SHORT CIRCUIT

Coming Events:

August 22   *CMA Conference—Snow Centre, Canberra Grammar*

November   *2015 CMA Annual General Meeting and dinner*

Afternoon workshops:

Term 4: TBA

FROM THE EDITORS

In this edition we have included information about the National Mathematics Summer School and about the Statistical Society of Australia's poster competition that we hope teachers will pass on to their students.

Readers will also find an article about a difficulty faced by pre-service teachers and their training institutions, to which CMA members are encouraged to respond.

It is a pleasure to be able to publish a contribution from a member and former president of CMA, Erin Gallagher, about the use and production of video technologies in mathematics pedagogy. See pages 5 and 6 for this. Be sure to click on the pictures to follow the links.

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Not so delightful was the fact that the Wednesday Workshop scheduled for Namadgi School, which was to have been presented by Stephen Hood, has been cancelled indefinitely due to Stephen's illness. We wish Stephen a full recovery, not just because he gives a very good workshop but mostly because he is a dedicated teacher and friend to the profession.

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The CMA Conference this year will be held at the new Snow Centre at Canberra Grammar School. Details, as they emerge, will be put on the CMA website. At this stage, we can announce that the keynote speaker will be Tom Lowrie, currently at the University of Canberra.

Note that there is an Early Bird registration process in place this year. By registering before July 17 there is a saving to be made. Check the website.

A separate flyer about the conference should arrive by email together with this newsletter.

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MEMBERSHIP

Join or renew your membership for calendar year 2015.

A membership application form can be accessed from the CMA website:

http://www.canberramaths.org.au/index.html

CMA membership includes automatic affiliation with the Australian Association of Mathematics Teachers and a free AAMT journal.

Among other benefits, members are entitled to attractive rates for CMA professional development events and the annual conference.

CMA members can also attend conferences of other AAMT affiliates, MAV, MANSW, etc. at member rates.

Note: Receipts for membership and other payments are sent out by e-mail. If you have paid for your membership but have not received a receipt or if your AAMT journal(s) have not been arriving, please advise CMA treasurer, Paul Turner, or another committee member.

NMSS SUMMER SCHOOL

The National Mathematics Summer School, NMSS, is a two week residential school held each January at the Australian National University for mathematically gifted and talented senior high school students. Students will normally be currently in year 11.

Attendees are challenged and extended through study of three or four areas of mathematics and, as well, have an enjoyable time collaborating and socialising with colleagues.

Some financial assistance is available from the CMA for those students who are selected to attend. Applications close on July 25th. Students can self-nominate or can be nominated by teachers. Those interested should visit the NMSS website and the relevant page at the CMA website for an application form.

AAMT

If you are a member of CMA, you are automatically a member of The Australian Association of Mathematics Teachers and should receive your journal and other communications directly from the AAMT office in Adelaide. http://www.aamt.edu.au/

Some resources:

Top Drawer Teachers –
http://topdrawer.aamt.edu.au

CMA MERCHANDISE

Contact Elaine Hooke on 0407 788 493 or e-mail cmamerchandise@gmail.com for the following items:

Canberra Mathematics Association Navy Polo shirts $36 with logo, Pi Earrings $15, Easy as Pi badges and Pi pins $8.

Free delivery to your ACT school. Elaine can attend your Maths staff meeting.

CONTRIBUTE TO SHORT CIRCUIT

Send in your musings, your puzzles, your reports about activities and events you have participated in, your notices about coming events, or anything else that might be of interest.
canberramaths@gmail.com

PUZZLE

This came from an old book with its first few pages missing, so we don't know who created it. That's the first part of the puzzle.

