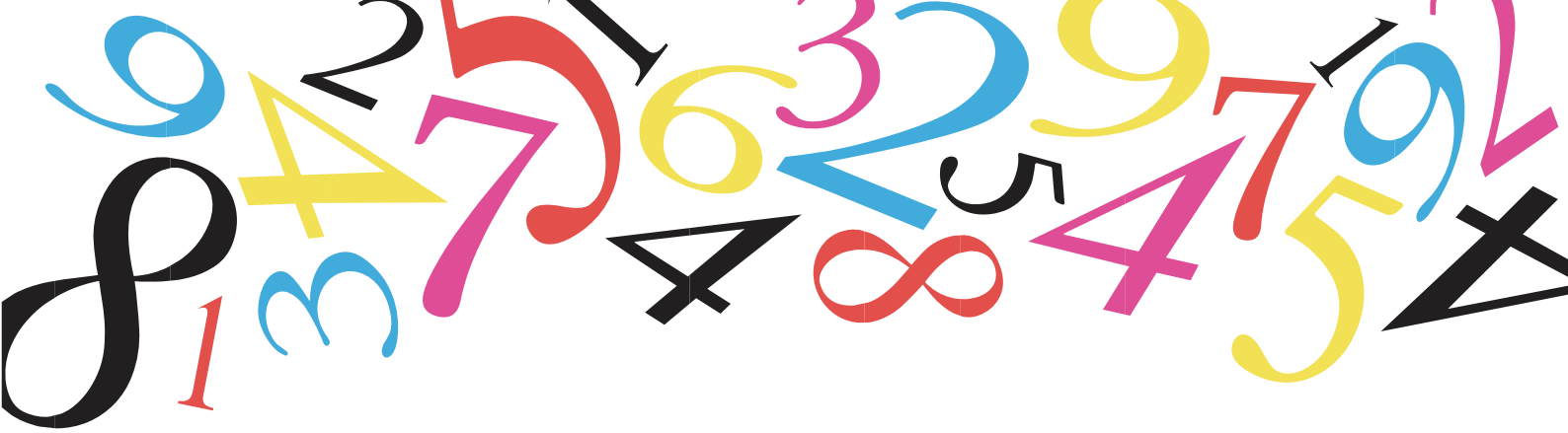

MASA ANNUAL CONFERENCE 2022

The Mathematical Association of South Australia Inc

THURSDAY 21st - FRIDAY 22nd JULY

CONCORDIA COLLEGE
24 Winchester Street, Highgate

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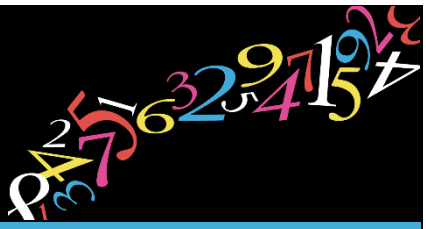
PROGRAM



DAY 1	THURSDAY 21ST JULY
7.00 am	**"Breakfast" Pat-A-Cake** – 50 Duthy Street, Malvern ($10.00 deposit secures your booking when registering for the Conference)
8.30 am – 8.45 am	**Registration** – tea and coffee available
8.45 am – 9.00 am	**Welcome and Housekeeping** –
9.00 am – 9.10 am	**Conference Sponsors** –
9.10 am – 10.00 am	**The Carol Moule Keynote Address / Anthony Harradine** / Potts-Baker institute Prince Alfred College
10.00 am – 10.30 am	**Morning Tea** / **visit Trade Displays** /
10.30 am – 11.30 am	**Workshop 1**
11.30 am – 12.30 pm	**Workshop 2**
12.30 pm – 1.30 pm	**Lunch** / **visit Trade Displays** /
1.30 pm – 2.30 pm	**Workshop 3**
2.40 pm – 2.55 pm	**Maths Space Global Release**
3.00 pm - 4.00 pm	**Keynote 2 / Andrew Lorimer-Derham** / Think Square
4.00 pm – 5.00 pm	**"Happy Hour"** - nibbles & refreshments provided
5.30 pm onwards (kitchen open-5.00pm)	**"Dinner" Earl of Leicester Hotel** – 85 Leicester Street, Parkside ($10.00 deposit secures your booking when registering for the Conference)
DAY 2	**FRIDAY 22nd JULY**
7.00 am	**"Breakfast" Pat-A-Cake** – 50 Duthy Street, Malvern ($10.00 deposit secures your booking when registering for the Conference)
8.30 am – 8.45 am	**Registration** – tea and coffee available
8.45 am – 9.00 am	**Welcome and Housekeeping** –
9.00 am – 9.10 am	**Conference Sponsors** –
9.10 am – 10.00 am	**Keynote 3** / **Peter Liljedahl** / Thinking Classrooms
10.00 am – 10.30 am	**Morning tea** / **visit Trade Displays** /
10.30 am – 11.30 pm	**Workshop 4**
11.30 pm – 12.30 pm	**Workshop 5**
12.30 pm – 1.30 pm	**Lunch** / **visit Trade Displays** /
1.30 pm – 2.30 pm	**Workshop 6**
2.30 pm	**Close of Conference**

Keynote 1 - The Carol Moule Keynote Address - Thursday 21st July – Day 1

Anthony Harradine / Potts-Baker institute Prince Alfred College

Bio:

Anthony has spent a good part of his professional life trying to determine the optimal conditions in which a student will engage with the abstract world of mathematics. Through his many and varied roles over the years, which include teacher, Head of Mathematics, Chief Examiner, author, researcher, speaker, professional learning provider, co-creator of eduKart, Numerical Acumen and MathsCraft, he has developed a decent understanding of how to create those optimal conditions. There are few things that Anthony likes more than working with students in such conditions.

