.64	46.08	Identifies the correct use of brackets in a simple sentence.
37	D	54.18	54.47	Identifies the correct relative pronoun to complete a complex sentence.
38	A	54.19	53.9	Identifies the correct placement of quotation marks for direct speech with internal attribution.
39	A	51.5	52.13	Identifies the last event in a series in a complex sentence.
40	AB	39.66	39.4	Identifies the correct placement of clause commas in a complex sentence.
41	D	42.88	43.16	Identifies that a verb and preposition correctly complete a sentence.
42	B	43.94	44.01	Identifies the sentence using a specified noun group as the

				grammatical subject.
43	B	36.99	35.77	Identifies a sentence containing reported speech.
44	B	37.37	39.6	Identifies the correct use of an adverb in a simple sentence.
45	D	29.22	28.41	Identifies that a plural possessive correctly completes a sentence.
46	D	43.64	44.24	Identifies the sentence which coherently combines information from three separate sentences.
47	C	14.28	15.58	Identifies a correct question tag.
48	BE	13.11	12.27	Identifies two nouns that become adjectives when the suffix -al is added to them.
49	BD	35.55	37.25	Identifies two subordinate clauses that can be embedded to add detail about the subject of a sentence.
50	CD	8.55	9.18	Identifies two possessives that correctly complete a sentence.

* Answers in sequence: procedure, persuasive, narrative, information

** Answers in sequence: subordinate, main, main, subordinate

About the test

- The NAPLAN Language conventions items test sentence-level, clause-level and word-level skills. The test does not cover the curriculum. Instead, it tells how a large number of students perform on a small range of tasks. Standardised tests can, however, suggest broad trends across a cohort. At the level of individual students, NAPLAN results can supplement classroom assessments and guide teachers to important points of grammar and punctuation that need revisiting.
- Some of the more fundamental word/clause/sentence level skills tested in the Year 7 test in 2017 included speech attribution, use of apostrophes of possession and contraction, the structure of nominal groups, the use of end marks and adverbial constructs, as follows:

the correct use of quotation marks in direct speech with internal attribution (Item 31)

plural possessives (Item 45)

forming adjectives from nouns (Item 48)

using adverbs correctly (Item 44).

Performance

- Results of Queensland Year 7 students in grammar and punctuation continue to be comparable, both with those of previous years, and with the performance of the national cohort. This similarity of performance from year to year is partly an artefact of the test and its construction. About 50% of Queensland facility rates were at or above the national facility rates. Three items that showed some disparity from the national performance were Items 32 (clause commas), 34 (identifying written genres) and 44 (correct use of an adverb). Item 44 was an unusually constructed item that may have generated some formatting confusion among students.

Implications for teaching

- Schools and teachers are sometimes in a quandary about how to respond to the areas of grammar and punctuation as they are presented in the NAPLAN test environment and impact on students. Grammar and punctuation are not separate areas in their own right, but rather integrated components of reading and writing. Yet the NAPLAN test does focus on discrete word and sentence level language features. How then, do we best approach the teaching of grammar and punctuation within this testing paradox?
- Literacy teaching within this domain should reflect a double-edged approach. We should teach how a sentence fits into a wider text. The theme and purpose of the text in which a sentence appears governs choices about the sentence's pronouns, its verb tense, its order of components (subject, verb and object) and its elaborations. The more fundamental word/clause/sentence level skills contribute to meaning-making over a text or a sizable chunk of text such as a paragraph.
- Drawing students' attention to how speech is either directly stated or reported in a range of fiction texts contextualises the learning of this language feature.

Mini-lessons

- There is also scope, however, for short, focused lessons on the elemental feature of grammar and punctuation that NAPLAN targets. The application of grammatical and punctuation 'rules' previously taught in succinct micro-lessons could improve student success on test items as well as improve their fluency in writing.

Testwiseness

- To combat the problem of students facing many difficult questions throughout the last part of the test, ensure students understand the more complicated formats and features of those more difficult items. Items 34 and 35, for instance, may have proved confusing to students, because of either the question layout, or the metalanguage that was included in the options. The need for students to maintain persistence and to be systematic in their approaches to test items should be reiterated wherever possible.
- Although NAPLAN is a test of written, standard, Australian English, it often uses example sentences that are from informal, spoken situations. Familiarity with diverse types of texts may help students to be more confident in viewing the NAPLAN items. Guide students through notable grammar and punctuation in a wide selection of reading materials, including texts that are challenging and divergent in form. In the 2017 test, for instance, Item 43 asked students to identify *indirect speech*.

