



THE MATHEMATICAL
ASSOCIATION OF VICTORIA



2023 Primary Mathematics Education Conference

Join us for
either or
both days

The Mathematical Association of Victoria (MAV) in collaboration with the Melbourne Graduate School of Education's Mathematics, Science, and Technology Education Group (MSTEG) present a conference focusing on primary school mathematics education.

DEVELOPING A BALANCED AND CHALLENGING MATHEMATICS PROGRAM

Balanced programs use a mix of pedagogical strategies, including student centred approaches, to produce opportunities for high engagement and growth. Balanced programs use teacher directed strategies such as setting clear learning goals, summarising previous learning, asking questions to check student understanding, and enabling and extending prompts to challenge and support all students. Research also shows that student-centred strategies, such as effective differentiation and enabling collaboration, supports students to solve more complex problems and positively impacts motivation (OECD, 2016). Varied lessons structures should be aligned to the mathematics content and proficiencies.

Challenging programs aim to prioritise cognitive activation strategies, such as problem solving, reflection and guided discovery, where students are challenged to summarise, question, clarify, predict and justify their thinking and solutions, and where students are encouraged to focus on the methods used rather than seeking answers. Is your program balanced and challenging for all students? Join us to explore, plan and understand better how we support the success and enjoyment of mathematics for all students.

Day 1: For leaders

Thursday 15 June, 2023

For current and emerging mathematics and numeracy leaders, school leaders and system leaders in primary schools.

Themes include:

- Understanding and exploring what leaders need to know to lead and implement successful mathematics programs.
- Exploring aspects of balanced and challenging programs, to deepen understanding of what works.
- Leading improvement and change to develop teacher capability and confidence.
- Developing myself as a mathematics leader.

Day 2: For teachers and educators

Friday 16 June, 2023

For all primary teachers to build confidence and develop professional ability as a mathematics educator in a supportive, hands-on environment.

Themes include:

- Understanding and exploring what teachers need to know to create successful mathematics experiences.
- Exploring balanced and challenging teaching strategies while developing content and pedagogical content knowledge.
- Using formative and summative assessment to understand the learner's progression.
- Developing myself as a professional educator.

<https://www.mav.vic.edu.au/Conference/Primary-Mathematics-Conference>

Major sponsor



Education
and Training

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Day 1: For Leaders

Thursday 15 June, 2023

Join us to explore mathematics leadership.
Sessions will provide practical advice to lead change in your own school context.

What primary leaders said about the primary conference.....

'My workshops were incredibly practical (on both days). I really enjoyed having the ability to discuss the topic with table groups of peers, complete activities and walk around and practice what we were preaching in the sessions.'

Session	Presenters	Title	Room
Welcome and Keynote 1 9am–10.15am	Leonie Anstey	A: Mathematics leadership that enables progress: Knowing what is important and what works! Keynote sponsor:   Education and Training	Q230
Break: 10.15am–10.45am			
Workshop rotation 1 10.50am–11.50am	Angela Rogers	B1: Targeted teaching - The what and how	Q217
	Natasha Ziebell and Catherine Pearn	B2: Lessons from learning+: An online mathematics tutoring program	Q416
	Eamon Light	B3: Keeping the balance: Picking the right lesson type for the right context	Q417
	Catherine Epstein Rogers and Isabella Kotteck	B4: Diagnosing and supporting students with dyscalculia	Q419
	Amy Somers	B5: The balancing act of achieving whole school numeracy improvement	Q420
	Pauline Thompson	B6: Leadership to enhance learning	Q421
Workshop rotation 2 11.55am–12.55pm	Wee Tiong Seah	C1: From values-based mathematics leadership to values-led mathematics leadership	Q217
	Kate Copping and Carmel Mesiti	C2: Building thinking classrooms: Using Liljedahl's strategies for a whole school approach	Q416
	Jane Hubbard and Hannah Marino	C3: Planning for differentiated instruction in mathematics	Q417
	Ramya Deepak Kumar and Jennifer Bowden	C4: Numeracy and Leadership: A transformative story of learning, leading, and growing along with our school	Q419
	Michael Nelson	C5: Effectively teaching multiplication across the school	Q420
	Andrew Lorimer-Derham	C6: Thriving mathematicians in the age of AI	Q421
Lunch and networking: 12.55pm–1.45pm			
Workshop rotation 3 1.45pm–2.45pm	Max Stephens and Danijela Draskovic	D1: School leaders promoting coding in mathematics and STEM in the primary years.	Q217
	Sara Gaul-McKee	D2: Leading improvement and change	Q416
	Paul Staniscia	D3: Collaborative planning	Q417
	Thomas Moore	D4: Developing productive pedagogical relationships	Q419
	Julia Hill	D5: Recognising and supporting mathematics teacher wellbeing	Q420
	Angela Rogers	D6: How can the 'Science of Maths' movement help guide our practice?	Q421
Keynote 2 2.50pm–3.50pm	Kate Copping	Primary mathematics leaders: investigating diverse perceptions of the role Keynote sponsor: 	Q230
F: Happy hour: 3.50pm – 4.30pm Join us for a chat, to network and debrief. Bring your questions.			

- In collaboration with the Melbourne Graduate School of Education, the University of Melbourne
- Intentionally designed program of high-quality presenters
- Learn from leaders with practical and educational research experience.

Register now

www.mav.vic.edu.au/Conference/Primary-Mathematics-Conference

Day 2: For teachers and educators

Friday 16 June, 2023

Do you find teaching mathematics a challenge? Are you looking to find some great new ideas to engage students? Join us to explore mathematics education, teaching and learning, with a focus on improving your mathematics content and content pedagogical knowledge.

What educators said about the teachers day....

'The conference provided an excellent forum to learn about and discuss current research-based information. It provided a range of workshops led by knowledgeable and approachable presenters. I was able to walk away excited about sharing some new ideas and resources with colleagues.'

Session	Presenters	Title	Room
Welcome and Keynote 1 9am–10.15am	Angela Rogers	A: Assessment: The good, the bad, and the ugly <i>Keynote sponsor:</i>   Education and Training	Q230
Break: 10.15am–10.45am			
Workshop rotation 1 10.50am–11.50am	Kaye Stacey	B1: Thinking deeply for success in mathematics	Q217
	Nick Devereux and Sophie Stewart	B2: Shoot and Score	Q416
	Catherine Epstein Rogers	B3: 24 square counters	Q417
	Roger Wander	B4: Half (or twice) as big: Exploring geometric meaning to extend creative thinking	Q419
	Hannah Martin and Jane Hubbard	B5: Student goals based on the mathematics online interview (MOI)	Q420
	Di Liddell	B6: Exploring the anticipate phase of the Launch, Explore, Summarise instructional model	Q421
Workshop rotation 2 11.55am–12.55pm	Sara Gaul-McKee	C1: Assessment practices to support student progression	Q217
	Max Stephens and Danijela Draskovic	C2: Promoting coding in mathematics and STEM in the primary years	Q416
	Catherine Pearn	C3: Identifying and addressing common fraction misconceptions	Q417
	Michael Minas	C4: Differentiation with open-ended tasks	Q419
	Michael Nelson	C5: Teach multiplication strategies with multiplicative thinking	Q420
	Renee Ladner	C6: Challenge connects students to the world	Q421
Lunch and networking: 12.55pm–1.45pm			
Workshop rotation 3 1.45pm–2.45pm	Justine Sakurai	D1: Using everyday technologies to teach mathematics	Q217
	Catherine Pearn	D2: Developing relational thinking rather than focusing on rules and procedures	Q416
	Paul Staniscia	D3: Problem solving – one piece of a much larger puzzle	Q417
	Rachel Pollitt and Amanda Merrifield	D4: Play-based mathematics learning - pedagogy and practice	Q419
	Veysel Akçakin and Wee Tiong Seah	D5: The Transition from mathematical modelling to STEM: Lighthouse Activity	Q420
Keynote 2 2.50pm–3.50pm	Carmel Mesiti	E1: Teachers talking about their classrooms: Learning from the professional lexicons of mathematics teachers <i>Keynote sponsor:</i> 	Q230
F: Happy hour: 3.50pm – 4.30pm Join us for a chat, to network and debrief. Bring your questions.			

