

Highest Common Factor

June 2017



Newsletter of the Australian Association of Mathematics Teachers (AAMT) Inc.

From the President



I would like to thank the members of the AAMT Council for 2016–17: Mary Coupland, the Immediate

Past President, Jim Spithill, the Victorian representative, and Brett Stephenson, the Tasmanian representative, have all finished their terms. Their contributions have been greatly appreciated over the last couple of years. We welcome Michaela Epstein as the Councillor for Victoria. Michaela is the President of the Mathematical Association of Victoria and Head of Learning at Maths Pathways. Rom Cirillo (Western Australia) has been appointed Treasurer as the former Treasurer Jurek Paradowski (Canberra Mathematical Association) is now the President Elect.

The Council, by a unanimous vote, has elected three new Life Members: Will Morony (CEO of AAMT), Professor Kim Beswick (University of Tasmania) and Associate Professor Judy Anderson (University of Sydney). Life members of the Australian Association of Mathematics

Teachers are teachers of mathematics, mathematics educators or mathematicians who have rendered distinguished service to the Association over an extended period of time.

Kim Beswick has been President of the Mathematical Association of Tasmania (MAT, 2005–2007) and President of AAMT (2012–14). Her tenure as President of AAMT came at a time of transition to a revised Constitution that saw substantial changes in the role of the AAMT Council, and expectations of Councillors. Kim Beswick's term as AAMT President will be particularly remembered as setting the tone and strategic intent of AAMT Council in its revised form. Kim taught mathematics and science in a number of Tasmanian secondary schools before joining the University of Tasmania in 2000. Kim has published more than 90 peer-reviewed publications and maintains close links with the mathematics teaching profession through her research.

Judy Anderson first joined the AAMT Council in 1995 as MANSW representative. From 1996 to 1999 she served the Association as the National Coordinator of Serial

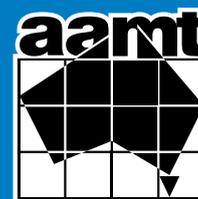
Publications with oversight and responsibility for the AAMT's three professional journals. In that role she continued as a member of the AAMT Council. In 2004 she rejoined the Council, firstly as MANSW Councillor and then as President Elect/President/Immediate Past President 2007–2011. Her time as President coincided with the first stages of the development of the Australian Curriculum. Judy is Director of the STEM Teacher Enrichment Academy at the University of Sydney and a member of the University's Academic Board.

Will Morony is currently Chief Executive Officer of AAMT. He came to the role in 1997 after a career as a teacher and mathematics officer in the curriculum section of the South Australian education department. In his work with AAMT, Will has taken a leadership role in all aspects of the Association's work to represent and support members of AAMT. This has included policy and curriculum development, professional learning, progressing the numeracy agenda and teacher professional standards. He has led the transformation of AAMT into an organisation that is

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fully engaged with the digital world and with 21st century approaches to member relationships and communications.

In addition to these awards, Leon Poladian has been given a Distinguished Service Award for the work he has done with the National Mathematics Summer School. Leon has been directly involved with the National Mathematics Summer School for over a quarter of a century. He has undertaken all of the roles in the academic program. He was a Tutor on several occasions in the 1990s. Since 1992 he has been a Lecturer, either to the Experienced or Main group in all but a few years. In 2000 he became Deputy Director, serving in this role until his appointment as Director in 2013 until 2017.

All of these awards will be celebrated at the opening of the biennial conference *Capital Maths* in Canberra on 11 July.

It is pleasing to see that Australia came equal fifth in the 2015 Financial Literacy PISA assessment. The test measured 15 year olds' knowledge of personal finances and their ability to apply this knowledge to financial problems. Australian students scored an average of 504 points which was significantly higher than the OECD average of 489 points. Unfortunately, Australia performed significantly lower than the 2012 Australian cohort who scored an average of 526 points. This trend was also observed in the 2015 PISA science, reading and mathematics results. More details can be obtained at www.acer.org/ozpisa.

AAMT is currently involved in many projects that are designed to help classroom teachers and improve student learning. AAMT now owns Maths300 and will be working with affiliates to establish a

network of Maths300 contacts. We are hoping to develop activities for hand-held devices and to include web-based software. Maths Inside (UTS partnership) has produced a number of high quality classroom videos and resources for secondary mathematics. These are linked to the Australian Curriculum and will be released to teachers through the affiliates. AAMT has also been working with Pivot to develop an online maths-specific student feedback questionnaire that can be used by secondary mathematics departments. We have started collaborating with Social Ventures Australia (Tanya Vaughan) who emphasise evidence-based research and give support and guidance to teachers. Tanya will be giving a presentation at the conference.