Metalanguage

- Increasingly, success in the NAPLAN grammar and punctuation test depends on a student's knowledge of metalinguistic terminology. Words in item stems or options included: *procedure text*, *subordinate clause*, *main clause*, *reported (indirect) speech*, *adjectives*, *suffix*, *clauses*.
- Students and teachers need a common language to talk about the language used in reading and writing. The Australian Curriculum outlines the kinds of terms that students should know and a more detailed scope and sequence is cited below.

QCAA resources

- Please refer to SunLANDA, which is available to schools via the School Portal on the QCAA website through the school BIC and password. The SunLANDA program displays the school's results but also links to detailed analysis of every item on the NAPLAN test. The analyses include Australian Curriculum links, language resource texts and other QCAA materials.

- For information about the full range of grammar knowledge Year 7 students should have, refer to the Australian Curriculum English.

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
<i>Saving the golden frogs</i>				
1	A	93.68	93.97	Links directly stated information across sentences in a simple article.
2	B	95.74	95.88	Identifies the main purpose of a paragraph in a simple article.
3	D	93.98	93.92	Identifies the main purpose of a simple article.
4	D	76.93	74.76	Links directly stated information across paragraphs in a simple article.
5	D	68.41	67.89	Identifies the purpose of a photograph in a simple article.
<i>Win the Speedster 200X</i>				
6	A	89.52	89.82	Interprets a character's feelings at the end of a simple narrative.
7	C	96.69	97.25	Locates directly stated information in a multi-text.
8	A	95.1	95.36	Interprets directly stated information in a multi-text.
9	C	84.35	83.5	Interprets directly stated information in a multi-text.
10	B	80.14	80.5	Interprets a pronoun reference across paragraphs in a multi-text.
11	B	71.08	71.08	Interprets the meaning of idiomatic language in a multi-text.
<i>Beached</i>				
12	C	79.91	79.01	Interprets directly stated information in a narrative.
13	A	71.6	70.61	Identifies the reason for a character's actions in a narrative.
14	A	83.14	83.9	Links information across sentences in a narrative.
15	D	40.8	41.63	Identifies a change in a character's perspective in a narrative.

16	C	85.08	85.15	Locates directly stated information in a narrative.
17	B	82.88	83.54	Interprets directly stated information in a narrative.
<i>Get on board!</i>				
18	B	86.79	85.79	Identifies the main purpose of a persuasive text.
19	A	81.04	82.42	Identifies the purpose of an introductory sentence in a persuasive text.
20	100110	63.17	66.4	Categorises directly stated information in a persuasive text.
21	C	57.78	59.52	Interprets the meaning of a phrase in context in a persuasive text.
22	B	69.01	70.74	Interprets the effect of text layout in a persuasive text.
<i>Fit to reveal fitness?</i>				
23	D	56.77	59.11	Identifies the main idea of a persuasive article.
24	B	78.13	78.63	Identifies the main purpose of a sentence in a persuasive article.
25	C	47.88	49.83	Interprets the meaning of complex language in a persuasive article.
26	D	41.04	44.21	Interprets the meaning of vocabulary in context in a persuasive article.
27	A	55.15	57.76	Locates directly stated information embedded in a paragraph in a persuasive article.
28	C	59.47	61.1	Identifies the purpose of evidence in a persuasive article.
29	D	40.22	43.09	Identifies the purpose of italics in a persuasive article.
<i>Star struck</i>				
30	C	64.09	64.48	Identifies a central theme of a detailed first-person narrative.
31	C	62.44	61.27	Analyses the effect of an introductory sentence in a detailed first-person narrative.
32	B	66.85	67.96	Interprets a pronoun reference across paragraphs in a detailed first-person narrative.
33	D	56.21	58.83	Interprets the meaning of vocabulary in context in a detailed first-person narrative.
34	1;3;5;4;2	14.83	15.37	Sequences events from a detailed first-person