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Day 1 - For Leaders

Thursday 15 June, 2023

Sponsors



Time	Title/abstract	Presenter biography
Welcome and Keynote 1: 9am-10.15am	<p>A: Mathematics leadership that enables progress: Knowing what is important and what works!</p> <p>Mathematics leaders have a moral imperative of equity and excellence for all learners. As leaders we advocate and influence mathematics teaching and learning by ensuring there is a coherent, inclusive, challenging, balanced, and connected mathematics program in every classroom. Leaders require evidence-informed strategies and approaches to achieve this. In this keynote session, Leonie will share insights, resources and supports to enable you to reflect and support your journey as a mathematics leader in your setting.</p>	<p>Leonie Anstey</p> <p>Leonie is the Principal Policy Officer, mathematics and numeracy, STEM unit, Curriculum and Assessment, at the Victorian Department of Education and Training. Her previous roles include: Victorian principal, educational consultant in Instructional Leadership and Mathematics and Numeracy Education, and a principal coaching and middle leaders mentor/coach. Leonie holds a Masters of Education, (research) Skills and Knowledge for Mathematics Teacher Coaching. Her teaching background includes secondary (mathematics/physics) and primary classroom teaching. She has supported early childhood settings to implement mathematics and science strategies. Leonie is passionate about all things mathematics and numeracy education, and supporting learners to make progress. She wants teachers to create amazing learning experiences and outcomes for their students.</p> <p>Keynote sponsor:  </p>
Workshop rotation 1: 10.50am-11.50am	<p>B1: Targeted Teaching - The what and how</p> <p>Research shows us that targeted teaching works. But what is targeted teaching? Is it just a politically correct way to describe 'ability grouping'? What does it look like in a classroom? This session unpacks targeted teaching with reference to relevant research, and provides practical examples of what a targeted teaching session might look and feel like for the teacher. Angela suggests a novel structure that will help you support teachers to introduce targeted teaching in a manageable way. You will leave this session with a clear understanding of what targeting teaching is (and is not) and how you can successfully introduce this approach to improve the quality of instruction at your school.</p>	<p>Dr Angela Rogers</p> <p>Dr Angela Rogers is an experienced primary school teacher and Numeracy Leader. She is the editor of the Mathematical Association of Victoria's teacher journal- Prime Number. Angela is a passionate presenter who regularly facilitates Professional Development for teachers. In 2014 she completed her PhD in Mathematics Education focusing on place value. She currently mentors and provides online PD for teachers and schools through her Numeracy Teachers Academy. Angela loves connecting research and practice to support teachers and leaders. Angela has 4 children and also works to promote a love of maths at home through her social media accounts @ numberdoctors.</p>

	<p>B2: Lessons from Learning+: An online mathematics tutoring program</p> <p>In 2021, a pilot one-to-one online mathematics tutoring project (Learning +) was established for South Australian students. This program was designed to provide no-cost online tutoring for Year 6 and 8 students whether they were deemed to be at, below or above expected level. Students were offered two half-hour online tutoring sessions per week for 10 weeks. To establish student needs tutors conducted specifically designed one-to-one Number interviews. The program included resource books with a specific focus on addressing mathematics misconceptions to support teaching and learning, a professional learning program for tutors and Professional Learning Communities (PLCs) with PLC leaders to support groups of 10 tutors. This presentation will focus on the results from the Year 6 Number interviews and examples of the resources designed to develop students' mathematical understanding of number and algebra.</p>	<p>Dr Natasha Ziebell and Dr Catherine Pearn</p> <p>Natasha Ziebell is a Senior Lecturer and coordinates the primary Humanities programs at the Melbourne Graduate School of Education. She has worked on various projects that support collaboration to optimise curriculum design and implementation. Her broader research interests focus on alignment and interpretation of the intended, enacted and assessed curriculum. Natasha's recent projects include the Learning+ online mathematics tutoring initiative in South Australia for students in Years 6-9, the Australian Education Survey focusing on the impact of COVID-19 on teaching and learning, and the Early Learning Teaching Trial (DESE). Natasha started her career as an early childhood and primary school teacher.</p> <p>Catherine Pearn is a Senior Lecturer in mathematics education at The University of Melbourne. She has taught in the Master of Teaching programs across all levels - Early Childhood, Primary and Secondary. Catherine is also a Senior Research Fellow in the Assessment Design Specialist team in the Assessment and Reporting Division at ACER. She has written assessment items for students from early childhood to upper secondary levels for state, national and international tests. Catherine provides mathematics professional development programs for Victorian, Australian and international primary and secondary mathematics teachers and leaders. Catherine is particularly interested in the identification and assistance for students mathematically at risk of not meeting national minimum or not achieving their mathematical potential. Catherine's PhD investigated the links between fractional competence and algebraic reasoning of middle-years students.</p>
	<p>B3: Keeping the Balance: Picking the right lesson type for the right context</p> <p>Like every mathematical number sentence needs to be balanced, so too does the way teachers deliver their lessons. This session will explore how three types of mathematical learning experiences work best when they are balanced and context-based. It will explain three lesson types (direct instruction, games and inquiry-based tasks) using practical examples and stories of practice.</p>	<p>Eamon Light</p> <p>Eamon is a passionate educator with 17 years' experience in a range of educational settings, including primary schools and university. Eamon enjoys working with teachers as a MAV Consultant to build capacity and confidence in teaching Mathematics. Eamon's priority in Mathematics Education has always been to build mathematical minds through developing critical, creative and independent thinkers from an early age. Eamon has a passion for developing positive dispositions towards Mathematics in young learners through building classroom culture, mathematical inquiry and using real life contexts to stimulate engagement.</p>
	<p>B4: Diagnosing and supporting students with dyscalculia</p> <p>Do you have students who have difficulty understanding seemingly simple number concepts, lack an intuitive grasp of numbers or have problems learning number facts and procedures? That was our story for a particular student in our school and before we knew it the word 'Dyscalculia' was being discussed. But what is Dyscalculia and how do you diagnose a student with dyscalculia? In February 2022 we set out to discover this and our journey has led us to set up practices in our school that are now helping students who are really struggling to grasp simple number facts.</p>	<p>Catherine Epstein Rogers and Isabella Kottek</p> <p>Catherine works as a consultant at MAV and is currently the Numeracy leader at St Paul's Bentleigh and St Peter's East Bentleigh. Catherine also runs her own Mathematics consultancy business. Catherine is passionate about teaching our students to be divergent thinkers, encouraging them to solve problems by making connections. In the past 15 years she has acquired a wealth of tried and tested rich tasks that extend across the strands, are easily differentiated and promote an environment of keen mathematicians.</p> <p>Isabella Kottek is a classroom teacher with a Master of Teaching (Primary). Since graduating in 2017 she has taught years F - 10 in a variety of public and Catholic schools as well as in other education institutions. Isabella has a passion for inclusive education to ensure all students have an equitable opportunity to learn and thrive.</p>

