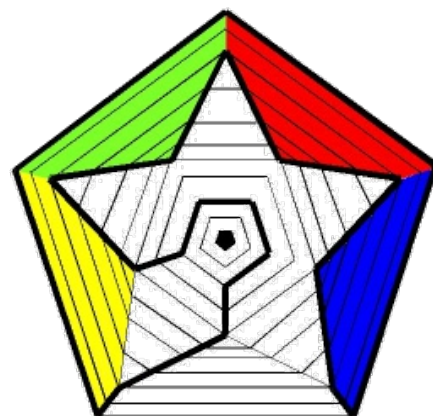


# SHORT CIRCUIT

Canberra Mathematical Association Inc.

VOLUME 17 NUMBER 4 APRIL 2026



## NEWS AND COMMENT

As a rule, readers of a newsletter do not concern themselves with how it was produced, or how it came to look the way it does. Nor, *ceteris paribus*, should they need to.

However, this month we indulge in some post-modern self-referentiality by mentioning that Microsoft is withdrawing support for its program Publisher, which is what we have used to produce Short Circuit over the past 16 years.

Publisher worked well enough, although making mathematical expressions always required a workaround. But now, an alternative is needed.

This edition has been produced using Scribus, free, open-source desk-top publishing software. A non-trivial effort was required to learn how to use the new software.

Mathematical expressions are still tricky but may look better.

This parable of the software illustrates something that teachers

know well - that learning occurs out of necessity. The motivation to learn is endogenous.

Related to this idea, there is on page 4, a link to an article from Dean Ashenden in Inside Story that speaks of the the work students do in learning. His observations are in the context of a reflection about a student from his early teaching experience.

The article about NAPLAN, beginning on page 3, appeared in the on-line publication The Conversation. It is addressed to general readers rather than educators (who would be relatively unsurprised by the content). But it is interesting to observe what is being canvassed in public about NAPLAN.

Consider the professional learning opportunity advertised on page 2. Professor Chris Matthews (ATSIMA) leads a workshop on Maths as Story Telling assisted by Melba Copland Secondary School teachers.

## NEWSLETTER

The CMA newsletter, Short Circuit, is distributed monthly to everyone on our mailing list, free of charge and regardless of membership status.

That you are receiving Short Circuit does not imply that you are a current CMA member but we do encourage you to join. Short Circuit welcomes all readers.

## CMA MEMBERSHIP

Memberships run from 1 Jan to 31 Dec. each year. Membership forms may be downloaded from the CMA website:

[http://](http://www.canberramaths.org.au)

[www.canberramaths.org.au](http://www.canberramaths.org.au)

The benefits of Membership of CMA may be found on the website.

**CANBERRA  
MATHEMATICAL  
ASSOCIATION**

Inside:

Article—p.3

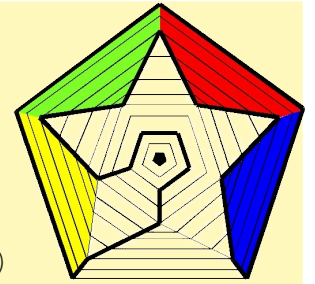
Puzzle solutions—p.4

CMA council 2026—p.5

## WORKSHOP

Canberra Mathematical Association

Proudly sponsored by Melba Copland Secondary School



### Re-engaging students through maths as story telling (Goompi model)

Join Prof Chris Matthews (Aboriginal and Torres Strait Islander Mathematics Alliance) and two ACT teachers for this interactive workshop.

Presenters:

Professor Chris Matthews (keynote)

Yuka Saponaro, Dylan Hatton

Monday, 20 April 2026 (Term 2 pupil-free day)

08:30 - 14:30 (lunch supplied)

Melba Copland Secondary School

15 Conley Dr. Melba

Registration:

\$100 per person via [CMA website](#) or this link -

[Trybooking Goompi Model](#).

For tax invoices please email [canberramaths@gmail.com](mailto:canberramaths@gmail.com)

Attendance is limited to 32 places, so book now to secure your spot.

Bring your own device to co-create Maths as Storytelling resources.

See the [CMA website](#). There is a program timetable in last months's Short Circuit.

## ATO FINANCIAL LITERACY

The Australian Taxation Office has launched this year's Tax, Super + You competition.

The competition is open to students in years 7-12 currently enrolled in the Australian education system. Entries close in September.

The competition is a way for high school students to discover why tax and super matter in everyday life. Students can enter solo or as a team.

Competition entry topics:

Junior Category (Years 7-9): What are my tax and super responsibilities when I start earning money?