				narrative.
<i>Seeing stars</i>				
35	D	40.5	38.67	Identifies the use of a metaphor in a detailed information text.
36	B	69	69.12	Interprets the meaning of vocabulary from context in a detailed information text.
37	A	47.28	48.7	Analyses the author's perspective implicit in a sentence from a detailed information text.
38	BF	26.28	27.58	Interprets directly stated information in a detailed information text.
39	5;2;4;1;3	8.5	9.36	Analyses the flow of an argument in a detailed information text.
<i>Star struck and Seeing stars</i>				
40	D	39.17	42.12	Applies a character's perspective to a scenario across two texts on a similar theme.
41	CD	13.39	14.05	Identifies similar information across two texts on a similar theme.
<i>Let me fix that ruin for you</i>				
42	A	36.1	38.08	Identifies the purpose of an example in a detailed persuasive text.
43	C	46.24	48.15	Identifies the genre of a detailed persuasive text.
44	B	42.46	44.74	Identifies the purpose of scare quotes in a detailed persuasive text.
45	C	64.93	67.59	Interprets the meaning of vocabulary in context in a detailed persuasive text.
46	C	52.13	52.6	Identifies a key argument in a detailed persuasive text.
47	A	48.89	51.23	Interprets the meaning of a phrase from context in a detailed persuasive text.
48	D	45.66	46.78	Interprets the meaning of figurative language in context in a detailed persuasive text.

About the test

- This year the Year 7 Reading test consisted of 48 items based on eight reading magazine units spanning the genres of **information** (two texts), **persuasion** (three texts) and **imaginative-narrative** (three texts). The magazine also included a 'multi-text' (a simple narrative combined with a competition entry form). Some of the texts in this year's magazine did not fit easily into any of these categories. For example, *Let me fix that ruin for you* is categorised as a persuasive text

but does not contain an explicit statement of the writer's position. Instead the writer provides both sides of the issue and opinion is conveyed through the use of rhetorical questions. This has implications for Item 48, which asked the students to identify the text as a discussion rather than an argument.

- There were no short-response items for Year 7 this year. However, a number of items diverged from the single-answer, multiple-choice format. Items 38 and 41 required students to choose two answers. Items 34 and 39 required students to sequence information in the order in which it was presented in the text and Item 20 presented information in table format (students were instructed to *Shade one bubble in each row*). The facility rates for each of these items (with the exception of Item 20) were very low.
- Teachers can view school-specific performance information through the QCAA's SunLANDA program. SunLANDA is available on-line through the School Portal on the QCAA home page. State schools can also access this content through OneSchool. SunLANDA displays the performance of classes, subgroups, and individuals within the school and compares the school's performance with that of the state and nation. Most importantly, hyperlinked to each item are the analyses and teaching ideas to help teachers and students with this type of question.

Performance

- The percentage of Queensland students performing at or above the national minimum standard in reading (93.8%) was just below the nation (93.9%). There was an increasing level of difficulty across the reading test, with facility rates decreasing most significantly from Unit 5, *Fit to reveal fitness?*, through to the remaining units. The relatively high facility rates for the first four units can be attributed to the prevalence of literal items within each unit. The first four texts were also fairly simple in terms of structure and language use. *Saving the golden frogs* is a short information text with very few technical terms. *Win the Speedster 200X* combines two genres – a competition entry form and a narrative about a girl completing the entry form. *Beached* is a more traditional narrative that posed very few challenges for the reader. However, the facility rate for Item 15 was fairly low (40.8%) as it required students to interpret a character's response to an event. *Get on board* is a persuasive text whose underlying purpose is to convince the reader to consider trying the activity of flyboarding. Facility rates for this unit were high to medium.
- *Fit to reveal fitness?* proved more challenging for students. This was due to the increase in the number of items requiring students to make inferences regarding the purpose of sections of text. *Star struck* and *Seeing stars*, although different genres, focused on a similar topic – the night sky. Items 34 and 39 had low facility rates. For both items, students had to number five options to show the sequence of events or arguments in the text. As there are no partial marks awarded for such items, students needed to accurately number each option. It is hard to determine whether the difficulty of these items is attributable to their literacy demands or the multi-response format. Although its literacy demands were quite modest, Item 39 had the lowest facility rate (8.5%). Each option in this item represented an argument from the text. Students needed to identify the order in which these arguments appear in the text. The fact that each argument corresponds with a paragraph from the text should have made this item more manageable for students. Perhaps some students were unable to link the wording of each option/argument to a corresponding paragraph in the text. Other students might have been reluctant to devote the necessary time to this task.
- Items 40 and 41 refer to both *Star struck* and *Seeing stars*. While having to consider two different texts might have placed more demands on the student, the questions themselves should not have posed too many problems for students. Of the two items, only Item 40 required higher order thinking skills, as it asked students to apply a concept from one text to the other. However, Item 41, which required students to simply locate information that appeared in both texts, had a much lower facility rate (13.39%). Again, this may be because this is a multiple response item.