	<p>B5: The balancing act of achieving whole school numeracy improvement</p> <p>In 2019 Lyndale Greens Primary School were one of the forty schools involved in MAV and MSTEG's two-year collaborative project. Implementing school-wide change was a balancing act and a challenge however, our Numeracy leadership team effectively implemented changes that provided a big impact in our Numeracy teaching and learning. In this session, we reflect on our big take aways and share how we implemented our project to build school-wide capacity around Talk Moves. We will share our successes, challenges, and the benefits of working and learning together with our aspiring leaders throughout the project.</p>	<p>Amy Somers</p> <p>Amy Somers is the Numeracy Leading Teacher at Lyndale Greens Primary School. Through this role she has worked with aspiring leaders and teachers to implement Talk Moves across the school. She provides coaching and lesson demonstrations for her staff and supports new teachers to develop their practice in teaching their students to become numerate. Amy also provides her staff with professional development sessions and helps them keep up to date with all the wonderful research and resources available for assisting teachers and students. Amy also works as a consultant for the MAV and enjoys the opportunity to share her knowledge and experiences with teachers from other schools.</p>
	<p>B6: Leadership to enhance learning</p> <p>There are many levels of leadership in schools – teacher leadership, middle level leadership and senior leadership. This session will focus on the link between the various types of leadership and the impact they can have on student learning. We will look at what the research says about how leaders in schools can effectively create the conditions to enhance student learning of mathematics. The workshop will also focus on what this might look like in the practical day to day life of a school as you strive to implement whole school approaches to support mathematics teaching and learning.</p>	<p>Dr Pauline Thompson</p> <p>Dr Pauline Thompson is a lecturer in educational leadership at the Melbourne Graduate School of Education, the University of Melbourne. Pauline has worked in schools as a teacher, assistant principal and as an educational advisor. Her doctoral studies focussed on the role of professional learning to make long-term improvements to teacher practice. Her current research is focussed on the role of middle leaders in schools and their impact on teaching and learning.</p>
Workshop rotation 2: 11.55am-12.55pm	<p>C1: From values-based mathematics leadership to values-led mathematics leadership: Why and how?</p> <p>(Mathematics) leadership is by nature values-based. School and other institutional values, as well as what leaders value individually, shape professional intentions, choices and decisions. In turn, these affect what mathematics content is emphasised in the timetable, across other subjects and learning areas, as well as what professional learning for teachers look like. All these lead to flow on effects on how different mathematical concepts and skills are taught in the classroom. In this workshop, participants' collective experiences will be used to demonstrate how Values-led leadership is different, why it is desired over values-based leadership, and how mathematics leaders can develop it in professional practice.</p>	<p>Professor Wee Tiong Seah</p> <p>Wee Tiong Seah is Professor in Mathematics Education at the Melbourne Graduate School of Education, The University of Melbourne. Wee Tiong is a member of the National Expert Group for the 'Literacy and Numeracy Test for Initial Education' [LANTITE], and had been part of the federal government's Expert Advisory and Research Group. Wee Tiong has delivered workshops for principals and school leaders on behalf of the Victorian Department of Education, and some 30 research keynote addresses around the world. Wee Tiong's current research interests include the harnessing of cognitive appraisal constructs (such as values), the fostering of mathematical wellbeing, development of values alignment strategies, as well as international comparative studies</p>

	<p>C2: Building thinking classrooms: Using Liljedahl's strategies for a whole school approach</p> <p>Building thinking in maths classrooms can be challenging but rewarding. Supporting teachers to use research based pedagogical strategies can build engagement in mathematics. In this session, we will be exploring Liljedahl's suite of strategies for building thinking classrooms and sharing our experiences of trialling them with our students.</p>	<p>Kate Copping and Carmel Mesiti</p> <p>Kate Copping is a lecturer in Mathematics Education and PhD candidate at the Melbourne Graduate School of Education (MGSE). Her research involves leadership and teacher professional learning in mathematics. Kate has provided mathematics professional development for teachers through ACER, DET and within individual schools. She has taught in schools in Victoria, NSW and USA, and has also worked in teacher education for MGSE since 2008.</p> <p>Carmel Mesiti is Lecturer in Mathematics Education at the University of Melbourne. She has been teaching in the mathematics primary, secondary and masters education programs at the Melbourne Graduate School of Education. Carmel has worked as a research fellow on several ARC-funded international research projects at the International Centre for Classroom Research. She is currently Project Manager of The International Classroom Lexicon Project involving ten research teams internationally. Carmel's research has centred on exploring, through international video-based research, the nature of teaching and learning in mathematics classrooms, as well as the differences in pedagogical lexicons of education communities worldwide. In 2017 she was awarded the MGSE Research Leadership Excellence Award in recognition of outstanding contribution to a program of internationally significant research.</p>
	<p>C3: Planning for differentiated instruction in mathematics</p> <p>Planning for differentiated instruction in mathematics classrooms is critical in meeting the learning needs of all students. However, an ongoing challenge for school leaders and teachers is navigating the various instructional models and structures to ensure learning is not only rigorous and student centred but also realistic and manageable. This workshop will explore some efficient and effective practices that school leaders can use to support teachers in planning to cater for the different learning needs of their students. We will explore how these practices can be used for various task types and lesson structures.</p>	<p>Jane Hubbard and Hannah Marino</p> <p>Jane has 20 years of primary teaching experience. Her interest in primary mathematics began when she was a school leader and had the opportunity to participate in the professional learning programme Contemporary Teaching and Learning Mathematics (CTLTM). Since then, she has also had the opportunity to participate in other projects that have focused on the use of challenging tasks. She is a current PhD candidate in which her research focuses on challenging tasks in the Early Years. Jane also works part time as a learning consultant supporting leaders and teachers in strategic school wide mathematics improvement.</p> <p>Hannah Marino is currently Mathematics Leader at St John XXIII Primary School in Thomastown, Melbourne. Originally from New Zealand, Hannah has taught in Melbourne Catholic Primary Schools since 2008 and has been a mathematics leader in various schools since 2010. Hannah strives to introduce and support teachers to develop best practice in mathematics education. In doing so, she recognises the importance of on-going professional development and consequently was selected by her current school to travel to Ontario in 2019 to collaborate with the Ontario Catholic Board about best practice in mathematics education and deep learning. In 2022 Hannah started consulting for MAV. This entailed supporting primary schools to build teacher capacity in all areas of mathematics. Hannah's commitment to her mathematics leadership role led to her achieving a Masters in Mathematics Leadership in 2020.</p>

