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National Education

The NAPLAN maths questions that 'simply make zero sense'



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High school students are being asked "absurd" and "badly worded" questions in NAPLAN's numeracy exams, but a lack of transparency from the national testing authority is preventing teachers from addressing the issues.

As 1.3 million students begin to sit the annual NAPLAN exams on Wednesday, Victorian educators have spoken out on the secrecy surrounding the content of the tests, which they say makes it impossible to know if they are being conducted to a sufficiently high standard.



Educators have called for more transparency on NAPLAN tests.

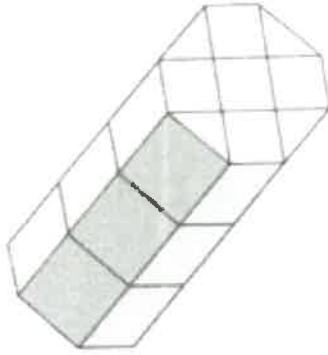
Mathematician Marty Ross, whose advocacy last year prompted an [investigation into errors in VCE exams](#), has obtained year 7 and 9 NAPLAN numeracy test questions from 2017 to 2021. He found many of the questions were poorly conceived or badly worded, labelling 10 questions as "appalling".

"There were just things which simply made zero sense," he said. "You could sort of figure out what it is they were trying to ask, but they weren't asking it. How on earth could something like this be approved? It just boggles the mind."

Ross said he had no doubt students could be confused by the ambiguities in the "absurd" and "badly worded" questions. "It's not a risk, it's a certainty. I mean, it's an absolute certainty."

One question from the 2017 year 7 test asks students to identify how many squares and triangles cover the surface of a toy. However, the drawing also features non-square rectangles, which are not mentioned. It is impossible to determine how many of the rectangles are squares, and so how many should be counted.

- 2 This toy is in the shape of a prism.
Its surface is covered in triangles and squares.



How many triangles and how many squares cover the entire surface of the toy?

triangles

squares

A Year 7 maths question from the 2017 NAPLAN test obtained by mathematician Marty Ross.

The Australian Curriculum, Assessment and Reporting Authority (ACARA), which runs the tests, has not publicly released test papers since 2016.

Previously, teachers could sometimes source copies of paper tests to use for NAPLAN preparation, before exams shifted fully online in 2022. Now that the tests are also adaptive, altering questions according to student ability, teachers say it's impossible to know what students are being asked – and how the questions align with the Australian curriculum.

ACARA did not answer questions about exam content or transparency, but a spokesperson said on Tuesday the organisation released recent sample questions across all the domains tested in NAPLAN.

But Greg Ashman, deputy principal of Victoria's high-performing Ballarat Clarendon College, said sample questions were not enough. He agreed ACARA should be more transparent.

"The risk for the students is they're not prepared properly for the assessments because the teachers aren't sure what's on them," he said.

"It'd be foolish as a VCE or HSC teacher to not have a read of some past exam papers before you start planning what you're going to teach, because the syllabus tells you what you're supposed to teach, but the questions in the exam tell you how the examiners interpret that syllabus ... And so when you don't have access to the NAPLAN questions, you don't have access to any of that knowledge."

Ashman, who successfully led a [campaign against inquiry-based learning](#) in ACARA's new maths curriculum in 2022, said there were concerns the numeracy tests featured too many verbose questions, making it impossible to detect if the issue was maths or literacy.

"So if a kid doesn't do very well on the question, it could be because they don't have the numeracy skills to do the calculation, but it could also be that they don't have the reading comprehension necessary to understand what the questions are asking."

Almost one-third of Australian children [failed to meet new proficiency standards](#) for literacy and numeracy in NAPLAN 2023. Nearly half of Australian teens [failed to reach national standards](#) for maths and reading in the latest Programme for International Student Assessment (PISA) results.

Glenn Fahey, research fellow at the Centre for Independent Studies, said NAPLAN broadly correlated with other international tests, indicating it was meeting its goals. But he said it appeared there could be too much weight on word-based problems in numeracy exams. Fahey said there had been a long-running conversation about whether Australia should participate in standardised testing like NAPLAN, but not as much focus on what should go into the tests and how we should use the results.

Ross said ACARA had provided no evidence how tests had been changed to reflect the new mathematics curriculum.

"Even if one had basic faith in ACARA, which obviously I do not, there's something about public accountability, which I think matters."

He said in many of the questions he had seen, the mathematics being tested was trivial. The poor wording in NAPLAN numeracy tests was systemic.

"NAPLAN is doing some approximate version of what it says on the box, I guess, in the sense that a McDonald's hamburger is something like a hamburger," he said. "It's not like it's totally worthless. It's just close."

ACARA acting chief executive officer Stephen Gniel said NAPLAN was an important measure, but is just one assessment tool in addition to schools' own assessments and, most importantly, teachers' knowledge of their students. He said there was no need for students to undertake extra practice for NAPLAN.

Schools will receive their full results from June, student reports will be distributed at the start of term three and ACARA will publish the national results in August.

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