Students may need to become more familiar with this type of item that asks students to shade more than one bubble or to number the options to show how information is sequenced in the text.

- Although students generally performed better in the next unit, *Let me fix that ruin for you*, the prevalence of inferential questions managed to keep the facility rate below 50% for most items in this unit.

Implications for teaching

- As a general note, all items involving purpose, main idea, theme or tone of the text (in whole or part) challenge students because they have to understand the whole of the text to answer the item. The big challenge for teachers is to get students to annotate texts in the classroom and discuss them in groups so that they can see how all the parts of the text contribute towards the meaning of the whole.
- This is the time to discuss patterns in the text (e.g. cause and effect), identify connections between ideas in the text, the two or three main parts of the text and how the parts contribute to the overall meaning. All of this should occur before students begin a close study of the text. Students will handle the distractors in the items much better if they are clear about the subject matter and the purpose of the text before they proceed to the items.
- Teachers need to encourage students to read for pleasure and recreation to extend their knowledge of themselves and the world around them. Reading develops empathy for characters and people in difficult situations. Students also need to be able to participate confidently in a close study of a text, to check for fallacies and persuasive techniques, and to identify emotive language and literary techniques. World citizens need to be discerning and capable readers and confident speakers and writers about those texts.
- The complexity of the reading process is made visible when students discuss texts and share how they arrive at their personal understanding of the text. Teachers are the facilitators of this process, not the leaders. Their focus should be on:

modelling a love of books and reading

finding authentic texts which appeal to pre-adolescent children

providing a range of genres and a range of texts from classic or traditional texts to texts with postmodern elements

promoting higher-order questioning of texts (both set texts for special study and unseen texts for close study)

reading aloud to students to promote reading for pleasure (sometimes at Year 7 this is forgotten)

talking about texts and authors respectfully and disagreeing with each other about their interpretations appropriately

developing an awareness of how the parts of the text combine to create a whole through both semantic (links between the ideas) and syntactic (grammatical links) cohesion

encouraging students to make inferences as they read (an informed guess backed by evidence or a statement about the unknown based on the known)

encouraging the link between reading and writing by asking students to regularly write analytical paragraphs about an aspect of what they have read, e.g. Can this character be trusted? Is there a shift in tone in this text? Is the writer manipulating the reader unfairly?

encouraging students to see connections between the text and their own knowledge and experience, between different things within the text and between this text and other texts in a similar genre or on similar subject matter

encouraging boys to be active readers and make connections between the text and their own knowledge, experience and feelings.

QCAA resources

- SunLANDA Online displays item analyses along with data on the performance of classes, subgroups, and individuals within a school and compares the school's performance with that of the state and nation.
- QCAA 2015, *Beyond NAPLAN: How to read challenging texts*, Beyond NAPLAN series, http://www.qcaa.qld.edu.au/downloads/p_10/naplan_read_challenging_texts.pdf

Numeracy

Results and item descriptions

- The numeracy strands are abbreviated as follows: Number and Algebra (NA); Measurement and Geometry (MG); Statistics and Probability (SP). All items are worth one score point. For the purpose of this report, the SUNLANDA strands of Number and Algebra, Functions and Patterns have been combined as Number and Algebra to reflect the Australian Curriculum strands.
- The percentage columns give facility rates (percentage correct). These results are based on provisional data.

Calculator-allowed items

Item	Strand	Answer	Qld%	Aust%	Description
1	SP	D	92.63	92.47	Identifies the category with the greatest total from a two-way frequency table.
2	MG	B	87.08	87.4	Converts a time from the 24-hour system to the 12-hour system, using am/pm notation.
3	NA	C	90.6	92.24	Identifies the smallest decimal from a list.
4	NA	12	89.7	90.28	Uses a pattern to identify a missing number in a table.
5	MG	A	82.44	82.81	Estimates the size of an angle in context.
6	NA	8	76.09	77.13	Determines a fraction of a quantity.
7	NA	A	79.54	81.21	Selects the appropriate number sentence to solve a division word problem.
8	SP	C	80.61	81.6	Describes probabilities using fractions, decimals and percentages.
9	NA	A	71.97	72.75	Solves a multistep problem by multiplying, adding and dividing one- and two-digit numbers.

