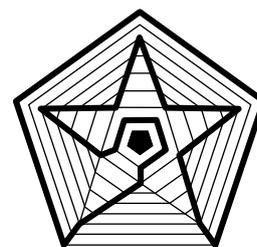


# SHORT CIRCUIT



VOLUME 6 NUMBER 3

OCTOBER 2015

Newsletter of  
the Canberra Mathematical Association INC

Coming Events:

November 11 2015 CMA Annual General Meeting and dinner

Afternoon workshops:

Term 4: Namadgi school, Thursday 5th November—  
Stephen Hood on Mathematical Literacy.

## FROM THE EDITORS

The 2015 CMA Conference, held just a few weeks ago, seems to have been a success. The venue was fresh, over 160 people attended—quite a few for the first time, and the atmosphere seemed vibrant and enthusiastic.

However, the sub-committee of CMA councillors who made it happen would like to know for certain whether the conference was as good as they think it was. They would like you, if you were there, to give some feedback about aspects that were good and about things that might have been better. You can send your comments to the conference sub-committee through the CMA e-mail address: [canberramaths@gmail.com](mailto:canberramaths@gmail.com).

An innovation that appeared at this year's conference was the new set of banners—designed and produced by Banners 'n' Mash. The graphic elements have also been produced in printable forms, suitable for our publications and letterhead. See the sample below.

## ANNUAL GENERAL MEETING—2015

You are invited to attend the CMA Annual General Meeting and dinner, to be held on Wednesday evening 11th November, 2015.

The event will be held at Erindale College, in the Class Act Training Restaurant. Please arrive any time from 6:30 p.m. for dinner at 7:00. The cost will be \$30 for the meal, with drinks included.

The AGM itself will take up only a small part of the evening. It will include brief reports from the president and the treasurer and the important activity of filling the committee positions for 2016.

Nominations for the CMA committee are called for. Please consider offering your services.

It will help our planning if you indicate that you are coming to the dinner by emailing [canberramaths@gmail.com](mailto:canberramaths@gmail.com)

## MEMBERSHIP

Join or renew your membership for calendar year 2016.

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.

**CANBERRA  
MATHEMATICAL  
ASSOCIATION**

## OBITUARY

Vale Brian John Smith

10 July 1932—13 August 2015.

With great sadness we note the passing of Brian Smith.

Brian taught mathematics at Goulburn High School before moving to the ACT Schools Authority. There, he taught at Weston Creek High School, Deakin High School, Watson High School and Melrose High School.

Brian was a popular senior teacher and will be missed by his colleagues.

Andy Wardrop

## 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>

## AAMT—CONNECT WITH MATHS

There are now five *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

[Digital technologies for Mathematics](#) community

Subscription to these communities is FREE.

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

## PUZZLE

From *Circuit* 1997 No. 3

**One Pile (aka Unipile)**

In its original form, this game was played with pebbles or counters. For younger students it is still best played initially with pebbles or counters. It can then be converted into a numbers game giving practice in arithmetic and raising questions about who can win and how.

**(a) Take the Last**

A number of counters is placed in a pile. The two players draw alternately from the pile, the object being to gain the last counter. If the first player were allowed to seize the whole pile, the first player would win; if the draw were limited to one counter each turn, the result would depend on whether the original pile contained an odd or even number of counters. Therefore a minimum draw of one counter is set, with a maximum larger than one.

Suppose that the limits are 1 to 3 counters. Explain how the player who can first leave the opponent facing a pile whose number is a multiple of 4 should be able to win.

Investigate the game for different maximum and minimum draw numbers, and different sized starting piles. Is there a formula for winning pile sizes  $w$  in terms of the least  $l$  and most  $m$  that may be drawn at each turn?

**(b) Leave the Last**

Now the object of the game is to force one's opponent to take the last counter. Investigate again and see if you can come up with a formula for the winning pile size  $w$  in terms of  $l$  and  $m$ .

## CMA MERCHANDISE

Contact Elaine Hooke on 0407 788 493 or e-mail [cmamerchandise@gmail.com](mailto: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.

## SHORT CIRCUIT

### BOOLE 2 SCHOOL

Dear Canberra Mathematical Association,

I'd like to take a little of your time to let you know about the celebration of George Boole's bicentenary at University College Cork (UCC), Ireland, and to ask for your help in publicising our *UCC Brings Boole2School* initiative to schools.

#### Here's a brief introduction:

George Boole was the first professor of mathematics at University College Cork, Ireland, which opened its doors (as Queen's College Cork) in 1849. His work in logic and algebra have become the basis for computer programming and for computer hardware, and since the advent of portable devices only 30 years ago we have come to see fully the implications of his ground breaking research for our modern society.

Our ultimate aim in celebrating his bicentenary on 2 November 2015 is simply to make his name well-known worldwide. In our year of events we have spoken to many different audiences -- mathematicians and logicians, engineers and computer scientists, and of course the general public. In the past month we have had more than 600 academics - mathematicians, computer scientists and engineers -- from around the globe at high-level research conferences on campus, all brought together in celebration of Boole's legacy.

We are also turning our attention to the next generation. In particular, we have a programme to bring Boole's name and, to introduce his logic, to school-children of all ages from 8 to 18, worldwide.