Senior Category (Years 10-12): How does the ATO app and Online services help Australians manage their tax and super and help protect them from fraud?

Students have the chance to win a share of \$12,000 in prizes for themselves and their school.

Find out more at

<https://taxsuperandyou.gov.au/competition>

## MATHS300

### Bring Maths to Life with Maths300

Looking for rich, engaging maths lessons that build deep understanding and support your teaching?

AAMT's Maths300 is a trusted lesson library supporting teachers across Australia. Click [here](#) to read more.

#### Why teachers love Maths300:

**T**rusted and proven – Supporting generations of teachers in developing mathematical thinking

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**P**rofessional learning – Affordable, online sessions available (60 or 90 minutes) designed for your school

**O**ngoing support – How-to videos, a detailed guide, and a termly newsletter packed with classroom-ready tasks

#### Not sure yet? Try it first.

Experience Maths300 in your own classroom with a 2-week free trial. Explore resources, lesson plans, and teaching ideas that work for your context.

Click here to subscribe, or write to

[maths300@aamt.edu.au](mailto:maths300@aamt.edu.au) for more information.

## NAPLAN SEASON

By Steven Lewis, Associate Professor of Education Policy, Australian Catholic University.

Reprinted from [The Conversation](#), 13 March 2026

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School students around Australia have just done their NAPLAN tests. There were technical glitches during the writing component of the exam, and there has been confusion about the purpose of the test.

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Earlier this week, NAPLAN boss Stephen Gneil told the [Sydney Morning Herald](#) he was worried about how the test results are being used.

He said some private and select-entry government schools were using the NAPLAN results as part of enrolment applications.

*I think it is horrendous, and it's a complete misuse of the assessment. It's not one of the purposes and therefore the test is not designed as an entrance exam and shouldn't be used as such.*

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NAPLAN is held every year for students in years 3, 5, 7 and 9. It measures how Australian students are performing in reading, writing, conventions of language (spelling, grammar and punctuation), and numeracy.

There are four proficiency levels for each area: exceeding, strong, developing and needs additional support.

Students at 'exceeding' and 'strong' are at or above performance expectations for their year level. Those who are deemed 'developing' and 'needs additional support' are below expectations.

Students receive an individual report, schools get a school-wide report, and data is published at national and state levels, including via the My School website.

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When it was introduced in 2008, NAPLAN was presented as a 'low-stakes' measure to diagnose system-level performance. This means individual students' NAPLAN scores were intended to be aggregated.

Since it is a 'census test' that all students complete, the results can be used to track national progress, compare states and territories, and compare student populations.

This can help policymakers and education departments identify areas of need in certain locations (for example, rural and regional areas versus cities) and student groups (for example, those from

high versus low socio-economic groups).

But the purpose of NAPLAN has since been expanded. Since 2010, it also provides school-level data to publicly rate schools' performance and compare them.

This was not part of the original plan for NAPLAN. As a 2019 review noted, this reflects a move towards more 'high-stakes' uses and interpretations of NAPLAN data.

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Because all students complete NAPLAN and receive individualised reports, it has become a common – if highly imperfect – yardstick for student and school performance.

We now have a situation in which individual NAPLAN results have become, among other things, a proxy 'entrance exam'.

Extensive research suggests an over-reliance on NAPLAN has also led to many unforeseen 'perverse effects'. These include teachers 'teaching to the test', excessive student and teacher stress, a narrowing of the curriculum, and the gaming of school and state performance targets. For example, some states have tried to set 'lower' targets they can easily meet.

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Test designers refer to *validity* to describe whether an exam tests what it claims to measure and whether it is being used for its intended purposes. So, it is a problem if NAPLAN results are being used by schools to determine entrance into Year 7, given it was designed to test population-level progress.

This is not just a theoretical issue.

Using NAPLAN scores for school entrance runs counter to students, parents and teachers being told the test is 'low-stakes' (or does not matter to individual kids). This is both disingenuous and risks students experiencing yet more test anxiety, since the purpose of NAPLAN is not being consistently and transparently communicated.

NAPLAN is also specifically limited to literacy and numeracy skills. This is only a small proportion of what a student might reasonably be expected to learn during their time at school. At best, it is a partial snapshot of student performance.

Meanwhile, using NAPLAN scores to determine high school entrance is likely to see more parents seek out private tutoring or exam preparation for their child.

[Continued on page 4]

[Continued from page 3]

This risks unfairly disadvantaging students whose parents cannot afford or arrange expensive and time-consuming tutoring.

NAPLAN's administrator has been at pains to remind people NAPLAN is only one test. It does not and should not 'replace the extensive, ongoing assessments made by teachers about each student's performance'.