10	MG	A	86.13	86.41	Chooses an appropriate unit of measurement for capacity.
11	MG	B	61.88	62.87	Determines the area of a triangle drawn on a grid.
12	NA	C	55.96	57.17	Subtracts fractions with related denominators in context.
13	MG	F	67.96	68.54	Uses directional language to describe a route.
14	NA	D	70.47	72.13	Identifies a word problem for a given multiplication number sentence.
15	NA	F	54.99	50.78	Describes the rule to continue a multiplicative sequence.
16	MG	B	50.82	50.89	Determines the coordinates of a point after a translation on the Cartesian plane.
17	SP	D	80.29	80.91	Identifies an error in a column graph.
18	NA	D	60.38	61.48	Uses reasoning, addition and subtraction to solve a word problem.
19	SP	C	61.7	63.85	Recognises that probability ranges between 0 and 1.
20	MG	C	78.24	79	Determines the front view of an isometric drawing made of cubes.
21	NA	B	49.6	49.82	Identifies the correct representation of decimals on a number line.
22	NA	10.15	44.92	45.61	Multiplies and divides decimals by whole numbers with digital technologies.
23	MG	D	42.69	45.61	Converts 12-hour time to 24-hour time to solve a duration problem.
24	NA	A	34	38.19	Uses the distributive law to aid in a mental computation.
25	NA	A	46.18	48.48	Subtracts a negative integer from a positive integer.
26	SP	D	43.05	45.97	Interprets information from a column graph which does not start at zero.
27	NA	B	30.51	32.15	Substitutes a value into equations to determine equivalent number sentences.
28	NA	0.057	41.55	40.56	Represents the numerical form of a decimal

					that is given in context
29	MG	A	31.57	32.08	Identifies the image of an object after a reflection and a rotation.
30	NA	13.5	12.45	13.68	Calculates the final cost of an item after two successive percentage discounts.
31	MG	C	44.69	44.54	Compares lengths expressed in different units and identifies the longest.
32	MG	8;22	19.65	18.87	Uses reasoning to describe the features of the surface of a prism.
33	NA	0.25	17.66	18.13	Divides whole numbers where the result is a terminating decimal.
34	MG	70	22.3	25.15	Calculates the perimeter of a composite shape made from squares.
35	NA	75	29.92	34.12	Expresses one quantity as a percentage of another with digital technology.
36	MG	D	14.5	16.48	Converts from square centimetres to square millimetres.
37	SP	AD	2.03	2.69	Interprets and compares data in two stem-and-leaf plots.
38	NA	324.5	21.91	23.8	Solves a problem involving all four operations with whole numbers using a calculator.
39	MG	756000	5.31	6.93	Calculates the difference between the volumes of rectangular prisms.
40	SP	750	4.87	6.54	Makes a prediction for a population based on a random sample.
Non-calculator Items					
1	NA	A	88.4	89.74	Solves a problem using the division facts of five.
2	NA	D	78.48	80.06	Adds decimals in context.
3	NA	C	65.96	68.04	Evaluates the reasonableness of an estimate.
4	NA	1.74	44.16	46.31	Subtracts decimals without digital technologies.
5	NA	100	46.09	48.97	Multiplies a decimal by a whole number to

					solve a problem.
6	NA	C	31.87	31.32	Evaluates an expression using order of operations.
7	NA	B	53.59	46.71	Identifies a decimal with the given digit in the thousandths.
8	NA	25	14.57	16.65	Solves a multi-step problem involving the addition and subtraction of numbers in a number sequence.

About the test

- The Year 7 NAPLAN Numeracy test (combining calculator allowed and non-calculator items) is reported with a single score. Non-calculator questions will be referred to as 1NC – 8NC.

