



MTANT MathsMeet North 2019 Conference Program

Friday 31 May & Saturday 1 June, Good Shepherd Lutheran College, Howard Springs



#MTANTMathsMeet19

Friday 31 May				
5:00 pm	Conference Registration, finger food & Tea/Coffee			Lower Senior School
5:45 pm	Welcome: <i>Rachel Boyce</i> , Principal, Good Shepherd Lutheran College Conference Opening: <i>John Bament</i> , MTANT President, & Acknowledgement of Country: <i>Ben Ogden</i> , Larrakia Man, Yr 12 student GSLC			Chapel
6:00 pm	Opening Keynote Address: Happy, healthy, enjoyable and productive classrooms <i>Charles Lovitt</i> , Consultant			Chapel
7:30 pm	Happy Hour, sponsored by Texas Instruments .			Lower Senior School
Saturday 1 June				
8:30am	Conference Registration & Tea/Coffee			Lower Senior School
	Room 1 (SS1)	Room 2 (SS5)	Room 3 (SS6)	
Session 1 9:00 am	1a 20 Models for Place Value [T-6] <i>Guy Glover</i> NT Department of Education	1b The Art of Mathematics [2-12] <i>John Bament</i> O'Loughlin Catholic College	1c Technology, Conjectures & Proofs [10-12] <i>Isabelle Hoadley</i> O'Loughlin Catholic College	
10:30 am	Morning Tea			Lower Senior School
Session 2 11:00 am	2a STEM AR/VR [T-9] <i>Roy Anderson</i> Catholic Education NT	2b Differentiation & Assessment [7-12] <i>Estia Sales</i> The Essington International School	2c Why Study Maths? & About AMC. [10-12] <i>Shannon Phillips</i> Australian Maritime College, UTAS	
Session 3 12:00 pm	3a Problem Solving & Comp'n Resources [2-9] <i>John West</i> MAWA	3b Common Maths Misconceptions [4-10] <i>Leanne McMahon</i> AMSI	3c The Domino Effect [10-12] <i>Lola Sleep</i> Good Shepherd Lutheran College	
1:00 pm	Lunch			Lower Senior School
Session 4 1:45 pm	4a Hit the Deck [T-7] <i>Lola Sleep</i> Good Shepherd Lutheran College	4b Strategy Games [5-9] <i>Isaak Bovell</i> St Joseph's Catholic College	4c Teacher YOU Tube [T-12] <i>John Bament</i> O'Loughlin Catholic College	
2:45 pm	Closing Keynote Address: Rich and Productive Classrooms: Looking back / Looking forward Charles Lovitt , Consultant			Chapel
3:45 pm	Afternoon Tea followed by AGM and Prize Draws.			Lower Senior School

Opening Keynote Address **Happy, healthy, enjoyable and productive classrooms**

Charles Lovitt, Consultant

This keynote presentation will explore extremely practical and immediately useable classroom activities. The real purpose of these are to engage teachers in discussion about the role of such teaching and learning 'ingredients' as non-threatening learning environments, open-ended investigative approaches, meaningful contexts, technology support, visual and kinaesthetic learning, concrete materials, catering for the '7-year-gap' of students abilities (success for all), creative unit planning, alternative assessments – indeed all those elements that collectively contribute to 'Happy, Healthy, Enjoyable and Productive' classrooms.

1a 20 Models for Place Value [T-6]

Guy Glover, NT Department of Education
guy.glover@nt.gov.au

We all construct understanding of mathematical concepts through materials and models, it's up to teachers to know how and when to introduce them in the classroom. In this workshop you use 20 models and gain an appreciation of their role in developing understanding.

1b The Art of Mathematics [2-12]

John Bament, O'Loughlin Catholic College
john.bament@nt.catholic.edu.au

How does computer software draw a square, equilateral triangle or, for that matter, any polygon? In this practical, hands-on workshop you will program robotic cars to draw various shapes and solve numerous puzzles. Leave with your own piece of mathematical art and some practical examples that you can use in your classroom.

1c Technology, Conjectures & Proofs [10-12]

Isabelle Hoadley, O'Loughlin Catholic College
isabelle.hoadley@nt.catholic.edu.au

One of the key skills students in the Advanced Mathematics pathway need to master is developing conjectures and proofs. In this session, aimed at teachers from Year 10 to Year 12, we will investigate how technology can be used to explore patterns and generate conversations that will develop an understanding of conjectures.