	<p>C4: Numeracy and Leadership: A transformative story of learning, leading, and growing along with our school</p> <p>The challenge of leading numeracy at a school where student outcomes and data is historically high however growth is stalled, is learning journey in itself. In this workshop Ramya will share her personal leadership journey in which she learnt about the teachers, students, mathematics and leadership. She will share how she grew as a leader and how she developed her skills to lead school-wide change beyond the classroom to the wider school community. Over the past few years, Ramya lead a team design, develop, implement, and deliver an instructional model that is deeply rooted in research-based evidence. She will share the impact of the new model has had on student outcomes and teacher confidence. "Leadership and Learning are indispensable to each other." John F. Kennedy</p>	<p>Ramya Deepak Kumar and Jennifer Bowden</p> <p>Ramya Deepak Kumar is the Numeracy Learning Specialist at Mount Waverley Primary School - She is passionate about addressing the gap between achievement and growth so that all students grow in their learning journey irrespective of where they start from. After building her own successful career as a scientist, Ramya retrained as a teacher and was quickly recognised for her talents. She took the leap into leadership to support teachers and build their practice – another of her passion. Given her scientist background, Ramya chose Maths as her vehicle to do this and together with her leadership team and staff, has been able to deliver point of need teaching for every child.</p> <p>Jennifer Bowden has worked as an Education Consultant at the Mathematical Association of Victoria (MAV) for 15 years. She enjoys inspiring teachers, maths coaches, consultants, and leaders to become more critical and creative in their teaching, empowering consultants and teachers to be better educators and provide the best learning experiences for their students. Jen coaches, mentors and guides consultants, teachers, and leaders to build teacher capacity, increase knowledge of curriculum content, and to develop better pedagogies to establish school-wide improvement. Jen's current interest is in helping teachers and leaders to improve education in a way that promotes and challenges students' thinking.</p>
	<p>C5: Effectively teaching multiplication across the school</p> <p>This session will revise the concept of multiplicative thinking and how it is used to effectively introduce the multiplication strategies. It will go deeper into the reasons why students struggle to learn the strategies and then apply them as well leaving educators with games, activities and assessment tasks that they can use in their classrooms.</p>	<p>Michael Nelson</p> <p>Michael is a Mathematics Learning Specialist who has presented at the AAMT conference in 2019 and 2021 as well as the MAV conference in 2017, 2021 and 2022. He has collaborated with Dr Paul Swan in creating activities for the classroom as well as contributing to <i>Prime Number</i> and <i>Common Denominator</i> journals.</p>
	<p>C6: Thriving mathematicians in the age of AI</p> <p>To thrive in the age of AI our learners will need to be able to do more than just follow a process or identify which formula to use. They will need opportunities to creatively apply their skills, to see fluency as a tool to build with rather than an end in itself. 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 provide a novel context for students to apply their learning. They engage and challenge 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 hands-on session will equip you to identify and embed rich, engaging and thoughtful activities into your mathematics curriculum.</p>	<p>Andrew Lorimer-Derham</p> <p>Andrew helps people enjoy maths through engaging games, creative teaching practice and innovative activities. His passion is supporting teachers to build skilled and confident mathematicians in an environment of 'intentional fun'. Andrew's greatest expertise is crafting rich mathematical activities students will happily give up their lunchtime to continue. He is the founder of Think Square and has worked with numerous maths 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. Andrew showcases his talents engaging both students and teachers as a consultant through MAV.</p>

<p>Workshop rotation 3: 1.45pm-2.45pm</p>	<p>D1: School leaders promoting coding in mathematics and STEM in the primary years</p> <p>Coordinated by MAV and MGSE, this session will involve school leaders describing how their schools are integrating coding in mathematics and STEM courses, including an in-depth discussion of how to become involved in the Victorian Coding Challenge (VCC) 2023. Focus will be on school planning, staff development, resources (e.g., for the VCC), examples of change and successful engagement of students and parents. Continuing links to the MAV Online Community will be outlined.</p>	<p>Dr Max Stephens and Danijela Draskovic</p> <p>Dr Max Stephens is a senior research fellow in mathematics education. Max's research areas focus on the emergence of algebraic thinking in the middle years, developing a construct of Teacher Capacity, and the cultural conditions needed for the successful adaptation of Lesson Study outside Japan. He has interests internationally in curriculum and assessment, notably in Japan and in China. Prior to The University of Melbourne, Max occupied senior roles with the Victorian Department of Education and at the Victorian Curriculum and Assessment Authority. He has been a reviewer of the Australian Curriculum: Mathematics for the Australian Government and has provided interpretations of international assessments in Mathematics for Australian Schools.</p> <p>Danijela is a Secondary Mathematics Education Consultant for the Mathematical Association of Victoria. At MAV Danijela is involved in many different projects. She has founded the Victorian Coding Challenge (VCC), a DET funded initiative, which has had participation from thousands of students each year since its commencement in 2020 and has been approved for another 3 year round of funding. Danijela also supports VCE students and VCE teachers by putting together the VCE Revision Program – both teacher and student versions.</p> <p>Danijela has taught Mathematics and Physics in Independent Schools in Victoria as well as in the UK, and loves being in the classroom where she feels she is truly in her element. She believes that most people can engage and have success in mathematics by approaching the subject in a holistic and meaningful way.</p>
	<p>D2: Leading improvement and change</p> <p>School leaders play a key role in facilitating the change process within schools. This session will explore the relationship between collaborative instructional leadership, teacher capacity and student engagement and achievement in mathematics. Sara will share how, through a consistent whole school approach to Mathematics Instructional Practices, student outcomes and engagement can be improved. It will identify the pillars of teacher capacity in mathematics, and how these can be a focus for collaborative Professional Learning Teams.</p>	<p>Dr Sara Gaul-McKee</p> <p>Dr Sara Gaul-McKee is a Deputy Principal at Wedge Park Primary School in Melton. She completed her Doctor of Education at the University of Melbourne, with a focus on building teacher capacity and formative assessment. Sara has held various positions in schools, including as a leading teacher of Mathematics from Prep - 9, Assistant Principal of Curriculum and Principal, and has worked as a tutor at Victoria University. She has also led the Melton Network Mathematics Community of Practice for Mathematics.</p>

	<p>D3: Collaborative planning</p> <p>It is through collaboration amongst staff where schools can lead to better student outcomes as well as improving pedagogical knowledge and content knowledge . Although, how is this achieved? One cannot simply provide teachers with resources, put them in a room together and hope that they will increase their capacity to teach and therefore have a greater impact on student learning. Schools need to provide staff with the tools, strategies, support and feedback in developing their collaborative skills.</p> <p>This workshop will explore protocols that Mathematics Leaders can evaluate and use to develop effective collaborative planning sessions with teams, PLCs and whole staff.</p>	<p>Paul Staniscia</p> <p>Paul Staniscia is currently the Deputy Head of Primary at Southern Cross Grammar in Melbourne's West. He also works as a consultant for MAV and has written various articles for their Prime Number journal. Paul is passionate about the professional learning of preservice teachers and uses his real-life experiences as a sessional academic. In 2019 he was recognised by ACEL as a New Voice in School Leadership and continues to work with ACEL through publications and as part of their Editorial Board. Having completed a Masters of Educational Leadership, he values a culture of relational trust when working with teachers in evidence-based learning and teaching, both in Australia and overseas. Paul utilises previous classroom teaching experience as well as effective leadership practices when collaborating with teachers in using data to identify student need and impact of teaching.</p>
	<p>D4: Developing productive pedagogical relationships</p> <p>Rich tasks, questioning techniques, number talks, group work, and thinking routines - These are all pedagogical techniques that have endless supporting resources and professional learning workshops for teachers to attend in order to enhance their practice. The only issue... For these strategies to work, teachers MUST first develop strong pedagogical relationships with their students! For too long, this skill has been seen almost as innate, with teachers being told they need to develop such relationships, without being told how. In this session, I will delve into some of the findings emerging from my current doctoral research study which can support teachers and school leaders in this area. You will leave this session with a better idea not only of how to build relationships with students but colleagues and people in general!</p>	<p>Thomas Moore</p> <p>Thomas Moore is a passionate educator who is driven by helping both students and teachers to enjoy the experience of working mathematically. He is currently in the final year of his PhD exploring how productive relationships are formed between Maths teachers and their students in the middle years. When he isn't studying, you will find Thomas developing resources for his Maths Education company, EngageME Mathematics, and working with teachers and school leaders across Victoria as a consultant with MAV to help both primary and secondary schools implement an inclusive and engaging mathematics curriculum for all.</p>
	<p>D5: Reporting and supporting mathematics teacher wellbeing</p> <p>Teaching continues to be a demanding profession, the pressures of which contribute to growing levels of stress, teacher burn-out, and attrition. Whilst most research attention and government initiatives tend to focus on student wellbeing, teacher wellbeing is unfortunately often overlooked. Teaching mathematics involves unique challenges, and mathematics is often a subject that triggers more anxiety and distress than any other subject that primary teachers (and students) face at school. In this workshop we will explore what wellbeing is, how to recognise and assess it, and then use the workshop to explore and come up with strategies to support teacher wellbeing, with a specific focus on mathematics education. Whilst this workshop is aimed at mathematics education the same wellbeing principles can also be applied to the teaching profession more broadly.</p>	<p>Julia Hill</p> <p>Julia Hill has a background in educational psychology with a special interest in student wellbeing specific to mathematics and science education. She is currently a lecturer in primary mathematics education for the Master of Teaching at the University of Melbourne.</p> <p>Given many students consider mathematics and science education to be irrelevant, boring, or unenjoyable, investigating student wellbeing in this space is urgently required. Her research explores student wellbeing in both mathematics and science education, particularly how values intersect with wellbeing, and also the pedagogies and experiences supporting student wellbeing in these subjects.</p>