Title: Simplify

Abstract:

Did the title suggest to you a talk about algebra?
Well, no. It's different.

Building on the three Ps theme of this conference, I will share classroom examples that illustrate *playful* teaching and learning, how *partnerships* are forged and how a generally *positive* outcome can be achieved.

More specifically, this talk describes the model that guides how I teach mathematics.
The model is the result of my attempts to process the unwieldy amount of advice that has been offered to teachers over the years.

In explaining the model, I will define problem solving, explain the critically important role it plays in students being able to understand new-to-them concepts, and explain the fundamental reliance of the three Ps on a fourth P: *pedestrian*.

Keynote 2 - Thursday 21st July Day 1

Andrew Lorimer-Derham / Think Square

Bio:

Andrew helps people find joy in maths.
He has dedicated the last 10 years to helping bring more intentional fun into maths classrooms across Australia through unique hands-on games, puzzles and school workshops.

Andrew's greatest expertise is crafting rich mathematical activities students will happily give up their lunchtime to continue. He has recently partnered with Maths Mate to reimagine the Year 7-8 textbook.

Andrew is the founder of Think Square and has worked with numerous math associations, Cricket Australia, app developers, radio stations, magazines and charities to bring creative ideas to life.

Andrew will inspire you to see possibilities, take risks, and think outside the box as you shape the next generation of mathematicians.

Keynote 2 - Thursday 21st July Day 1 – continued …

Andrew Lorimer-Derham / Think Square

Title: Transforming the maths classroom through 'Intentional Fun'

Abstract:
Happy Hour begins early!

This playful session will explore a range of creative activities designed to engage any learner, build skills and confidence and promote rich mathematical discussion. Come prepared to participate!

This session will describe why 'smiles' are one of my key measures of success and demonstrate how a playful approach to teaching will completely transform student dispositions toward maths.

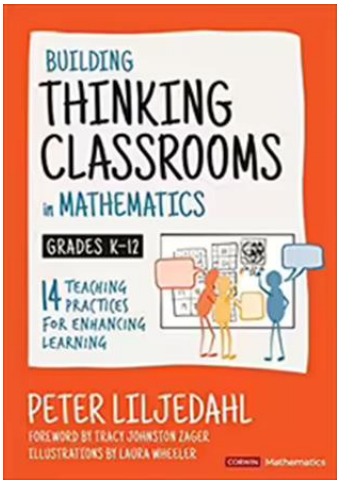
This will be a very hands-on experience.

Keynote 3 - Friday 22nd July – Day 2

Peter Liljedahl / Thinking Classrooms

Bio:
Dr. Peter Liljedahl is a Professor of Mathematics Education in the Faculty of Education at Simon Fraser University and author of the best-selling book, *Building Thinking Classrooms in Mathematics (Grades K-12): 14 Teaching Practices for Enhancing Learning*.

Peter is a former high school mathematics teacher who has kept his research interest and activities close to the classroom. He consults regularly with teachers, schools, school districts, and ministries of education on issues of teaching and learning, problem solving, assessment, and numeracy.



Title: **Building Thinking Classrooms**
Abstract:
Much of how classrooms look and much of what happens in them today is guided by institutional norms laid down at the inception of an industrial-age model of public education. These norms have enabled a culture of teaching and learning that is often devoid of student thinking.

In this session, I present some of the results of over 15 years of research into how teachers can transform their classrooms from a space where students mimic to where students think. The practices discussed will intertwine with, and make extensive references to, the recently published book, *Building Thinking Classrooms in Mathematics (Grades K-12): 14 Teaching Practices for Enhancing Learning.*

The Mathematical Association of South Australia Inc

DAY 1	Thursday 21st July
8.30 am – 8.50 am	**Registration** – tea and coffee available
8.50 am – 9.00 am	**Welcome and Housekeeping** –
9.00 am – 9.10 am	**Conference Sponsors**
9.10 am – 10.00 am	**The Carol Moule Keynote Address 1** – **Anthony Harradine** / Potts-Baker institute Prince Alfred College
10.00 am – 10.30 am	**Morning Tea** / **visit Trade Displays**

