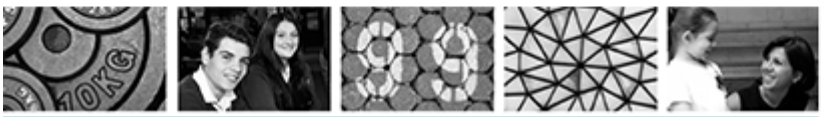
The Highest Common Factor



aamt
Australian Association of Mathematics Teachers Inc.

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From the CEO's desk

Welcome to another edition of AAMT's newsletter, Highest Common Factor. In this edition you will find the introductory article written by our new President Michael O'Connor as well as the usual other useful links, tips and opportunities.

I hope you find it useful and I look forward to connecting with you again in our next newsletter.

As always, don't hesitate to reach out to the team if we can assist in any way.

Allan Dougan
CEO

A message from the President

Mathematics teaching, and the teaching profession in general, face significant challenges in the years ahead. Anyone reading this article is familiar with the debates around the differing philosophies on what is the most effective approach for maximizing learning and what constitutes essential, or in some cases even preferred, content. In part, this has been in response to the changing needs of the workforce and the nature of work. One component of this discussion has been around in and out of field teachers and whether the solution to the dearth in suitably trained mathematics teachers can be remedied by retraining teachers from other disciplines.

So, what can be done?

My involvement in the out of field conversation over the years has led me to realise that retraining from within the existing workforce is a negative sum proposition. All disciplines are experiencing the same problem. There are not enough teachers in the system toenable retraining to produce a steady state sufficient for the need.

I had a discussion with an emeritus professor of mathematics some months ago and we were teasing out what was the key importance of having teachers trained in-field. One idea

mentioned was the maturity of thought that accompanies or perhaps results from it. To illustrate this, I will use the analogy of music.

People can be divided into three groups when it comes to music - listeners, performers and composers.

Listeners are the audience and the consumers. They don't "do" music, but they benefit from its application. They consciously consume what they like and are influenced by much more at a subconscious level. If you doubt this, try watching a favourite movie without its score.

Performers are the players and their support crew. This is more than just the "roadies" but also encompasses, managers, broadcasters and the like. Everyone in this group has a solid working knowledge of how music "works". This comes after considerable amounts of explicit instruction, training and practice.

Composers are the creators of music. They can bring the pieces together and make something new.Training and discipline are important, but so is experimentation and playing around. These individuals have a "maturity of thought" or process that takes them beyond standard applications.This also inspires others to follow in their footsteps.

Similarly for mathematics we have the same three groups. As a technological society, we consume more mathematics than ever before in history. Unfortunately, instead of celebrating and encouraging the performers and composers we seem to put more stock in showing people the sheet music. Rather than giving students an instrument to play or taking them to a concert, we demand that they learn to sight read.

For learning to transcend beyond the mere mechanics, teachers need to be able inspire their students. To do this it is in turn necessary to get beyond what G.H. Hardy described as jumping through hoops and do real mathematics.*

How does this relate to my opening statements? In order to improve the state of mathematics education we as teachers need to embody what we would have our students aspire to. In 2006, AAMT published The Standards for Excellence in Teaching Mathematics (read more about it here). While they are similar to the AITSL standards, they pre-date them and focus on the specific learning area of mathematics. I encourage all teachers of mathematics, from early years to post graduate level to take these standards and strive for the excellence they espouse.

Michael O'Connor
President

**While Hardy was referring to the Tripos exam at Cambridge there are parallels to the modern experience.*

We need your help with a STEM survey!

We need your help in a study investigating young women's engagement with digital technology and STEM.

ACER is conducting a research study for CSIRO looking at young women's engagement with STEM and specifically, digital technology. As part of this study, we are investigating teachers' attitudes and professional experiences in this area through an online survey. All responses collected in the survey will be completely anonymous and confidential.

Click on the green button below to share your experiences. Thank you for your time!

Click here to participate in the survey

ICME-15 : The first Newsletter

Click here to read the first newsletter recently published.

You are encouraged to widely distribute the newsletter to colleagues and friends in the mathematics/mathematics education communities.

Podcast: What makes a good maths lesson

Allan Dougan, former maths teacher and CEO of AAMT hosts this Texthelp Talks episode on the very practical topic 'What makes a good maths lesson'.

He is joined by maths education consultant Dr. John West and together they tackle the million-dollar question. Have a listen.

Click here to listen to the podcast

Want to work with AMT? Here's your chance!

AMT are looking to recruit a new European Girls' Mathematical Olympiad Team Leader.

Click here for the position description for this role.

Any interested parties should contact Ben Kirk (ben.kirk@amt.edu.au) for further information.

From the Bookstore

Check out these best sellers and order your copy now!

Developing Efficient Numeracy Strategies Stage 1

NSW Department of Education & Training

Detailed support to help develop students' counting strategies in the junior primary years. A great deal of research and common sense indicates developing robust counting strategies is fundamental to effective numeracy. This book provides a developmental framework for counting strategies that has been identified through extensive research in Australian classrooms. For each stage there is a range of activities to address particular aspects - sequencing, numeral identification and patterns etc. in the early stages, operations and strategies in the latter. The layout of each activity explicitly highlights key aspects of teaching as well as a brief discussion of why the learning is important and methods effective. This second edition includes references to the Australian Curriculum: Mathematics.

ISBN-13: 978-1-875900-78-7

Non-members: $25
Members : $20

Mathematics Assessment for Learning Rich Tasks and Work Samples

Authors: Ann Downton, Rose Knight, Doug Clarke & Gerard Lewis

A sought-after book for teachers seeking to inform their teaching by the use of tasks which can help to identify what their students know and can do in mathematics.

A great strength of this resource is that it not only presents appropriate tasks, but discusses these in the context of real student work samples (across a broad range of grade levels and demonstrated understandings) and possible assessment rubrics.

A must-have for the mathematics/numeracy coordinator or resource library in your school.

ISBN-13: 978-0-9756718-6-3

Non-members: $55
Members : $44

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