	<p>D6: How can the 'Science of Maths' movement help guide our practice?</p> <p>The 'Science of Maths' is a relatively 'new' movement in the Maths Education world. It has gained much traction since interest in the 'Science of Reading' exploded. In this session Angela will explore how the 'Science of Math' ideas can be used to guide our instruction. We will explore the research around spaced/massed/distributed/interleaving in maths practice and the importance of ensuring we are spiralling back to critical concepts in our maths curriculum. We look at planning and instruction through the lens of how the brain learns mathematics. The session will most likely bring up more questions than answers, but Angela guarantees it will get you thinking!</p>	<p>Dr Angela Rogers</p> <p>Dr Angela Rogers is an experienced primary school teacher and Numeracy Leader. She is the editor of the Mathematical Association of Victoria's teacher journal-Prime Number. Angela is a passionate presenter who regularly facilitates Professional Development for teachers. In 2014 she completed her PhD in Mathematics Education focusing on place value. She currently mentors and provides online PD for teachers and schools through her Numeracy Teachers Academy. Angela loves connecting research and practice to support teachers and leaders. Angela has 4 children and also works to promote a love of maths at home through her social media accounts @numberdoctors.</p>
<p>Keynote 2: 2.50pm – 3.50pm</p>	<p>E: Primary mathematics leaders: Investigating diverse perceptions of the role</p> <p>This session will explore how the role of primary mathematics leadership is perceived by primary mathematics leaders and those who work with them. The session will report on research conducted via a survey with respondents from across Victoria. It will examine different aspects of the role and the attributes of a primary maths leader and how this connects to research on middle level leadership.</p>	<p>Kate Copping</p> <p>Kate Copping is a lecturer in Mathematics Education and PhD candidate at the Melbourne Graduate School of Education (MGSE). Her research involves leadership and teacher professional learning in mathematics. Kate has provided mathematics professional development for teachers through ACER, DET and within individual schools. She has taught in schools in Victoria, NSW and USA, and has also worked in teacher education for MGSE since 2008</p> <p>Keynote sponsor: EssentialAssessment <small>Assessment and Curriculum made easy</small> <small>Australian Curriculum • NSW Syllabus • Victorian Curriculum</small></p>

Day 2 - For Teachers

Friday 16 June, 2023

Sponsors



Time	Title/abstract	Presenter biography
Keynote 1: 9am-10.15am	<p>A: Assessment: The good, the bad, and the ugly</p> <p>Assessment is arguably the most important step in the teaching and learning process. Yet assessment can also be one of the most stressful, time-consuming and challenging parts of our daily work! Selecting or designing an assessment, administering it, marking, and then analysing the results, takes a great deal of time, skill, experience and knowledge. Yet there is so much more to assessment! We must also make the huge leap to translate the data into instruction that will target the needs of each student. In this presentation Dr Angela Rogers explores the importance of using quality assessment and why all assessments are not created equal. Some are good, some are bad, and some are just plain ugly! Angela presents a compelling argument for effectively supporting our students through making informed choices around the assessments we administer.</p>	<p>Dr Angela Rogers</p> <p>Dr Angela Rogers is an experienced primary school teacher and Numeracy Leader. She is the editor of the Mathematical Association of Victoria's teacher journal- Prime Number. Angela is a passionate presenter who regularly facilitates Professional Development for teachers. In 2014 she completed her PhD in Mathematics Education focusing on place value. She currently mentors and provides online PD for teachers and schools through her Numeracy Teachers Academy. Angela loves connecting research and practice to support teachers and leaders. Angela has 4 children and also works to promote a love of maths at home through her social media accounts @ numberdoctors.</p> <p>Keynote sponsor:   Education and Training</p>
Workshop rotation 1: 10.50am-11.50am	<p>B1: Thinking deeply for success in mathematics</p> <p>This session will highlight aspects of mathematical reasoning and problem solving that contribute to success in all aspects of mathematics. Reasoning is important in learning mathematics because being able to reason about new topics (that is to understand why things are true), is a key to sense making. And the feeling that mathematics makes sense is essential for success. Experience in solving problems helps students become more flexible and confident thinkers, building independence and the ability to tackle variations to standard problems. The session will focus on upper primary students. Participants will solve problems and consider student solutions. In discussion, we will identify the reasoning demands and useful problem-solving strategies for the problems, and discuss how teachers can help students develop reasoning and problem-solving skills to support all aspects of mathematics learning.</p>	<p>Emeritus Professor Kaye Stacey</p> <p>Emeritus Professor Kaye Stacey was head of mathematics education at the University of Melbourne for over 20 years. Her internationally recognised research encompasses mathematical problem solving and reasoning, mathematics curriculum including changes due to new technologies and students' understanding of mathematical concepts. She is the author and co-author of many articles, books and other resources for teachers, including the online 'smart-tests' and the Teaching and Learning about Decimals website. She is a member of the Board of the Victorian Curriculum and Assessment Authority.</p>