2a STEM AR/VR [T-9]

Roy Anderson, Catholic Education NT
roy.anderson@nt.catholic.edu.au

Some interactive augmented reality (AR) apps and virtual reality (VR) options will be demonstrated. Linking mathematical language to Digital Technologies using "Bots" and deconstructing coding language to link to everyday tasks will also be covered.

2b Differentiation & Assessment [7-12]

Estia Sales, The Essington International School
estia.sales@essington.nt.edu.au

Some simple techniques will be covered to show how to plan for differentiation and formative assessments to give your Middle and Senior School students control over their own learning. As assessment and feedback takes place every day in the classroom, some ideas will be shared of how to give students feedback in every lesson and include them in the assessment process.

2c Why Study Maths? & About AMC

Shannon Phillips, Australian Maritime College, UTAS
amc.whystudymaths@utas.edu.au

Why Study Maths? This interactive program for students, that includes reasons for students to continue to study mathematics through to year 12 in terms of where it could take them after their school years, will be demonstrated. The program relates to engineering and more specifically Maritime Engineering. It includes example questions that are application-based problems and these are slotted into where the class currently is within the curriculum. About AMC (Australian Maritime College): You will learn what AMC is, what it has, what it can offer your students from VET courses to bachelor degrees in Maritime Engineering and Maritime Business.

3a Problem Solving & Competition Resources [2-9]

John West, MAWA
president@mawainc.org.au

Affordable and user-friendly resources and activity guides for teachers from MAWA (Mathematical Association of Western Australia) will be shown.

3b Common Maths Misconceptions [4-10]

Leanne McMahon, AMSI
leanne@amsi.org.au

Using data to inform teaching is a concept that we are all familiar with and its importance has been shown in many studies. In this session we will look, briefly at why it is important to gather data and the type of data that is normally obtained. We will then focus on two tools that I have found to be amazing in diagnosing the common misconceptions that students face – Victorian Education's Assessment for Common Misunderstandings and SMART assessments, from the University of Melbourne. Both are free, fabulous and underpinned by great research. Although I am focussing on years 4-10 in this session, there is something for everyone. Bring your computer and we'll try some of the assessments!

3c The Domino Effect [10-12]

Lola Sleep, Good Shepherd Lutheran College
lola.sleep@gmail.com

Proofs by Mathematical Induction is part of the Specialist Mathematics Year 11 and 12 NTCET courses and an area that students have traditionally found difficult. In this session successful strategies, that have been used with my classes for the last four years, will be shared that involve divisibility, matrix, sum and product proofs.

4a Hit the Deck [T-7]

Lola Sleep, Good Shepherd Lutheran College
lola.sleep@gmail.com

A standard deck of playing cards is a powerful tool for helping students to reinforce basic number facts and practise arithmetic processes in a fun way. In this session you will be introduced to some of these games and have the opportunity to play them.

4b Strategy Games [5-9]

Isaak Bovell, St Joseph's Catholic College
isaak.bovell@ntschoools.net

Mathematical thinking can be deeply joyful. Students rarely hold this opinion. Logically determined strategy games can provide an avenue to introduce students to reasoned mathematical thinking and communication in an engaging context. This workshop will model practical ways to use historically-rich games such as Nim and Hex, to improve student dispositions, and harness student voice in the classroom. These investigative tasks develop students' awareness and capability of the proficiency strands of understanding and reasoning, as well as preparing them for responding to high stakes folio tasks encountered in the NTCET in the senior years.

4c Teacher YOU Tube [T-12]

John Bament, O'Loughlin Catholic College
john.bament@nt.catholic.edu.au

Most students will use the internet to learn how to do something; whether it be to factorise algebraic expressions, tie a specific fishing knot, solve the Rubik cube or complete a gaming level. What students enjoy and learn from most, are videos created by their own classroom teacher. They don't mind if it's not professionally edited or has slick animations, they like the connection and fact that their teacher has created it for them. In this practical workshop you will see how easy it is to create a video; using your phone, webcam or document camera and how to share it with your students. You never know, you may become the next Ms/MrWooTube!

Closing Keynote Address: Rich and Productive Classrooms: Looking back / Looking forward

Charles Lovitt, Consultant

There are many elements of the maths education landscape that are in steady transition. Some emphases declining, others on the rise, others being modified. This session will examine, in a very practical way using stories from schools aiming for Rich and Productive Classrooms, some of the changes to our big picture visions, pedagogy, differentiation, technology, planning and assessment, proficiencies of understanding and reasoning, contextual and investigative learning, and cross connections with other disciplines to name a few.

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