This "Boole2School" programme takes the form of age-specific lesson plans which briefly describe Boole as a historical figure, and introduce his logic using examples from computer games (Candy Crush and Minecraft) and puzzles. These lessons are available from our website without any charge or any commitment, other than that the teacher registers with us to enable him or her to download the appropriate lesson(s) for his or her class(es).

The idea is that as many children as possible around the world would take a lesson on logic on (or close to) the actual bicentenary on 2nd November.

The attached leaflet gives more detail on Boole2School including the website address <http://georgeboole.com/boole2school/reg/> and further contact details. The background note gives more detail about UCC, Boole and the events that we have planned, and some already carried out, during the year.

We now have more than 900 classes, approximately 22,500 children, signed up – in Ireland, the UK, the US, India, China, Russia and Australia.

We would be delighted if you would help us to spread the word about Boole2School.

If you would like to see the lesson material personally you need only register on the website and we'll send you the password to get you started.

If you have any other queries, please don't hesitate to contact Kathy Bunney, George Boole 200 Project Support Officer, on [kathy.bunney@ucc.ie](mailto:kathy.bunney@ucc.ie) or by phoning [+353 21 4205558](tel:+353214205558).

Kind regards,

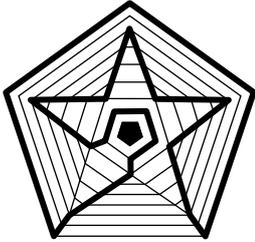
The George Boole 200 Team.

- Find us on Facebook here [www.facebook.com/GeorgeBoole200](http://www.facebook.com/GeorgeBoole200) and Twitter [@Boole2School](https://twitter.com/Boole2School) <https://twitter.com/Boole2School>
- Watch a short video on George Boole's legacy here: <http://www.georgeboole.com/boole2school/more/>

## 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](mailto:canberramaths@gmail.com)



**NEWSLETTER OF  
THE CANBERRA MATHEMATICAL  
ASSOCIATION INC**

PO Box 3572  
Weston ACT 2611  
Australia

E-mail: [canberramaths@gmail.com](mailto:canberramaths@gmail.com)

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

## 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.

## THE 2015 CMA COMMITTEE

President	Bronwyn Welch
Vice Presidents	Sue Wilson Jurek Paradowski
Secretary	Theresa Shellshear
Treasurer	Paul Turner
Councillors	Aruna Williams Andy Wardrop Heather Wardrop Patricia Tandy Ed Staples Peter McIntyre Jo McKenzie Michael Klinkert Elaine Hooke Erin Gallagher Bruce Ferrington Caroline Evers Valerie Barker

CSIRO
Australian Catholic University
Telopea Park School
Australian Catholic University
Stromlo High School
Erindale College
Lake Tuggeranong College
Melrose High School
University of NSW Canberra
Namadgi School
St Edmund's College
Radford College Junior School
Dickson College
University of Canberra



**Find us on Facebook**

## SHORT CIRCUIT

### BOOK LAUNCH

The recent CMA Conference saw the launch of a newly published book, *Mathematical Whetstones*, written principally for teachers of secondary mathematics.

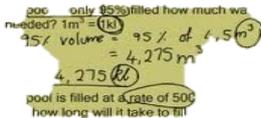
The authors, CMA members Ed Staples and Paul Turner, were on hand to give a workshop illustrating some of the material in the book and to speak about its rationale.

The launch ceremony was performed by fellow CMA member Theresa Shellshear.

Details may be found by visiting the website:  
<http://www.mathematicalwhetstones.com.au>

THURSDAY WORKSHOP 

Thursday

A CMA ~~Wednesday~~ Workshop not to be missed

Stephen Hood,  
University of Canberra Senior Secondary College  
Lake Ginninderra  
Presents:



# Mathematical Literacy

## Synopsis:

After briefly exploring broad principles of effective literacy in the mathematics classroom, this workshop demonstrates development of skills, knowledge and fluency using two activities, one from the bank of lessons created under the Mathematics Curriculum and Teaching Program (MCTP) in 1993 and another from the Scootle digital object repository.

The aim of the first activity is to stimulate students to develop interpretive and descriptive skills about a graph and then to stimulate creative writing skills in a group recount of the many stories that the graph represents. The activity explores how this resource can be used early in high school years and then be extended into higher year levels to develop knowledge and use of equations and algebra.

The second activity is based around the Scootle learning object "Hamlet Happens". The activity opens with a brief review of Shakespeare's famous soliloquy from Hamlet and then develops fluency and skills in experimental and theoretical relative frequency and calculation of probabilities. The activity also describes opportunities the activity presents to students to record and analyse a data set in a systematic way.

Whilst both activities will be delivered based on experience in the secondary setting, primary colleagues will be able to see applications of these concepts in their own settings.

***Namadgi School Thursday 5 November 2015 (term 4)***  
***4:30pm- 6:30pm***

Cost: \$20 for non-members, Free for CMA members or institutional members (two per institution only).  
Light refreshments available from 4:30pm. Promptness appreciated.

Booking is essential: Simply register by emailing Ed Staples at [canberramaths@gmail.com](mailto:canberramaths@gmail.com) or visit the CMA website:

<http://www.canberramaths.org.au/professional-learning-opportunities.html>