10:30 am – 11.30 pm **Workshop 1** –

Session	Presenter and Title	Yr levels	Room
1.1	**Capurso, Sam** / Blackfriars Priory School Making the most of our 'tried and true' assessment types in Mathematics	7 - 12	
1.2	**Lenghaus, Christine** / TAFE Gippsland Proportional Reasoning - Scale, scale, scale!	2 - 12	
1.3	**Lorimer-Derham, Andrew** / Think Square The Power of Purposeful Puzzles	5 - 9	
1.4	**Gorman, Vanessa** / UniSA: Education Futures Unpacking 3 key considerations: Version 9 ACARA Maths year 7 and 8	7 - 8	
1.5	**McPherson, Raiph** / Seaton High School Using Excel and gamificaton to enhance numeracy in year 7	6 - 7	
1.6	**Saad, Sylvia & Danielle Weatherley** / Adelaide Botanic High School Collaborative Creative Practices	7 - 10	
1.7	**West, John** / ACARA Engaging and enrichment maths on a shoestring	4 - 9	
1.8	**Pampena, Simon /** Numbercrunch Mathematical Communication Error Correcting Codes with Sudoku!	9 - 12	
1.9	**Woodard-Knight, Deb** / Walford Anglican School for girls MathsCraft for the little ones	4 - 5	
1.10	**Felstead, Brad /** The Maths Show The Magic of Maths	2 - 8	

11.30 am – 12.30 pm **Workshop 2** –

Session	Presenter and title	Yr levels	Room
	Abdelal, Nadia & Cassandra Gates / Emmaths & St Barbara's Parish School Using NAPLAN questions to help inform your teaching **SESSION CANCELLED**		
2.2	**Booth, Helen** / MASA Informing the Misinformed – develop critical statistical literacy in the classroom	4 - 10	
2.3	**Butler, David** / University of Adelaide Summing up in the middle	All	
2.4	**James, Dr Susan** / The university of Melbourne Engagement beyond the curriculum	5 - 12	
2.5	**Lorimer-Derham, Andrew** / Think Square Cartesian Not So Plain!	5 - 9	
2.6	**Lupton, Alastair** / Adelaide Botanic High School Simplex and the science of burger making	10 - 11	
2.7	**McMahon, Leanne** / AMSI From Patterns to Algebra	4 - 10	
2.8	**Lin, Kathy /** Edrolo Using visual models and misconceptions to deepen understanding in middle years mathematics	7	
2.9	**Fox, Peter** / Texas Instruments Roll Up-Roll Up	7 -12	

12.30 pm – 1.30 pm – **Lunch** – **visit Trade Displays**

1.30 pm – 2.30 pm **Workshop 3 –**

Session	Presenter and title	Yr levels	Room
3.1	**Browning, Jacinta & Jacqueline Clark** / Essential Assessment Partnering Positively to Know and Grow your students with Essential Assessment	R - 10	
3.2	**Budenberg, Tim** / St John's Grammar School Using a Population Simulator to engage students with statistics	7 - 10	
3.3	**Carbrera, Carmen & Jarrad Strain** / Cardijn College Simulations and algorithmic thinking in Maths	9 - 10	
3.4	**Harradine, Anthony** / Potts-Baker institute Prince Alfred College Doing Mathematics through MathsCraft	5 - 10	
3.5	**Kissane, Barry** / Murdoch University Playing with calculators in primary and middle school	5 ,6 & 7	
3.6	**McLeod, Michelle** / The University of Adelaide: STEM Teacher in Residence School Connections – Building Partnerships between STEM Research and STEM Learning.	7 - 12	
3.7	**Schreuder, Cassie** / Westminster School From Scope and Sequence to Collaboration	3 & 4	
3.8	**Quane, Kate** / UniSA: Education Futures Fidget Toy or Mathematics Gem	R - 6	
3.9	**Frost, Valerie & Deb Woodard-Knight** / King's Baptist Grammar School and Walford Anglican School for Girls Smorgasbord of Specialist	12	

2.40 pm – 2.55 pm **- Global Release for Mathspace**

3.00 pm – 4.00 pm **- Keynote 2 / Andrew Lorimer-Derham** / Think Square

4.00 pm – 5.00 pm - **Happy Hour & Raffle Prize Draw** – nibbles & refreshments provided

CONCORDIA COLLEGE

DAY 2	Friday 22nd July
8.30 am – 8.50 am	**Registration** – tea and coffee available
8.50 am – 9.00 am	**Welcome and Housekeeping** –
9.00 am – 9.10 am	**Conference Sponsors**
9:10 am – 10:00 am	**Keynote Address 3** – Peter Liljedahl (via Zoom)
10.00 am – 10.30 am	**Morning Tea** / **visit Trade Displays** /

10.30 am – 11.30 pm **Workshop 4** –

Session	Presenter and title	Yr levels	Room
4.1	**Budenberg, Tim** / St John's Grammar School Tackling Misconceptions about the World through data	7 - 10	
4.2	**Butler, David** / University of Adelaide Stick figure data	7 - 12	
4.3	**Garrett, Rebecca** / Trinity College Blakeview A Thinking Classroom Experience: The Basics	All	
4.4	**Hage, Jonathan & Lauren Mazzarolo** / Seymour College Reporting against the standards: facilitating continual reporting	All	
4.5	**Kissane, Barry** / Murdoch University Playing with graphics calculators	10,11,12	
4.6	**Leydon, John** / Concordia College Methods conjecture questions and the use of performance standards	11 & 12	
4.7	**McMahon, Leanne** / AMSI Out of Field Teachers - Turning a problem into an opportunity	All	
4.8	**Sheppard, Kate & Irene Wilcocks** / Adelaide Botanic High School Is OneNote your OneSolution?	7 - 12	
4.9	**Sidhu, Reeta** / Australian Tax Office New Curriculum-aligned free teaching resources	7 - 12	
4.10	**Meston, Sanjeev/** Firbank Grammar School Victoria Python Coding and Mathematics on TI-84 Plus CE – **(Session one of two)**	7 - 12	