Student report cards, school-based assessments and teacher judgements can provide a far more nuanced, balanced and individualised measure of student learning.

This is why any reliance on NAPLAN scores to decide school entry is flawed and unfair.

## ACER



The Australian Challenge

The International Mathematical Modeling Challenge (IM<sup>2</sup>C) is a team-based mathematical competition for Australian secondary students. Click on the logo to visit the (IM<sup>2</sup>C) website for more information. Registrations close soon.

## reSolve

The Australian Academy of Science Education Team has announced that, as always, reSolve maths resources are aligned to the curriculum, but now in a way that is convenient at reporting time.

Just go to the teaching sequence of interest and click on the relevant tab at the bottom of the page.

Discover the resources [here](#).

## INSIDE STORY

'It is not teachers who produce learning, it is students. Indeed, students are the only people in schools who can produce – or decline to produce – learning. Students are workers. Students, not teachers, are the real workforce of schools.'

- Dean Ashenden 2012

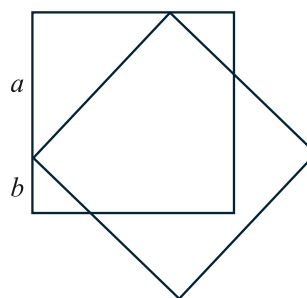
This quote comes from a reprint in [Inside Story](#).

Click the link to read the article.

## PUZZLE SOLUTIONS from Vol 17 No 3

### 1. Coasters

The two square coasters can be represented thus:



We inserted the measurements  $a$  and  $b$ . The total exposed area as triangles is  $\frac{a^2}{2} + b^2$ .

The area of a square is  $(a + b)^2$ , and from another point of view it is  $2a^2$ . So,  $(a + b)^2 = 2a^2$  from which we deduce the positive solution

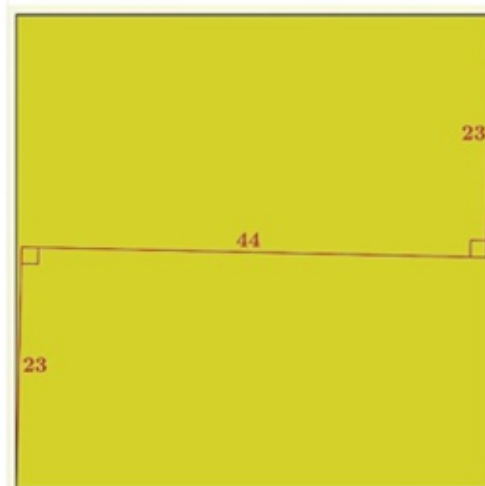
$$b = a(\sqrt{2} - 1)$$

Thus, the visible surface of the lower coaster has area  $\frac{a^2}{2} + b^2$  which is  $a^2 \left( \frac{7}{2} - 2\sqrt{2} \right)$ , and the invisible part of the surface is  $a^2 \left( 2\sqrt{2} - \frac{3}{2} \right)$ . Hence, the ratio of visible to invisible is

$$\frac{a^2 \left( \frac{7}{2} - 2\sqrt{2} \right)}{a^2 \left( 2\sqrt{2} - \frac{3}{2} \right)}$$

which is  $\frac{16\sqrt{2}-11}{23} \approx 0.5055 \dots$

### 2. Year of the yellow square



The rotational symmetry in the diagram allows us to calculate the diagonal of the square, since the diagonal must bisect the segment with length 44.

So, the diagonal length is  $2 \times \sqrt{22^2 + 23^2}$ .

After a few steps, we see that the area of the square is  $2(22^2 + 23^2)$  or 2026.

## THE 2026 CMA COMMITTEE

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	Peter McIntyre	University of NSW Canberra
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	Linda Goth	
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Theresa Shellshear is CMA's COACTEA representative.

Bruce Ferrington is CMA's AAMT representative.

Short Circuit is edited by Paul Turner.

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## ABOUT THE CMA

The Canberra Mathematical Association (Inc.) is the representative body of professional educators of mathematics in Canberra, Australia.

It was established by, among others, the late Professor Bernhard Neumann in 1963.

It continues to run - as it began - purely on a volunteer basis.

Its aims include:

- the promotion of mathematical education to government through lobbying,
- the development, application and dissemination of mathematical knowledge within Canberra through in-service opportunities, and
- facilitating effective cooperation and collaboration between mathematics teachers and their colleagues in Canberra.

Short Circuit is the newsletter of the Canberra Mathematical Association Inc.

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The vertices of a dodecahedron belong to a Hamilton circuit.