

QAMT (Saturday 26th) August Forum: *Mathtech* - Teaching Math using Technology - Yeronga SHS



8.45-8:55am	Registration – outside PROFESSIONAL LOUNGE (top of D block)		
9.00-9.20am	QAMT AGM ROOM: PROFESSIONAL LOUNGE (top of D block)		
Session 1 9:20-10:15am	re[Solve]: Maths by Inquiry Peter Cooper/Ben Habermehl - AAMT (middle and senior years) ROOM: D5 (top of D block)	Multiplying Learning Outcomes with EV3 James Dwyer– Modern Teaching Aids (all years) ROOM: D6 (top of D block)	
10:20- 10:40 Morning Tea and networking opportunities ROOM: PROFESSIONAL LOUNGE			
Session 2 10:45-11:40am	Pre-service teachers' session Tammy MacGinley and Jordan Ayache (senior years) ROOM: D5 (top of D block)	Authentic Math Inquiry using Drones Michael Holmstrom - STEMPunks (middle and senior years) ROOM: D29/30 – bottom floor	Multiplying Learning Outcomes with EV3 James Dwyer– Modern Teaching Aids (all years) ROOM: D6 (top of D block)
11:45-12:20pm Light Lunch and networking opportunities ROOM: PROFESSIONAL LOUNGE			
Session 3 12.25-1.40pm	The Flipped Maths Classroom – Presentation and Panel Discussion Presentation (55min): Joel Speranza (Ormiston College) Panel (20min): Joel Speranza (Nudgee College), Rachel Schnitzerling (Wavell SHS), Ken Herbert (Narangba Valley High School), Moira Edwards (Helensvale SHS), Paulina Sliedrecht (Mansfield SHS) (all years) ROOM: D6 (top of D block)		Maths 300 Rodney Anderson - AAMT (all years) ROOM: D5 (top of D block)
Session 3 1.45-2.45pm	Assessment in the new Queensland syllabuses – Examinations Theo Clark and Peter Mondolo - QCAA (senior years) ROOM: PROFESSIONAL LOUNGE (top of D block)	Authentic Math Inquiry using Drones Michael Holmstrom - STEMPunks (primary and middle years) ROOM: D29/30 – bottom floor	
2:50-3.30pm	Sharing Practice Session with the above presenters ROOM: PROFESSIONAL LOUNGE (top of D block)		

re[Solve]: Maths by Inquiry

Peter Cooper and Ben Habermehl - AAMT

An Australia-wide project that provides the resources to help students learn and use mathematics in meaningful and engaging ways. The project is delivered by AAMT on behalf of the Australian Academy of Science (AAS) and embodies an approach to Maths teaching which supports the STEM agenda. It is led by a team of expert teachers and academics from around the country. This session will provide an overview of the resources within the project and examples of how they can be used to improve learning outcomes in your context.

Authentic Math Inquiry using Drones

Michael Holmstrom - STEMPunks

Drones are already an integral part of society and will play an even bigger role in years to come. Through this professional development workshop, explore how Drones can be used in STEM learning within schools.

We will be exploring the Digital Technologies curriculum and, in particular, algorithms and programming. We will be looking into how Drones fit this particular area of the curriculum beginning with the fundamental concepts involved in designing and implementing algorithms and creating digital solutions and programs. We introduce programming concepts of repetition, sequences, decisions, abstraction and decomposition, which underpin the art of turning an algorithm into something a computer can understand.

Areas of learning:

- Introduction to Drones and their capabilities to be integrated into STEM learning and the curriculum.
- Review of Drone platforms and learning tools to teach Drone coding.
- Innovative ideas on how to make Drone coding a fun learning experience for you and your students.

This session will use content from the CSER F-6 MOOC course to help teachers to understand the basic concepts of the Digital Technologies curriculum. Attending teachers are encouraged to register for the MOOC so that they have access to this content and additional resources related to the Digital Technologies curriculum.

FLIPPING YOUR MATHS CLASSROOM

Presentation: Joel Speranza – Flipped Learning YouTube Channel Creator and Secondary Maths Educator – HOD Mathematics Ormiston College

Join leading flipped classroom innovator and mathematics educator Joel Speranza for this Masterclass where he'll encourage you to adopt the 'flipped learning' model. Joel uses this approach to turn homework into 'homelearning' in order to enable the classroom to become a collaborative learning space. In this Masterclass, Joel will cover the benefits of flipping, how to get started, what learning will look like in your flipped classroom and how to make videos. He will also share the process he uses to provide students with individualised feedback using digital tools.

Panel: Teacher at different stages in their Flipped learning journey share their experiences and answer your questions about flipping your classroom.

Multiplying Learning Outcomes with EV3

James Dwyer – Modern Teaching Aids

Come along to this session where you'll get hands on with the Lego EV3 robotics kits. As part of this session, you'll work on tasks where you'll program the robots to demonstrate your understanding of maths concepts.

Assessment in the new Queensland syllabuses – Examinations

Theo Clark and Peter Mondolo - QCAA

The Queensland Government will introduce new senior assessment and tertiary entrance systems, starting with students entering Year 11 in 2019. In the new senior subjects General Mathematics, Mathematical Methods and Specialist Mathematics, two of the internal assessment items will be examinations. This session outlines the changes to senior mathematics examinations and how teachers can develop questions to suit the examination design specifications required in the new syllabuses. In this session, officers from the QCAA Mathematics learning area will:

- outline key differences in internal examination requirements in the new syllabuses compared to the current syllabuses
- define simple familiar through to complex unfamiliar and how to identify key aspects of these type of questions
- assist in the construction of examination questions using the 'principles of developing mathematics problems'.

Maths 300

Will Morony – AAMT

Maths300 is an attempt to find the 300 most interesting maths lessons from classrooms across Australia and beyond and to filter them into learning networks everywhere to generate professional discussion. This session will focus on how you could use Maths300 in your school.

Technology Seminar: Using Desmos to teach Integration in Mathematics B

Jordan Ayache & Tamara MacGinley

Desmos is a dynamic and powerful tool that enables teachers to generate and solve authentic and engaging real-world problems. Integration is an essential concept in senior mathematics, yet students often lack the conceptual understanding and confidence to exploit this mathematical machinery effectively. Research in mathematics education suggests a multifaceted approach to teaching integration, linking numerical and analytical processes to graphical representations. In this presentation, we will demonstrate how the graphing software, Desmos, can be used as a powerful tool in finding the area of complex shapes using definite integrals. We will step through examples of how Desmos can be used in the classroom to teach the meaning behind integration and remove the cognitive burden associated with calculating integrals using pen and paper.

Participants will require the audience to have a laptop or device and access Desmos (<https://www.desmos.com>)