11.30 pm – 12.30 pm – **Workshop 5**

Session	Presenter and title	Yr levels	Room
5.1	**Booth, Helen** / MASA Teacher Noticing	All	
5.2	**Harradine, Anthony** / Potts-Baker Institute Prince Alfred College Learning new concepts through teacher-directed adventures	7 - 12	
5.3	**Hooper, Paul** / Efofex Getting up to Speed with FX Draw	7 - 12	
5.4	**Lorimer-Derham, Andrew** / Think Square 85% of People Misuse Statistics	5 - 9	
5.5	**McPherson, Raiph** / Seaton High School Recording Instructional video to make learning accessible	5-12	
5.6	**O'Shaughnessy, Glenn** / Education Perfect EP Online Assessments: Data, Feedback, Personalisation and Growth	5-12	
5.7	**Tronnolone, Dr Hayden** / Flinders University Connecting Maths and Biology to Model Disease	11	
5.8	**Meston, Sanjeev /** Firbank Grammar School Victoria STEM and Mathematics on TI-85 Plus CE. Session 2 of 2	7 - 12	
5.9	**Moylan, Joel** / Mathspace See how Mathspace is bringing the future of learning and assessment to every maths classroom, for free	3-12	

12.30 pm – 1.30 pm – **Lunch – visit Trade Displays** /

1.30 pm – 2.30 pm **Workshop 6**

Session	Presenter and title	Yr levels	Room
6.1	**Bulter, David** / University of Adelaide 65536	All	
6.2	**Capurso, Sam & Jarrad Strain** / Blackfriars Priory School & Cardijn College Preparing for the final examination in Year 12	12	
6.3	**Davis, Dr Neil & Tom Frossinakis** / MASA & Banskia Park International High School Getting Started with Project-Based Competitions	R - 12	
6.4	**Harradine, Anthony** / Potts-Baker Institute Prince Alfred College What makes for a good quizzing system?	7 - 8	
6.5	**Jones, Donna** / Portside Christian College Mental Mathematics in the Middle Years	5 - 9	
6.6	**Quane, Kate & Carolyn Buhren** / UniSA: Education Futures Making Mathematical Thinking Visible	R - 10	
6.7	**Garrett, Rebecca** / Trinity College Blakeview A Thinking Classroom Experience: Thin Slicing	R - 12	
6.8	**Dempsey, David & Julia Walsh** / Analytic Business Partners What it actually takes to deliver STEM in the classroom	7 - 12	

NAME and ABSTRACT	Workshop	Years
Abdelal, Nadia & Cassandra Gates / Emmaths & St Barbara's Parish School Using NAPLAN questions to help inform your teaching **SESSION CANCELLED** NAPLAN is made up of some great problem-solving questions that can be used in many ways to help inform our teaching and to develop our students' ability to successfully problem solve. In this workshop, Cassandra Gates, a year 7-9 teacher, will talk about how using NAPLAN questions as warm-ups has helped her to understand her students better. Along with problem solving, we will talk about how these types of questions can be useful as formative assessments as well as make student misconceptions about a topic more apparent.		
Booth, Helen / MASA Informing the Misinformed – develop critical statistical literacy in the classroom v9 of the Australian Curriculum has an increased focus on statistical literacy particularly regarding analysing, interpreting, validating and critiquing data and data presentations. If COVID has shown us anything it is that too many people are statistically illiterate, with statistics being used to push various agendas. This workshop will unpack the new Statistics strand and explore strategies to develop critical thinking in statistics.	**2.2**	**4 - 10**
Booth, Helen / MASA Teacher Noticing "To notice is to observe, realise or attend to." Teacher noticing is a key component of teaching expertise with the construct particularly relevant in the maths classroom. Focusing on the learning to notice framework of Attending, Interpreting and Shaping, this workshop explores what to notice, how to clarify that noticing and then how to act on the noticing and interpretation. Suitable for all year levels, with a particular focus on Early Career Teachers (ECTs) with the wisdom and skills of experienced teachers welcomed, this is workshop shed some light on a skill teachers develop and refine throughout their teaching career.	**5.1**	**All Years**
Browning, Jacinta & Jacqueline Clark / Essential Assessment Partnering Positively to Know and Grow your students with Essential Assessment This presentation will introduce our assessment model aligned to the P-10 Australian Mathematic Curriculum, which supports teachers to make data-informed decisions. Our differentiated Numeracy assessment and curriculum model, diagnostically assesses each student. The presentation will highlight the use of Individual and whole class data to target each student's Zone of Proximal Development and identify a learning pathway to foster student growth, engagement as well as mapping of students to the new Version 3 National Numeracy Progressions. Teachers will be encouraged to reflect on the following questions: Who are my students? What do they currently know? What do they need to learn next in order to grow? How can I move my student's forward in their learning progression? How will I know if my students have caught what I've taught?	**3.1**	**R - 10**