The AAMT Council are working on several position papers. The current *Digital technologies* paper is being updated and two new papers are being produced: *Algorithmics and problem solving in mathematics* and *Statistical literacy*. Algorithmics presents 21st century ways of thinking that are applicable to the teaching of mathematics and are already embedded in the Victorian curriculum. We look forward to Christine Franklin's keynote at the conference: *A personal journey to statistical literacy at the school level*. Christine is a Statistics Ambassador, Lothar Tresp Honoratus Honors Professor and Senior Lecturer Emeritus at the University of Georgia, and a Fellow of the American Statistical Association.

I hope to see many of you at the conference in July and I am looking forward to the conversations.

Allason McNamara

President

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reSolve: Maths by Inquiry Website now live

A dedicated reSolve: Mathematics by Inquiry website is now available with downloadable classroom resources for Years 5–8: www.resolve.edu.au.

Teachers can also register for access to the 'members' section' (approval will normally occur within a day) which has draft materials for Foundation to Year 4 and Years 9 to 10. The project team values feedback from teachers trialling materials; please use the online feedback form embedded in the lesson resources. If you have photos of students' work samples, please forward them to mbi@science.org.au.

Also available via the members' section are the draft Professional Learning Modules and Special Topics. Additional resources will be added as they reach the draft stage.



reSolve Champions

More than 250 expressions of interest have been received from educators wishing to become reSolve Champions. Later this year, Champions will undertake professional learning to develop their understanding of an inquiry approach to teaching mathematics, and make strategic use of reSolve materials in their schools and professional networks. Late applications will still be considered. For information about the program, visit www.aamt.edu.au/resolve or contact Matt Skoss on 0418 624 631 or msskoss@aamt.edu.au.

Maths Inside

Do you teach mathematics to secondary school students? Do you want to try a STEM-inspired approach with engaging and open-ended activities?

The Maths Inside project, a collaboration between the University of Technology, Sydney, AAMT and CSIRO, takes you into the lives of scientists and the mathematics that they use. Each module is based around a short video featuring scientists involved in cutting-edge research. The scientists explain the mathematics that they use every day in their work—mathematics which ranges from simple number operations to very sophisticated concepts. There are different pathways that led to their careers, but all share a passion and commitment about the importance and wonder of mathematics.

Current topics available for trialling are: *Maths in 3-D* (mapping 3-D objects using a hand-held scanner); *Stargazing with the SKA* (using the biggest telescope in the world); *Bees with backpacks* (really!); *Prawns for profit* (breeding and farming prawns); *Big data, better hospitals* (a remarkably accurate predictive tool). Three more are in development: *Cleaner coasts*; *Modelling climate changes*; *Knowing nutrition*.

If you are interested in trialling the modules, please contact the Maths Inside Project Manager: marco.angelini@uts.edu.au.

EngQuest 2017

Now in its 16th successful year, EngQuest is a free, hands-on, STEM-based program that is great fun for students.

Go to www.engquest.org.au and register now for access to the EngQuest curriculum resource material and to request your free, newly developed, EngQuest Education Pack (while stocks last).

From the CEO



AAMT has taken over the running of Maths300, the highly respected collection of lessons that incorporate innovative approaches to teaching mathematics for Years F–12. The concept was developed over 20 years ago by Doug Williams and Charles Lovitt, both of whom are known and highly respected by teachers and others around the country, and, indeed, internationally. They have continued to develop Maths300—it is in many ways the embodiment of their vision for mathematics classrooms.

Charles and Doug approached AAMT in the middle of 2016 to gauge the association's interest in taking over Maths300. It is very much their 'baby', so they were very keen to place it in safe hands that were capable of building on their work.

On its part, the AAMT Council gave the matter very careful consideration. Their first point of call was to determine whether AAMT having Maths300 as one of the resources available members would be consistent with the Association's purpose.

There are two objectives in the Constitution of the AAMT that are highly relevant:

3.4 Provide high quality professional development and networking opportunities so as to build a community of teachers and school leaders of mathematics.

3.5 Provide quality activities, appropriate resources that engage students of mathematics at all levels, and online networks that support pre-service and in-service teachers to adopt innovative practices.

The Council concluded that not only is Maths300 a clear fit with these objectives, the Association has the potential to promote and provide the professional support it

offers to more schools and teachers than ever before.