	<p>B2: Shoot and Score</p> <p>In this workshop, teachers will explore resources that leverage sport to engage students (working from levels 3 -7) in fun and memorable STEM learning experiences (emphasis on the M). Teachers will experiment with a range of basketball and football STEM challenges and games to test how sport and play can strengthen student engagement in the classroom. All resources are freely available to use in your school and are guaranteed to get your students moving.</p>	<p>Nick Devereux and Sophie Stewart</p> <p>Nick Devereux is an Educator Engagement Coordinator at The Huddle. With a wealth of experience in various educational settings, Nick is passionate about using sport to engage students and improve learning outcomes. At The Huddle, Nick works closely with educators to develop innovative, sport-themed education programs that enrich classroom learning. Additionally, he serves as a football coach with North Melbourne's AFLW and VFLW teams, where he helps athletes learn and grow both on and off the field. Through his work at the intersection of classrooms and elite sport, Nick has gained a unique perspective on the power of sport and how it can be leveraged to enrich learning.</p> <p>Sophie is an education facilitator with a Bachelor of Education (Honors) in Primary Education and a lifelong passion for sport. After completing her degree, Sophie worked as a primary school teacher for four years at schools throughout metropolitan Melbourne and the Latrobe Valley. Sophie is dedicated to creating engaging and effective learning experiences and believes that sport and play are powerful tools that can be leveraged to create powerful outcomes for students of all ages.</p>
	<p>B3: 24 square counters</p> <p>Square counters are an excellent hands-on classroom resource that can be used to explore a variety of concepts at all Primary School levels. In this workshop we will investigate how manipulations with 24 square counters can provide rich learning opportunities in many areas of the Mathematics Curriculum. Within each exploration we will consider strategies to promote rich dialogue and how each task can be differentiated to enhance the learning.</p>	<p>Catherine Epstein Rogers</p> <p>Cathy works as a consultant at MAV and is currently the Numeracy leader at St Paul's Bentleigh and St Peter's East Bentleigh. Cathy also runs her own Mathematics consultancy business. Cathy is passionate about teaching our students to be divergent thinkers, encouraging them to solve problems by making connections. In the past 15 years she has acquired a wealth of tried and tested rich tasks that extend across the strands, are easily differentiated and promote an environment of keen mathematicians.</p>
	<p>B4: 'Half (or twice) as big' Exploring geometric meaning to extend creative thinking</p> <p>"This front garden is twice as big as the one in the back" and "Holly's painting is half as big as Finn's" are phrases that illustrate two very common comparatives related to size in everyday language. Indeed, the 2:1 and 1:2 relationships are in widespread use as we double or halve measurable quantities such as cooking ingredients, paint, fencing and monetary transactions to name but a few. The geometric activities we will be looking at today can be performed successfully by teachers and students with the usual array of tools (depending on required precision): pencil, ruler, compass, plain or grid paper, templates, protractor, set square. Using GeoGebra as a follow-up exploration tool can assist teachers to create accurate diagrams which can be edited to support a "what if you did this?" atmosphere in the classroom. Objects can be made dynamic, retaining their intended mathematical properties. As it is freely available, students and families can access teacher-devised or web-supported files or can pursue their own investigations at home.</p>	<p>Roger Wander</p> <p>Roger Wander taught secondary school mathematics in VIC, SA and the United States for over 30 years before joining MGSE in teaching and research in 2008. He was a Clinical Specialist in the Master of Teaching (both Primary and Secondary programs), and lectured in the STEM stream of School Experience as Breadth. His most recent involvement with MGSE was from 2019-2021 as an online coach for South Australian early years teachers who were completing a numeracy professional development program. He has also been a consultant for Catholic Education Melbourne in the area of whole-school numeracy for secondary schools and the use of computer algebra systems (CAS) and other technologies in mathematics teaching. Currently he is an Honorary Academic at MGSE. He has designed and delivered professional development workshops for numeracy and mathematics teachers in primary and secondary schools, with a special interest in mathematical literacy, formative assessment in mathematics education and the use of CAS and dynamic geometry technology. Roger's research interests are in the areas of CAS, whole-school numeracy and teachers' statistical literacy.</p>

B5: Student goals based on the mathematics assessment interview (MOI)

Given there is a wide variety of assessments used in mathematics it can be challenging for leaders and teachers to know how to utilise assessments in order to address the needs of the class as well as the individual needs of students. This presentation will take you through the process of how St John XXIII primary school have utilised the 'counting' component of the mathematics assessment interview (MOI) to formulate counting goals for individual students. We will explain how the counting goals are introduced to the students and the emphasis placed on these within the structure of a mathematics lesson. Furthermore, we will address how the counting goals compliment a problem solving approach to the teaching and learning of mathematics.

Hannah Martin and Jane Hubbard

Hannah Marino is currently the Mathematics Leader at St John XXIII Primary School in Thomastown, Melbourne. Originally from New Zealand, Hannah has taught in Melbourne Catholic Primary Schools since 2008 and has been a mathematics leader in various schools since 2010. Hannah worked as a mathematics consultant for MACS in 2018, supporting schools in the Northern Region. Hannah strives to introduce and support teachers to develop best practice in mathematics education. In doing so, she recognises the importance of on-going professional development and consequently was selected by her current school to travel to Ontario in 2019 to collaborate with the Ontario Catholic Board about best practice in mathematics education and deep learning. In 2022 Hannah started consulting for MAV. This entailed supporting primary schools to build teacher capacity in all areas of mathematics. Hannah's commitment to her mathematics leadership role led to her achieving a Masters in Mathematics Leadership in 2020.

Jane has 20 years of primary teaching experience. Her interest in primary mathematics began when she was a school leader and had the opportunity to participate in the professional learning programme Contemporary Teaching and Learning Mathematics (CTLM) through ACU. Since then, she has also had the opportunity to participate in other projects that have focused on the use of challenging tasks. She is a current PhD candidate in which her research focuses on challenging tasks in the Early Years. Jane also works part time as a learning consultant supporting leaders and teachers in strategic school wide mathematics improvement.

B6: Exploring the Anticipate Phase of the Launch, Explore, Summarise Instructional model

This session draws on some of the findings from the EMC3 (Exploring Mathematical consequences of Connected, Cumulative and Challenging task) project, by exploring the inclusion of the 'Anticipate' phase to the 'Launch, Explore, Summarise' instructional model. The 'Anticipate' phase of this instructional model, aims to support teachers during the collaborative planning of challenging tasks. Through this presentation, attendees will gain an understanding of how to best plan for the implementation of challenging tasks in their everyday classroom practice.

Di Liddell

Di is an Education consultant for the Mathematical Association of Victoria where her role includes working with schools and other organisations on various ongoing professional development requirements. She is an experienced teacher who has experience across State, Catholic and Independent schools both nationally and internationally. Dianne completed a Bachelor of Teaching/ Applied Science from Deakin University majoring in Biology and Environmental Science. She then completed a Graduate Diploma, specialising in Literacy and Numeracy Instruction. Dianne is currently completing a Masters in Educational Research, through The University of Melbourne, where her project seeks to explore how a pedagogy of listening illuminates student voice.

<p>Workshop Rotation 2: 11.55pm - 12.55pm</p>	<p>C1: Assessment practices to support student progression</p> <p>This session will explore a variety of formative and summative assessments which can be used to understand the learner's progression. It will go through the process of:</p> <ul style="list-style-type: none"> • ensuring assessments are created with the purpose of identifying student learning needs and understanding • administering an assessment • using an assessment to inform planning and teaching. <p>This session will share a variety of assessments which can be used to identify student understanding, progression and learning needs.</p>	<p>Dr Sara Gaul-McKee</p> <p>Dr Sara Gaul-McKee is a Deputy Principal at Wedge Park Primary School in Melton. She completed her Doctor of Education at the University of Melbourne, with a focus on building teacher capacity and formative assessment. Sara has held various positions in schools, including as a leading teacher of Mathematics from Prep - 9, Assistant Principal of Curriculum and Principal, and has worked as a tutor at Victoria University. She has also led the Melton Network Mathematics Community of Practice for Mathematics.</p>
	<p>C2: Promoting coding and mathematics and STEM in the primary years</p> <p>Coordinated by MAV and MGSE, this session will showcase teachers describing how their schools are integrating coding in mathematics and STEM courses, including an in-depth discussion of how to become involved in the Victorian Coding Challenge (VCC) 2023. Focus will be on getting started, resources (e.g., for the VCC), examples of change, and engagement of students and parents. Continuing links to the MAV Online Community will be outlined.</p>	<p>Dr Max Stephens and Danijela Draskovic</p> <p>Dr Max Stephens is a senior research fellow in mathematics education. Max's research areas focus on the emergence of algebraic thinking in the middle years, developing a construct of Teacher Capacity, and the cultural conditions needed for the successful adaptation of Lesson Study outside Japan. He has interests internationally in curriculum and assessment, notably in Japan and in China. Prior to The University of Melbourne, Max occupied senior roles with the Victorian Department of Education and at the Victorian Curriculum and Assessment Authority. He has been a reviewer of the Australian Curriculum: Mathematics for the Australian Government and has provided interpretations of international assessments in Mathematics for Australian Schools.</p> <p>Danijela is a Secondary Mathematics Education Consultant for the Mathematical Association of Victoria. At MAV Danijela is involved in many different projects. She has founded the Victorian Coding Challenge (VCC), a DET funded initiative, which has had participation from thousands of students each year since its commencement in 2020 and has been approved for another 3 year round of funding. Danijela also supports VCE students and VCE teachers by putting together the VCE Revision Program – both teacher and student versions. Danijela has taught Mathematics and Physics in Independent Schools in Victoria as well as in the UK, and loves being in the classroom where she feels she is truly in her element. She believes that most people can engage and have success in mathematics by approaching the subject in a holistic and meaningful way.</p>