Budenberg, Tim / St John's Grammar School Using a Population Simulator to engage students with statistics The University of Queensland has developed an online population simulator called 'The Islands". This online world mirrors ours in incredible detail. Access id free. I'd like to share my experience and resources from using this tool in a classroom for years 7-10. Students design and run their own statistical investigations. Recommend attendees bring a laptop to participate fully.	**3.2**	**7 - 10**
Budenberg, Tim / St John's Grammar School Tackling Misconceptions about the World through data How Gapminder and Dollar Street can be used to empower and teach students how to have a fact-based world view. Gapminder is a free resource which combines many global data bases into a single interface. Students can explore global issues of poverty, education, health, gender etc. We'll cover the tools and how they can be used in the classroom and share resources.	**4.1**	**7 - 10**
Butler, David / University of Adelaide Summing up in the middle Your students don't have to get to the end of a problem or an activity to learn something useful. In this session, you will discuss the benefits of helping students sum up their learning somewhere in the middle and have a chance to practise.	**2.3**	**All Years**
Butler, David / University of Adelaide Stick figure data This session is a chance to play with the Stick Figure Data cards that I have designed especially for investigating relationships between different kinds of variables, as well as discuss how you might use them in your own classroom.	**4.2**	**7 - 12**
Butler, David / University of Adelaide 65536 My favourite whole number is 65536. In this session, you'll get to play with the cool maths ideas behind why.	**6.1**	**All**
Capurso, Sam / Blackfriars Priory School Making the most of our 'tried and true' assessment types in Mathematics This workshop will facilitate discussion of ensuring validity and fairness in assessment, particularly tests. It will consider task development, and the place of rubrics and the delivery of feedback.	**1.1**	**7-12**
Capurso, Sam & Jarrad Strain / Blackfriars Prior School & Cardijn College Preparing for the final examination in Year 12 This workshop will introduce strategies that can be used to support preparation for their final examination in Year 12, both in terms of students' revision and study habits. We may hold a follow-up workshop in Term 3 to share the successes and challenges experienced with implementing new approaches to facilitating examination revision.	**6.2**	**12**
Carbrera, Carmen & Jarrad Strain / Cardijn College Simulations and algorithmic thinking in Maths We have been using Python-based Jupyter Notebooks with Year 9 students to promote inquiry around Statistics, Geometry and Probability. The resources from Resolve provided a lot of support but we also learnt a lot along the way. This session will be a candid sharing of our experience and offer some suggestions for others interested in integrating technology and inquiry into their classes.	**3.3**	**9 - 10**
Davis, Dr Neil & Tom Frossinakis / MASA & Banksia Park International High School Getting started with competition-based competitions Ideas and examples of how to use investigative processes to have students present their findings in their areas of interest (or passions). The competition is open to all year levels and attendees will be shown examples of student work that earned substantial prizes.	**6.3**	**R - 12**
Dempsey, David & Julia Walsh / Analytic Business Partners What it actually takes to deliver STEM in the classroom STEM classes have great potential to increase student engagement and interest in all the components of it, but traditional class administration makes doing this problematic. David and Julia report on a trial of STEM classes in an NT classroom including what mindful adjustments were needed for success.	**6.8**	**7 - 12**
Felstead, Brad / The Maths Show The Magic of Maths Be amazed by the power of mathematics and numbers to read minds and perform magic. A workshop full of maths magic old and new to delight your students with.	**1.10**	**2 - 8**