THE PUZZLE BELOW WAS CREASED BY 19-YEAR OLD CLIFFORD ADAMS IN 1910. THE PUZZLE IS TO WRITE THE FIRST 19 POSITIVE INTEGERS IN THE 19 BLANK CELLS SO THAT ANY STRAIGHT LINE WILL ADD TO 38. IT IS A VERY DIFFICULT PUZZLE, SO WE HAVE HELPED A LITTLE BY FURNISHING SOME NUMBERS. TRY YOUR LUCK (AND LOGIC).
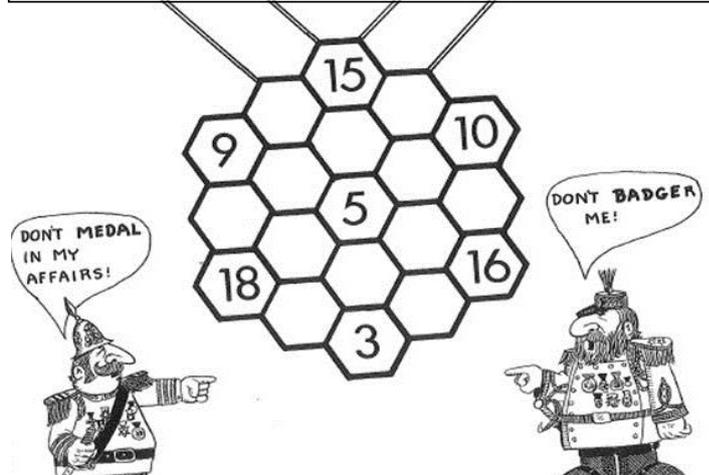
AAMT—CONNECT WITH MATHS

There are now four *Connect with Maths* online communities teachers can join.

Make it count with Indigenous Learners community
Early Years Learning in Mathematics community
Maths in Action (Applications and Modelling) community
Engaging All Students (Catering for Diversity) community

Subscription to these communities is FREE.
If you would like to join one or more communities, click on the link.

Coming Soon…
Digital technologies for Mathematics community

SHORT CIRCUIT

PRE-SERVICE TEACHERS AND THE CMA

Each year, universities struggle to find quality placements for the handful of secondary focused pre-service teachers who are working towards their teaching qualifications in the ACT. The same struggle occurs in other states, certainly, but the need specific to the local jurisdiction is the one to which CMA members are in a position to respond.

At the ACU Canberra campus, for example, there are currently nine highly motivated students pursuing post-graduate teaching qualifications in the secondary area, who have mathematics as a teaching specialty. Of these, only seven could be placed in a practicum in the early weeks of the first semester. At the University of Canberra, a similar number of undergraduate placements were required. As well, five students in the new M Teach program needed placement.

Teachers from only three high schools volunteered to be a mentor for a pre-service teacher from ACU. Other student teachers had to be placed in colleges even though the course topic related to high school teaching. The pattern of placements is similar for students from UC. Again, the majority of students are placed at colleges. For the second round of placements for M Teach students later this year, there remains a significant shortfall in offers from high schools.

There may be plausible explanations for this state of affairs but if experienced teachers are perceiving a problem with participating in the mentoring arrangements for pre-service teachers, then it is time the difficulty was addressed. The CMA can have a role in this because of its lobbying function and because its members are the people most likely to be concerned enough to volunteer their services.

A failure to remedy this situation could result in at least some of the new teachers opting to teach in their other specialty areas rather than in mathematics.

This would be unfortunate because it is unquestionable that the ACT education system needs a reliable supply of highly trained and dedicated mathematics teachers.

CMA members and associates might well be the people with the passion and the vision to step up and meet this need.

Readers are invited to communicate their views on this matter through the CMA email address: canberramaths@gmail.com.

SSAI POSTER COMPETITION

The Statistical Society of Australia Inc. is again running a poster competition for secondary school students. The idea was piloted in the Hunter region in 2014 and the results can be viewed on the SSAI web page: http://ssaipostercomp.info/, where entry and support details can be obtained.

Reproduced below, verbatim, are the aims of the project, taken from the website

- Inspire school teachers and students with practical applications of curriculum content

- Build relationships between University — Schools — Teachers — Students — Professional societies (build community) and increase accessibility of Higher Education

- Increase students' abilities to succinctly communicate key information

- Inspire school students' aspirations towards Higher Education and careers in statistics, mathematics and the sciences

- Provide practical opportunities for pre-service teachers, undergraduate and postgraduate students in Statistics, Maths, Sciences, Psychology and related fields to experience project facilitation and mentoring school students

- Increase awareness of the wide application and need for Statistics

- Inspire and enrich through boundary encounters.
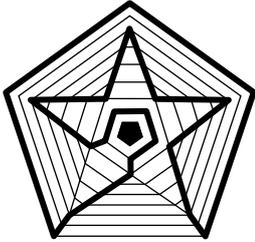
**NEWSLETTER OF
THE CANBERRA MATHEMATICAL
ASSOCIATION INC**

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Australia

E-mail: canberramaths@gmail.com

We're on the Web!
http://www.canberramaths.org.au/

THE 2015 CMA COMMITTEE

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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.