	<p>C3: Identifying and addressing common fraction misconceptions</p> <p>The topic of fractions appears to be one of the most challenging to teach and learn. Many difficulties arise when students attempt to solve fraction tasks using the same strategies they used to successfully solve whole number tasks. Fractions can be represented in different ways e.g., as part of a length or an area, part of a quantity or as a position on a number line. Students can get correct answers using 'faulty' fractional thinking using their whole number strategies thus misconceptions may not be identified. Teachers need to be aware of the common fraction misconceptions, so these can be avoided or, if already in place, they can be addressed. This session will describe common fraction misconceptions and discuss possible strategies to ensure students develop understanding so that they can represent fractions in different ways.</p>	<p>Dr Catherine Pearn</p> <p>Catherine Pearn is a Senior Lecturer in Mathematics Education at The University of Melbourne. She has taught in the Master of Teaching programs across all levels - Early Childhood, Primary and Secondary. Catherine is also a Senior Research Fellow in the Assessment Design Specialist team in the Assessment and Reporting Division at ACER. She has written assessment items for students from early childhood to upper secondary levels for state, national and international tests. Catherine provides mathematics professional development programs for Victorian, Australian and international primary and secondary mathematics teachers and leaders. Catherine is particularly interested in the identification and assistance for students mathematically at risk of not meeting national minimum or not achieving their mathematical potential. Catherine's PhD investigated the links between fractional competence and algebraic reasoning of middle-years students.</p>
	<p>C4: Differentiation with open-ended tasks</p> <p>One of the greatest challenges confronting teachers is how to best cater for the wide range of student performance in mathematics. In this workshop, we explore how learning can be enhanced while also increasing student engagement, simply by changing the type of questions that teachers pose. We will investigate the benefits of using open-ended tasks by taking participants through examples that have been successfully implemented in classrooms. We also outline some simple design principles that will allow you to create your own open-ended tasks across all of the strands of mathematics and for all year levels.</p>	<p>Michael Minas</p> <p>Michael Minas is the director of Love Maths an educational consulting business based in Australia. He has worked in education for over 20 years and his areas of interest include problem solving and student engagement. Michael's YouTube channel features 100 videos of engaging maths games and has attracted over half a million views from educators from across the globe. In 2018, Michael's ability to shape learning was recognised when he won a CHOOSEMATHS Teaching Excellence Award. He presents at conferences around Australia and provides consultancy services to a range of organisations, including the Mathematical Association of Victoria. Michael was the editor of Prime Number from 2019 to 2021 and is a contributing author for the Maths300 website. He is also the author of <i>Understanding and Teaching Primary Mathematics in Australia</i> and <i>The Curse: The Colourful & Chaotic History of the LA Clippers</i>.</p>
	<p>C5: Teach multiplication strategies with multiplicative thinking</p> <p>This session will revise the concept of multiplicative thinking and how it is used to effectively introduce the multiplication strategies. It will go deeper into the reasons why students struggle to learn the strategies and then apply them as well leaving educators with games, activities and assessment tasks that they can use in their classrooms.</p>	<p>Michael Nelson</p> <p>Michael is a Mathematics Learning Specialist who has presented at the AAMT conference in 2019 and 2021 as well as the MAV conference in 2017, 2021 and 2022. He has collaborated with Dr Paul Swan in creating activities for the classroom as well as contributing to MAV <i>Prime Number</i> and <i>Common Denominator</i> journals.</p>

	<p>C6: Challenge connects students to the world</p> <p>Throughout this session you will dive into an effective teaching and learning model where students will be encouraged to share their knowledge, elaborate on each other's learning and thinking and provide multiple ways of accessing a task. This session will explore teacher questioning, appropriate wait time, modelling of tasks and connections to the proficiencies. Using Peter Sullivan's 'Launch, Explore, Reflect' process, which continuously aims to allow students the time to justify, extend and relaunch their thinking, will allow for deeper content knowledge, application of skills to real-life problems and in turn, develop the learning culture in the classroom to one that is safe, diverse and challenging.</p>	<p>Renee Ladner</p> <p>Renee is currently a classroom teacher in an inner north suburb of Melbourne and has been a Numeracy Leader in primary schools for ten years. Having completed a Masters in Educational Leadership, she believes in developing the growth mindset of students and teachers. This is achieved by immersing them in tasks that allow for multiple entry points and scaffolding learning to capture all abilities within the classroom. Applying contemporary classroom teaching experience as well as effective leadership practices from over a decade of experience allows her to collaborate and connect with teachers and students authentically. Renee has recently started consulting for MAV and is her priority that students and teachers have a strong sense of confidence in their mathematical content knowledge and that they are aware of their next stage of learning.</p>
<p>Workshop Rotation 3: 1.45pm -2.45pm</p>	<p>D1: Using everyday technologies to teach mathematics</p> <p>Technology is an integral part of our everyday lives. We use our phones for communications, social media, planning our daily commute, banking, checking the weather, monitoring our daily exercise, and so much more! The authentic use of technology in the classroom when teaching mathematics can increase student engagement by providing relevance for the students. Additionally, the mathematics of today looks vastly different to that of other generations. In our smartphones we carry around not just a calculator, but a host of purpose specific mathematical tools. This session will consider the range of everyday technologies, apps, and software that are readily available for teachers to use in the classroom and how to use them pedagogically. The framing of the technology and the applicability to the mathematics is essential as the technology supports the learning of key mathematics knowledge and skills.</p>	<p>Justine Sakurai</p> <p>Justine has over two decades of experience as a teacher of mathematics and numeracy. She is currently a lecturer in initial teacher education at the University of Melbourne and Deakin University. She conducts teacher professional learning programs in numeracy and mathematics. Justine is currently editor of the mathematics teacher journal <i>Vinculum</i> for the Mathematical Association of Victoria. Justine has worked with state curriculum and examination boards to investigate numeracy theory and practices. In a leadership capacity, she has contributed to curriculum development and writing, teacher advice documents, benchmarking and high stakes assessment.</p>
	<p>D2: Developing relational thinking rather than focusing on rules and procedures</p> <p>Mathematics education researchers have highlighted the importance of students developing relational thinking rather than relying on calculations to solve mathematical tasks. Relational thinking involves students recognizing, and understanding the relationship between given quantities. Students need to understand the properties of the operations (e.g., commutative, associative and distributive laws) and recognise when these laws can be used (e.g., addition and multiplication are commutative but subtraction and division are not). Some young children have started to use relational thinking even before formal schooling when they notice that five fingers can be shown as 'four fingers and one more finger' or 'three fingers and two more fingers.' In this session, the focus will be on materials and tasks that teachers can use to encourage students to use relational thinking rather than carry out calculations using rules and procedures.</p>	<p>Dr Catherine Pearn</p> <p>Catherine Pearn is a Senior Lecturer in mathematics education at The University of Melbourne. She has taught in the Master of Teaching programs across all levels - Early Childhood, Primary and Secondary. Catherine is also a Senior Research Fellow in the Assessment Design Specialist team in the Assessment and Reporting Division at ACER. She has written assessment items for students from early childhood to upper secondary levels for state, national and international tests. Catherine provides mathematics professional development programs for Victorian, Australian and international primary and secondary mathematics teachers and leaders. Catherine is particularly interested in the identification and assistance for students mathematically at risk of not meeting national minimum or not achieving their mathematical potential. Catherine's PhD investigated the links between fractional competence and algebraic reasoning of middle-years students.</p>