Fox, Peter / Texas Instruments Roll up- Roll-Up A wealth of mathematics can be found in even the simplest of board games. Think of 20 square board, players take turns rolling their own die, the person that lands exactly on the last square first is the winner. How many sides would you like on your die? Greedy Pig, Monopoly, non-transitive dice and more, help your students build an understanding of probability in fun and engaging ways.	**2.9**	**7 - 12**
Frost, Valerie & Deb Woodard-Knight / Kings Baptist Grammar School & Walford Anglican School for Girls Smorgasbord of Specialist (and Methods Maths) Moderation matters and tips on calculators for the senior levels	**3.9**	**12**
Garrett, Rebecca / Trinity College Blakeview A Thinking Classroom Experience: The Basics Based on the 14 teaching practices that Peter Liljedahl describes in his book, *Building Thinking Classrooms in Mathematics (Grades K-12): 14 Teaching Practices for Enhancing Learning,* this workshop will get attendees to be the students in a thinking classroom. Attendees will work in groups to solve one of the rich tasks from the book to get insight into what a thinking classroom feels like. Concepts such as how to lock in student thinking, foster student autonomy and consolidate the learning intentions will be discussed.	**4.3**	**R - 12**
Garrett, Rebecca / Trinity College Blakeview A Thinking Classroom Experience: Thin Slicing Based on the 14 teaching practices that Peter Liljedahl describes in his book, *Building Thinking Classrooms in Mathematics (Grades K-12): 14 Teaching Practices for Enhancing Learning,* this workshop will get attendees to be the students in a thinking classroom. Attendees will work in groups on thin slicing activity to get insight into what this looks like in a thinking classroom. Concepts such as how to prepare for a thin slicing lesson, set up groups and check for understanding will be discussed.	**6.7**	**R – 12**
Gorman, Vanessa / UniSA: Education Futures Unpacking 3 key considerations: Version 9 ACARA Maths year 7 and 8 Within the new ACARA Mathematics curriculum Version 9 three of the key considerations include computational thinking, mathematical modelling and computation, algorithms and the use of digital tools in mathematics. In this workshop we will discuss how these areas can be highlighted and integrated into learning activities for students in year 7 and 8 mathematics. I will share some of the activities we have been designing with my team at UniSA Education Futures. Time will be dedicated to 'think tank' how you could adjust your current activities to include these focus areas.	**1.4**	**7 - 8**
Hage, Jonathan & Lauren Mazzarolo / Seymour College Reporting against the standards: facilitating continual reporting Marking mathematical investigations can be an arduous task. That is why we aim to align investigative skills with task-specific criteria to speed up marking and give students qualitative feedback. This workshop will give teachers a look into how we are redesigning investigations to better align with performance standards and facilitate ease and consistency of marking for continual reporting.	**4.4**	**All**
Harradine, Anthony / Potts Baker Institute Prince Alfred College Doing Mathematics through MathsCraft Come along and be a student. Experience doing mathematics, ie engage collaboratively with a lovely problem from the MathsCraft suite of problems. Take it back to your class. They will love it.	**3.4**	**5 - 10**
Harradine, Anthony / Potts Baker Institute Prince Alfred College Learning new concepts through teacher-directed adventures I will share a few examples of teacher-directed adventures that works well for me when introducing new concepts to students. The adventures, ever so carefully, problematic learning, which seems to make learning easier for students.	**5.2**	**7 - 12**
Harradine, Anthony / Potts Baker Institute Prince Alfred College What makes for a good quizzing system? Over the last 18 months I have worked on developing a system of 'endless' quizzes. Used after initial learning has taken place, they are an enjoyable way to consolidate and maximise fluency. The system will be demonstrated using the Fractions/Decimals/Percentages topic for years 7 and 8.	**6.4**	**7 - 8**

Hooper, Paul / Efofex Software Getting up to Speed with FX Draw FX Draw is used in thousands of schools to produce publication quality graphics. This session will help you get up to speed with FX Draw's many features. The session is suitable for everyone from gurus to new users.	**5.3**	**7 - 12**
James, Dr Susan / Melbourne University Engagement beyond the curriculum The maths outreach team run enrichment programs and events for students in Years 5 to 12 both face to face and virtually. Our team aim to engage students by introducing them to concepts outside the curriculum. The workshop gives a description of some of these activities and the key concepts behind creating fun and engaging extension activities.	**2.4**	**5 - 12**
Jones, Donna / Portside Christian School Mental Mathematics in the Middle years What are the benefits of teaching and practising mental mathematics in the Middle Years? What are some strategies and ideas for implementing effective mental maths activities in the classroom?	**6.5**	**5 - 9**
Kissane, Barry / Murdoch University Playing with calculators in primary and middle school Just as mathematics is often misunderstood as work instead of play, calculators are often misunderstood as providing answers instead of experience. In this session we will explore some mathematical topics in Number, Measurement and Probability in the upper primary years to see how playing with calculators might help students make sense of them.	**3.5**	**5 - 7**
Kissane, Barry / Murdoch University Playing with graphics calculators Just as mathematics is often misunderstood as work instead of play, calculators are often misunderstood as providing answers instead of experience. In this session we will explore some mathematical topics in the secondary years to see how playing with graphics calculators might help students make sense of them.	**4.5**	**10 - 12**
Lenghaus, Christine / TAFE Gippsland Proportional Reasoning - Scale, scale, scale! The use of multiplication for scaling is critical to understand proportional reasoning. This is a hands-on workshop of the tools and resources I use in my classroom to develop students' ability to reason proportionally.	**1.2**	**2 - 12**
Leydon, John / Concordia College Methods conjecture questions and the use of performance standards Conjecture questions have been part of the SACE performance standards since 2010 for Stage 1. However, there are not many resources to expose senior students to this type of questions. There will be consideration of what makes a good conjecture question and how to expose students to this genre of questions as well as looking at performance standards in Stage 1 and Stage 2.	**4.6**	**11 - 12**
Lin, Kathy / Edrolo Using visual models and misconceptions to deepen understanding in middle years Mathematics In this practical hands-on session, participants will explore how to use visual models and misconceptions to help students learn new concepts, building a deep conceptual understanding (beyond rote learning procedures). By workshopping several examples, participants will explore how visual models and explicitly addressing misconceptions are powerful tools to not only support students but provide formative data to inform differentiated instruction. Whether you're a beginning teacher or looking to refresh your strategies for teaching middle years, this session will give you practical insights and ideas to scaffold and support student learning.	**2.8**	**7**
Lorimer-Derham, Andrew / Think Square Cartesian Not So Plain! If you want some engaging hands-on activities to get your learners working with co-ordinates, exploring linear patterns and gaining confidence with linear graphing This session is for you. During this workshop participants will engage in a range of hands-on activities designed specifically for the Cartesian Plane.	**2.5**	**5 - 9**
Lorimer-Derham, Andrew / Think Square 85% of People Misuse Statistics	**5.4**	**7 - 10**