From there it was a matter of carefully analysing the business case for Maths300 being part of AAMT. What are the likely returns to the association? Does the association have the technical, administrative and educational expertise? Can we increase the reach of Maths300? How can we—AAMT and the Affiliates in each State and Territory—promote professional development that draws on Maths300 to illustrate effective teaching practices? The answers to these and other questions led to the Council being enthusiastic about the potential.

The next step was seeking financial and legal advice—this is an investment of a significant amount of the association's reserves. In the end, we were able to agree a price and terms for the sale, and Maths300 became AAMT's in late April.

Our immediate plans are for 'business as usual'; that is, current subscribers to Maths300 will experience no change. We will gradually be uploading new lessons and improving existing lessons on the basis of feedback from users, and the Maths300 eNews will continue.

However, the AAMT Council believes that over time we can build a bigger and better Maths300. What we do need is to be guided by the users—and potential users—of Maths300. We will be doing some formal 'market research'; but if you have any thoughts please do not hesitate to send them to maths300@aamt.edu.au at any time.

This is an exciting development in the life of AAMT. If you have not had a look at Maths300 recently—or at all—I would encourage you to take the free tour at www.maths300.com.

Will Morony
Chief Executive Officer
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New President Elect

Jurek Paradowski (ACT) is the new President Elect of AAMT; as his was the only nomination received, no election was necessary.



Jurek has recently retired from full-time teaching, but prior to doing so, he was the Executive Teacher of the Mathematics Faculty at Telopea Park School, a public school located in the Parliamentary Triangle in Canberra.

In a teaching career spanning more than 30 years in ACT schools, Jurek has taught in both junior high schools and Year 11–12 secondary colleges. He has also mentored a number of Teach for Australia Associates.

In 2008, a team led by Jurek at Erindale College were presented with an ACT Public Education Excellence Award for “Driving Innovation and Best Practice” through their radical changes to the teaching and learning environments within the school, that in turn changed the ways in which students approached their mathematics studies.

Jurek was President of the Canberra Mathematical Association from 2009–2011. He has served on the AAMT Council representing the ACT from 2010 to 2015, and since then as AAMT Treasurer.

As the President of AAMT, Jurek is keen to see that all mathematics teachers—whether primary, junior secondary, senior secondary, or ‘out-of-field’—continue to be supported by the association and its affiliates.

CHOOSEMATHS Awards 2017

The CHOOSEMATHS Awards 2017 celebrate students and teachers who demonstrate mathematics achievement, creativity and excellence in Australian schools.

The teacher awards include a number of categories with the major prize awarded to a teachers who have impressed with their outstanding achievement in inspiring and fostering the participation of girls in mathematics. Applications close Friday 7 July. Go to <http://choosemaths.org.au/choosemaths-awards>.

Day of STEM

The Optus Cyber Security Experience is the fourth program released within the Day of STEM platform. The program explores six cyber security careers as well as the decision processes involved in a typical corporate cyber security attack. The program is designed to give students insight into the various cyber security careers that are in high demand.

The other programs currently available are: STEM Cup, Australia 2020, and Women in STEM. Go to <http://dayofstem.com.au> to register.



2017 Kronosaurus Korner School Challenge

This year’s problem-solving team challenge is in two parts, each designed to appeal to a range of students from Years 5–9.

Teams may start the Challenge whenever they wish and must submit their work no more than one month after starting; 15 November 2017 is the deadline for submissions to the site.

Participation is free. For more information, go to www.kronosauruskorner.com.au/visit-us/education-schools/school-challenge.



Articles sought for AAMT journals

Writing for one of AAMT’s journals (*Australian Primary Mathematics Classroom*, *The Australian Mathematics Teacher* and *Australian Senior Mathematics Journal*) is not only a great form of reflection on your own practice, but is also a great way to share ideas among colleagues. Besides the latest research, AAMT is keen to publish reports on innovative classroom practices, teaching ideas, reviews of resources, opinion pieces, and more.

More information about writing and submitting articles is available at www.aamt.edu.au/Journals/Submissions and the AAMT office and journal editors can also help with advice.

The Australian Association of Mathematics Teachers (AAMT) Inc. is a federation of:

Canberra Mathematical Association (CMA)
Mathematical Association of New South Wales (MANSW)
Mathematical Association of South Australia (MASA)
Mathematical Association of Tasmania (MAT)

Mathematical Association of Western Australia (MAWA)
Mathematical Association of Victoria (MAV)
Mathematics Teachers Association of the Northern Territory (MTANT)
Queensland Association of Mathematics Teachers (QAMT)