Performance

- The Numeracy test consisted of 48 items covering concepts and skills from three strands. This year there were 27 Number and algebra, 14 Measurement and geometry and 7 Statistics and probability items. Queensland students performed better than the national facility rates in seven items (6NC, 7NC, 1, 15, 28, 31, 32). Queensland students performed 6.88% higher than the national facility rate for question 7NC, which was greater than any of the other variations in facility rate, above or below.
- The percentage of Queensland students answering the items correctly ranged from 93% for question 1 to 2% for question 37. This trend is typical of diminishing facility rates for NAPLAN Numeracy test performance as the most difficult questions are located towards the end of the test.
- While the majority of students attempted to answer all test items, a number omitted the more difficult items towards the end of the test, particularly items requiring a constructed response rather than a multiple choice. The omit rate rose to 13% for the last two items, 39 and 40.
- These items were designed to differentiate student performance for the more capable students. The more challenging items provided those students with opportunities to apply their knowledge and skills to solve problems. Students with a good knowledge of a range of concepts who are confident in using these in a variety of contexts were more likely to solve these items given sufficient time.
- For example, Item 39 required the students to calculate and compare volumes in a measurement-related problem that involved multiple calculations. It required an understanding of volume, an ability to conceptualise the problem by processing all of the visual and written information contained, and then solve the problem. Those students unable to do so may have found the context challenging and may not have had sufficient time to complete processing the calculations.
- Item 37 was interesting as it was a difficult question for Year 7, and more demanding than other items in the last part of the test (only 2% answered correctly), but the omit rate (5%) was lower than the last two questions. It is likely that this was because the context was student-friendly, and students felt reasonably confident selecting at least one correct option. This was sufficient to cause more students to attempt the question than they might have otherwise.
- Students struggled with other items where complexity was increased incrementally. For example, many teachers would expect most Year 7 students to be able to calculate percentage

discounts with familiar percentage amounts. In fact many students demonstrated the ability to calculate 25% or 10% off the original price in Item 30, but most struggled with the concept of applying two discounts progressively.

- Similarly, in Item 33, many students were able to calculate the amount of water in each of 16 cups from 2 litres. However, increasing complexity with the addition of 'two 2-litre bottles of water' appeared to be the reason why the facility rate was 18% rather than the approximately 50% of students who demonstrated some understanding of how to solve the problem.
- Teachers may want to look at their class results and compare how their students performed on these items. Poor performance in these items may suggest that students would benefit from being introduced to a greater range of problems with slightly increased complexity to develop their ability to reason mathematically.
- Schools and teachers can use overall performance data for Queensland and Australia to compare against their own data in SUNLANDA. They can also use this to evaluate how difficult a particular aspect of numeracy was for all Queensland Year 7 students. If teachers combine this with similar data from previous NAPLAN tests, they can judge for themselves the relative difficulty of various concepts and skills.

Implications for teaching

- Teachers should incorporate problem solving into their maths lessons to develop fluency in problem solving rather than addressing it as a separate concept. Including problem-solving strategies into maths lessons more routinely may help students link the concepts and skills of mathematics to problem solving in a numeracy context. There is evidence that students understand basic maths content such as, 'fractions are parts of a whole', but are unable to use this knowledge to solve a problem.

- Typically, item complexity was increased by the following means:

presenting a problem in an unfamiliar context

the addition of extra detail

targeting known weaknesses

using language in a way that students might misinterpret due to the narrow usage they may have become accustomed to in classroom maths contexts

providing mathematically plausible options which students do not rule out if they do not visualise the problem.

Some examples are:

Item 12 – the wording 'how much more' implied to some students scanning for key words that it is an addition problem; students are very familiar with the concept of fractions being part of a whole, therefore they chose the options that made up a whole

Items 30 and 33 – addition of detail that slightly complicated an otherwise familiar calculation

Item 31 – almost half the students chose the options expressed in metres without considering that 160 centimetres was longer than 1.5 metres; they may not have even looked at the other options

Item 36 – students familiar with linear conversions have divided by 10 or 100 without visualising the size of something that is 3 or 30 millimetres square.

- There is evidence that students are scanning for key words or for numerals only to process in word problems, and that this strategy is failing them. Teaching students to solve problems based on key words is often misleading. In Item 12 for example, it is likely that many students answered

incorrectly because they were very familiar with some basic fraction concepts and interpreted 'How much more ...' as requiring addition to make up a whole.

- Furthermore, there are difficulties with the 'look for key words strategy' when crucial information is inferred and not made explicit, as is sometimes the case, or the question requires students to process information contained in the text and image. Students will benefit more from strategies and tools that promote an understanding of the problem through visualising or use of models.
- Many of the distractors provided demonstrate that students are not routinely checking their answers for reasonableness. Students should be habitually asked to consider their answers for reasonableness. See for example Item 36.
- While the omission rates were not as high as in some of the other year levels, more capable students will benefit from better pacing their test experience to allow more time for the most challenging questions at the end of the test.