In a world of fake news, false marketing claims and predatory gambling advertising the skill of statistical reasoning has never been more important. Participants of this playful workshop will gather data and select statistical measures that 'prove' they are the best cup stacker…even if they're not! Com Prepared to engage in rich mathematical discussion as we evaluate truth claims and learn how easy it is to manipulate data to say what you want it to.		
Lorimer-Derham, Andrew / Think Square The Power of Purposeful Puzzles A well-designed mathematical puzzle will encourage hours of skill practice while at the same time develop the capacity for critical and creative thinking. Puzzles can engage learners of any ability, as evidenced by the countless number of students I've witnessed give up their own lunchtimes attempting to solve them. This session will equip you to design your own puzzles and activities by discussing key principles for creating rich, engaging activities. During this workshop participants will produce their very own mathematical puzzle.	**1.3**	**4 - 9**
Lupton, Alastair / Adelaide Botanic High School Simplex and the science or burger making The simplex algorithm is a powerful tool. A glimpse of its power can be had, long before tertiary study. If considered in two dimensions, it is a rich context for the graphing and solving of linear inequalities in Year 10 Mathematics or Year 11 General Mathematics. This workshop will use the context of designing a "better" hamburger patty to introduce the simplex algorithm. With a video introduction and all the necessary elements for an engaging assessment task, or just a great lesson or two, I bet you can't wait to sink your teeth into this one (sorry – burgers not included)!	**2.6**	**10 - 11**
McLeod, Michelle / The University of Adelaide: STEM Teacher in Residence School Connections – Building Partnerships between STEM Research and STEM Learning. Looking to enhance the 'M' in STEM through the introduction of Design & Build Challenges, outreach activity sessions, research examples and partnerships with STEM academics? Come along to this workshop to learn about the University of Adelaide's *School Connections* Project. *School Connections* supports teachers to build collaborative partnerships across our Faculty of Sciences, Engineering and Technology. The project is developing curriculum linked STEM learning experiences connected with tangible examples of current, future and emerging STEM research and innovation. In the session you will have the opportunity to explore established opportunities and begin collaborations to design future opportunities.	**3.6**	**7 - 12**
McMahon, Leanne / Australian Maths Science Institute From Patterns to Algebra Patterns are on the maths curriculum from reception and provide a source of fun and creativity for teachers and students alike. But why are patterns so important in the early years? And how can we facilitate that very important transition from patterns to algebra? This session gives some ideas to use in both primary and secondary classes to encourage students to think algebraically. I include some fun assessment tasks and great resources for this topic.	**2.7**	**4 - 10**
McMahon, Leanne / Australian Maths Science Institute Out of Field Teachers - Turning a problem into an opportunity It is a well accepted phenomenon that there is a scarcity of mathematics specialists in Australian schools. AMSI has estimated that between 21 percent and 38 percent of Year 7-10 maths classes are taught by out-of-field teachers. In this session we will examine the Out-of-Field maths teaching phenomenon, looking at the current research, PL possibilities and the impact that it has on students. We will discuss the opportunities that Out-of-field teachers present and how we can support these teachers to make the most of these opportunities. This session is for mathematics leaders, both primary and secondary, as it can be argued that there are many out of field maths teachers in primary schools. It is also for out-of-field mathematics teachers who would like to contribute to the discussion.	**4.7**	**All**
McPherson, Raiph / Seaton High School Recording Instructional video to make learning accessible Student attendance and engagement in continuous classroom learning can no longer be assumed. Making learning accessible to students who are absent, in quarantine, or have complex social and emotional needs is vital. This practical workshop will demonstrate how you can easily record original instructional videos to make learning accessible using PowerPoint. Common pitfalls will be shared. PowerPoint is required.	**5.5**	**5 - 12**