<p>D3: Problem Solving - One piece of a much larger puzzle</p> <p>Successful learning and teaching of mathematics in much more complex than the three content strands suggest. It's about becoming mathematically proficient, making sense of mathematics, and figuring out and solving problems by working hard on them. Therefore, successful learning and teaching of mathematics should be viewed as a web, rather than a continuum. A web where content strands are interwoven throughout the proficiency strands and a learner can move through and navigate around content and proficiency. However, how do we develop and embed mathematical proficiency into our everyday learning and teaching of mathematics? And in what ways can we accurately assess mathematical proficiency in order to track and identify progress? This workshop will value an instructional model in teaching Problem Solving, explore ways to assess Mathematical Proficiency through whole school moderation practices and reporting to the Stands through self, peer and teacher feedback.</p>	<p>Paul Staniscia</p> <p>Paul Staniscia is currently the Deputy Head of Primary at Southern Cross Grammar in Melbourne's West. He also works as a consultant for the Mathematical Association of Victoria and has written various articles for their Prime Number journal. Paul is passionate about the professional learning of preservice teachers and uses his real life experiences as a sessional academic. In 2019 he was recognised by ACEL as a New Voice in School Leadership and continues to work with ACEL through publications and as part of their Editorial Board. Having completed a Masters of Educational Leadership, he values a culture of relational trust when working with teachers in evidence-based learning and teaching, both in Australia and overseas. Paul utilises previous classroom teaching experience as well as effective leadership practices when collaborating with teachers in using data to identify student need and impact of teaching.</p>
<p>D4: Play-based mathematics learning – Pedagogy and practice</p> <p>Mathematics learning in the early years can be challenging to identify, as children explore many mathematical concepts – often all at once – during play. We know that children's learning is dynamic and "cognitive, linguistic, physical, social, emotional, personal, spiritual and creative aspects of learning are all intricately interwoven and interrelated" DEEWR, 2022, p. 8. We also know that early experiences with mathematics can influence a child's educational journey and dispositions towards learning. This session is for teachers who would like insights into how assessment and evaluation for learning, development and wellbeing promote children's ongoing mathematical knowledge. We will explore practical insights into how to support and extend children's early mathematical explorations in play-based environments.</p>	<p>Dr Rachel Pollitt and Amanda Merrifield</p> <p>Dr Rachel Pollitt is a Research Fellow in the Research in Effective Education in Early Childhood (REEaCh) Centre, and the Educational and Developmental Gains in the Early Childhood (EDGE) Study at the University of Melbourne. This position includes supporting the delivery of professional learning in the 3a Abecedarian Approach Australia, and CLASS Observation Training as well as data collection for the EDGE Study. Rachel completed her PhD in the Graduate School of Education, University of Melbourne (2018). As part of her research, she actively worked with early childhood professionals across Melbourne to explore and facilitate play-based approaches to teaching and learning mathematics in early years education. Her doctorate examined how to embed play-based mathematics assessment strategies in ECEC. Her research publications and conference presentations provide practical ways to promote educators' practice, pedagogy and critical thinking skills, highlighting links between research outcomes and a range of contexts for professional learning. She has a specific interest in cognitive psychology, child wellbeing and development in early years education and is undertaking a Graduate Diploma of Psychology in the School of Psychological Sciences, University of Melbourne.</p>

	<p>D5: The Transition from Mathematical Modelling to STEM: Lighthouse Activity</p> <p>More than ever before, students are expected to learn and be able to transfer their acquired knowledge and skills to a whole range of situations which they can expect to encounter in their respective lives. Mathematical modelling and STEM education are two terms which are often associated with these pedagogical approaches and perspectives.</p> <p>Mathematical modelling is intertwined with many disciplines from science to social sciences, and is a cyclical process that requires making choices, assumptions, and decision-making. As such, mathematical modelling is generally used to explain real-world situations and/or make predictions about the future behaviour of a real-world system. Yet, real-world situations are interdisciplinary and therefore closely related to STEM. In this workshop, the Lighthouse activity will be introduced, as an example of demonstrating the application of mathematical modelling in STEM education. Participants will see how interdisciplinary associations is richly embedded in mathematical modelling.</p>	<p>Associate Professor Veysel Akçakın and Professor Wee Tiong Seah</p> <p>Wee Tiong Seah is a Professor in Mathematics Education at the Melbourne Graduate School of Education, The University of Melbourne. Wee Tiong is a member of the National Expert Group for the 'Literacy and Numeracy Test for Initial Education' [LANTITE], and had been part of the federal government's Expert Advisory and Research Group. Wee Tiong has delivered workshops for principals and school leaders on behalf of the Victorian Department of Education, and some 30 research keynote addresses around the world. Wee Tiong's current research interests include the harnessing of cognitive appraisal constructs (such as values), the fostering of mathematical wellbeing, development of values alignment strategies, as well as international comparative studies.</p>
<p>Keynote 2: 2.50pm – 3.50pm</p>	<p>E1: Teachers Talking about their Classrooms: Learning from the Professional Lexicons of Mathematics Teachers</p> <p>Teachers acquire a professional vocabulary related to the instructional orchestration of activities that enhance student understanding. The International Classroom Lexicon Project sought to document the lexicons available to communities of middle school mathematics teachers from around the world. The lexicons, akin to a cultural artefact of its mathematics community, support the provision of learning opportunities for novices and the promotion of reflective practice amongst teachers. In this keynote Carmel will share her analyses of the professional language in current use by teachers in Australia, and report on the work that has taken place in the move towards an international lexicon.</p>	<p>Carmel Mesiti</p> <p>Carmel Mesiti is Lecturer in Mathematics Education at the University of Melbourne. She has been teaching in the mathematics primary, secondary and masters education programs at the Melbourne Graduate School of Education. Carmel has worked as a research fellow on several ARC-funded international research projects at the International Centre for Classroom Research. She is currently Project Manager of The International Classroom Lexicon Project involving ten research teams internationally. Carmel's research has centred on exploring, through international video-based research, the nature of teaching and learning in mathematics classrooms, as well as the differences in pedagogical lexicons of education communities worldwide. In 2017 she was awarded the MGSE Research Leadership Excellence Award in recognition of outstanding contribution to a program of internationally significant research.</p> <p>Keynote sponsor: firefly EDUCATION</p>



A single teaching strategy will not work for all mathematics problems teaching complex mathematics skills might require different instructional strategies than those used to teach basic mathematics skills.... teachers need a diverse set of tools to teach the breadth of their mathematics curriculum and to help students. (OECD, 2016)

2023 Primary Mathematics Education Conference

Dates

Thursday 15 June 2023

For leaders

Friday 16 June 2023

For teachers and educators

Venue

Melbourne Graduate School of Education,
University of Melbourne

Time

9am–3.50pm, followed by happy hour.

Contact

For information about bookings email Jacqui Diamond,
jdiamond@mav.vic.edu.au.

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