Find us on Facebook

http://www.facebook.com/pages/Canberra-Mathematical-Association/110629419011275

SHORT CIRCUIT

MATHS AND VIDEOS—ERIN GALLAGHER

Recently through twitter I found a link to a school doing fantastic things in Maths right on our doorstep. Fraser Primary (@FraserPrimary) , in Belconnen district, have been making Maths Pod Casts.

The Fraser Story

The catalyst for deciding to make the videos was that as a school they were wanting to strengthen the home-school partnerships. They had found that only a few parents were turning up to information sessions at school but that the majority of the parent community had expressed a need for information about how they could support their children at home. The school wanted to provide an avenue for parents to access information at any time.

As has also been my experience when working in schools, Fraser Primary had found that many parents were unfamiliar with the current mental computation strategies and the language being used in the maths classroom. The broader carer community wanted to help but they only knew how they were taught at school and, as we all know, this has changed significantly since then.

The focus so far has been on making videos exploring the mental computation strategies that are taught at school for a variety of year levels. Whilst this is a relatively new initiative, they already have some nice podcasts on friends to ten, fact families, turnaround facts, jump strategy and the division algorithm. More are planned for the future.

Since the second half of 2014, the podcasts so far created target a range of abilities (and are not even restricted to mathematics). There are videos for early, middle and upper primary and a range of teachers have been involved. The success of the project has been that it has not only been one or two teachers driving the filming and publication but it has been a team effort. Teachers now identify a need and volunteer to film podcasts.

The videos were initially designed to be a resource for parents, but teachers also found them extremely useful in classes as the students respond positively to viewing Fraser teachers on screen.

Much positive feedback has been received on the

podcasts from the community and a form on the website was introduced for parents and carers to request videos on topics they would like to see or learn about. Initially the video making process took quite some time but as the staff have filmed more and more, the time it takes to produce a video has shortened.

The podcasts are part of a three pronged approach to sharing learning with parents and carers at home. Fraser Primary has launched three initiatives recently; the podcast series, a resources folder for parents and school blogs. (Links to these are as follows: Podcasts   Resources Folder   School Blogs)

If you want to contact the Fraser podcasters, then Todd McCoy and Scott Pearce (@Scottmpearce) are the people to find.

So what would you need?

Fraser purchased an SLR camera, a microphone and some lighting which produces some high quality videos. They use iMovie for the editing and sometimes also use an iPad which is just as effective for short podcasts.

In the past I have made a range of videos for use by students. The purpose of a video or podcast should first be identified. This one was made as a summary tool. I used a webcam attached to a tripod and wrote my notes by hand. Then, I sped up the video and recorded the voice over the top. I used a free browser based software called screencastomatic.

Sometimes a worked example is useful as it allows students to watch and hear how you solved a problem. This worked example video was made using a graphics tablet that shows my writing on the computer screen, and again used screencastomatic to record the video from the computer screen. The tablet cost me about $250.

Here is another example. It is a video I made about Fraction Calculators using the webcam on the tripod technique.

A type of video that can be used to demonstrate something practical is a stop-motion video. This is where you take a series of photographs (for this one I used my digital camera and positioned
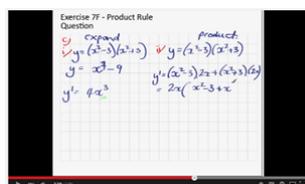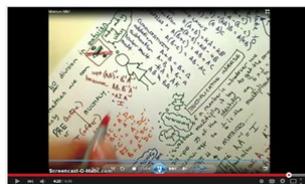
it on a tripod), and then run the photographs as a slideshow relatively quickly, giving the impression of a movie.

There are also many apps that allow instruction to be recorded, Apps like Showme can simply and quickly create small tutorials. This page is part of the Showme community, and there are some great maths ones already there.

Of course you can, as the Fraser teachers have done, get in front of the camera yourself. I made this video in class on dancing with functions. Very simple, I just had the students record on their phones and then email me the video!

I think there is a lot of scope for including videos/podcasts into the classroom. From my experience the students really engage when it is their teachers talking to them! Even though there are many quality videos out there, I would certainly encourage you to have a go yourself. You don't have to be perfect, it doesn't have to be a production, it just needs to be you and some maths.

I cannot write an article about maths videos without mentioning Vi Hart! This is worth watching, just to experience excitement, humour and engagement in a maths video.

Happy to chat if you would like some more pointers or ideas!

Erin (@ezka29), or Todd or Scott.

egallagher@mathspace.co