McPherson, Raiph / Seaton High School Using Excel and gamificaton to enhance numeracy in year 7 By leveraging the principles of gamification along with advanced features of Microsoft Excel, Seaton High School implemented a new initiative designed to improve motivation for primary school skill revision. This presentation will present the results of the initial action research study, as well as offer a workshop for participants interested in taking their next steps with Excel. Experience with Excel is required.	**1.5**	**6 - 7**
Meston, Sanjeev / Firbank Grammar School Python coding and Mathematics on TI-84 Plus CE Coding is becoming an essential component of student learning, more so in STEM subjects. This session will demonstrate the use of the TI-84 plus CE graphing calculator to code in Python. This enhances conceptual understanding for the learner. We may extend the session (time permitting) to connect external devices to the Graphing Calculator and code these within the Calculator to perform actions / operations using the the Innovator Hub, Rover etc Session one of two.	**4.10**	**7 - 12**
Meston, Sanjeev / Firbank Grammar School STEM and Mathematics on TI-84 Plus CE Coding is becoming an essential component of student learning, more so in STEM subjects. This session will demonstrate the use of the TI-84 plus CE graphing calculator to code in Python and enhance Mathematical thinking. This session will demonstrate coding TI-84 Plus CE graphing Calculator. Session two of two to perform actions / operations using the the Innovator Hub, Rover etc. The Rover can graph Mathematical functions.	**5.8**	**7 - 12**
Moylan, Joel / Mathspace See how Mathspace is bringing the future of learning and assessment to every maths classroom, for free Hello! We'd like to invite you to this special launch workshop for our new, and entirely free, learning and teaching tool. Our goal is to help kids learn at their own pace, to learn independently, and to support them with tools to monitor growth. Importantly, our goal is to support every single student to achieve these things. But how? Join this workshop to learn about our new essential education tool, packaged into a simple and easy-to-implement classroom resource.	**5.9**	**3 - 12**
O'Shaughnessy, Glenn / Education Perfect EP Online Assessments: Data, Feedback, Personalisation and Growth This presentation will showcase the power and flexibility of the assessment platform within EP. Detailed feedback reports are generated for both students and teachers. Additionally, growth reports can be generated to analyse improvement between spaced assessments. An extensive range of pre-built assessments from Levels 5-10A, including diagnostics, are available. Additionally, teachers can create their own questions or entire assessments via the user-friendly EP Studio tool.	**5.6**	**5 - 12**
Pampena, Simon / Numbercrunch Mathematical Communication Error Correcting Codes with Sudoku! A fun group workshop which introduces and explores the mathematics of error correcting codes. Whenever digital information is sent, some of it is lost due to errors and static. To compensate for these losses extra data is transmitted along with the original message as a buffer. Different methods of data buffering are explored in this activity until the group finds the right one to get the job done - a Sudoku. The result is a dynamic and playful activity involving the entire class.	**1.8**	**9 - 12**
Quane, Kate / UniSA: Educations Futures Fidget Toy or Mathematics Gem This workshop will provide a range of teaching ideas for a readily available manipulative in the form of a Pop-it Squircle. The workshop will provide participants time to explore and evaluate the multiple uses of the Pop-it Squircle as a mathematical manipulative.	**3.8**	**R - 6**
Quane, Kate & Carolyn Buhren / UniSA: Educations Futures Making Mathematical Thinking Visible A key aspect of doing mathematics is communicating mathematical thinking. This workshop explores recent research regarding how students and teachers communicate their mathematical thinking so that it is visible to others. We will explore how open-ended tasks can be used to promote the communication of mathematical thinking.	**6.6**	**R - 10**

Saad, Sylvia & Danielle Weatherley / Adelaide Botanic and Unley High Schools Collaborative Creative Practices How can you have your entire cohort of Year 10s end up creating a collaborative piece of artwork using their understanding of Science and Mathematics? This workshop will go through an example of how to create an immersive STEM experience that has clear links between Science, Mathematics and Art. Come with us on a journey of innovative content creation through a collaborative lens. Together we will go through the processes that sat behind our collaboratively created unit, how this model can be applied in a traditional school setting and the benefits of designing an interdisciplinary STEM curriculum for staff and students.	**1.6**	**7 - 10**
Sidhu, Reeta / Australian Tax office New Curriculum-aligned free teaching resources The ATO has just released its new Tax Super and You online resource, with over 1000 free resources fully mapped to the Australian and State Curriculums. Learn more about this teacher-developed resource and how it also aligns to the new Australian Curriculum.	**4.9**	**7 - 12**
Schreuder, Cassie / Westminster School From Scope and Sequence to Collaboration The session will encompass a Growth Mindset perspective with personal experiences being shared. A hands-on exploration of a scope and sequence and a collaborative approach in identifying gaps will be fun. Activities shown on Time will be a highlight.	**3.7**	**3 - 4**
Sheppard, Kate & Irene Willcocks / Adelaide Botanic High School Is OneNote your OneSolution? This workshop will showcase ways in which Adelaide Botanic High School is currently using OneNote as our primary delivery system of mathematics lessons school wide. Examples of lessons from both middle and senior school will be shared, along with some of our reflections. We will demonstrate the pedagogical practises that, as a school, we have embedded into our use of OneNote. Attendees should bring a device with OneNote for Windows 10 installed if possible and, time permitting, will have an opportunity to explore using OneNote themselves. Bringing your own examples for sharing is welcome.	**4.8**	**7 - 12**
Tronnolone, Hayden / Flinders University Connecting Maths and Biology to Model Disease Since early 2020. our lives have been affected by COVID-19 and, importantly, the models used to predict its spread. These models combine biology and mathematics to make predictions that will protect people and our health system. Rather than esoteric objects, these models can be made accessible to students in both disciplines. This workshop will introduce a model for disease spread and an implementation of this model in Excel. We will explore how this model can be used to understand disease modelling and provoke inquiry. This connects to several topics within SACE Stage 1 Mathematics.	**5.7**	**11**
West, Dr John / ACARA Engaging and enrichment maths on a shoestring Brief Description: This workshop will explore resources and activities I have discovered over the years to teach various mathematical concepts, all of which are inexpensive or, in many cases, FREE! I will try to draw these together with what I've learned from hearing Jo Boaler, Charles Lovitt, Dylan William and John Hattie speak and my work for AAMT and ACARA.	**1.7**	**4 - 9**
Woodard-Knight, Deb / Walford Anglican School for Girls MathsCraft for the little ones. Introducing Year 4s and 5s to MathsCraft style thinking. That is, how to hold problem sessions without a specific answer, how to promote questioning, how to 'go with the flow'. What I do and how the students respond.	**1.9**	**4 - 5**

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