THE MATHEMATICAL ASSOCIATION OF VICTORIA

THE UNIVERSITY OF MELBOURNE

2024 Melbourne Mathematics Conference

Join us for either or both days

The Mathematical Association of Victoria (MAV) in collaboration with The University of Melbourne's Faculty of Education present a conference focusing on transformations: an opportunity to reflect upon and redefine our practice.

TRANSFORMATIONS:
An opportunity to reflect upon and redefine our practice.

Embracing reflective practice stands as the cornerstone of implementing effective teaching pedagogies. Reflection serves as a pivotal tool that empowers educators to continuously refine and elevate their teaching approaches by providing a platform to analyse, assess, and identify areas for future professional development. However, engaging in purposeful reflection can often prove challenging amidst the dynamic and ever-evolving landscape of school education.

The recent release of Victorian Curriculum Mathematics V2.0 presents a timely opportunity for us to pause, reflect, and evaluate our teaching methodologies, allowing us to take stock of our current practices and consider opportunities to redefine our practice. Together, let us engage in this introspective journey, allowing it to ignite a passion for continual improvement and innovation in our educational endeavours.

Day 1: Leadership in mathematics education (F-12)

Thursday 13 June, 2024

For current and emerging mathematics and numeracy leaders, school leaders and system leaders.

Focus includes:

- exploring the effectiveness of reflection as a tool for educators to continuously refine their teaching approaches
- understand the key changes to the Victorian Curriculum Mathematics V2.0
- leading improvement and change to develop teacher capability and confidence
- developing a mathematics leader

Day 2: Primary mathematics teaching and learning (F-6)

Friday 14 June, 2024

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

Focus includes:

- exploring the effectiveness of reflection as a tool for educators to continuously refine their teaching approaches
- understand the key changes to the Victorian Curriculum Mathematics V2.0
- using formative and summative assessment to understand the learner's progression
- developing as a professional educator

https://www.mav.vic.edu.au/Conference/Melbourne-Mathematics-Conference

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Day 1: Leadership in mathematics education (F-12)
Thursday 13 June, 2024

Come and join us as we delve into the realm of mathematics leadership.
Our sessions offer practical guidance on how to initiate and lead change within your school environment.

Session	Presenters	Title	Room
Registration 8.30	Ground level, Kwong Lee Dow Building, 234 Queensberry St, Faculty of Education, The University of Melbourne		
Welcome and Keynote 1 9am–10.15am	Kaye Stacey	A: What mathematics should we teach?	Q230
Break: 10.15am–10.45am			
Workshop rotation 1 10.50am–11.50am	Kate Copping	B1: From managing to leading: a mathematics leadership continuum	Q217
	Jennifer Sze	B2: How might I prepare my Year 6 students for secondary maths?	Q416
	Justine Sakurai	B3: Embedding numeracy across the curriculum - leadership considerations	Q417
	Michael MacNeill	B4: Reflections on developing the Victorian Curriculum Mathematics V2.0	Q419
	Kerryn Sandford	B5: Reflecting on context to improve leadership practice	Q420
	Ange Rogers	B6: Developing a whole school approach to fluency: the why and what	Q421
Workshop rotation 2 11.55am–12.55pm	Sara Gaul-McKee	C1: Reflecting on our practice as leaders	Q217
	Gaye Williams	C2: Interrogating mathematics education professional learning models	Q416
	Leonie Anstey	C3: Building a mathematics education culture of learning	Q419
	Ellen Corovic & Di Liddell	C4: A dynamic approach to integrating the Mathematics Curriculum V2.0	Q420
	Nikki D'Antonio and Taryn Vole	C5: Leading change in mathematics, one step at a time	Q421
	Peter Fox	C6: Elevating results, fostering participation, enrichment vs acceleration	Q508
	Amanda Reed	C7: Leading initiatives in schools: strategies for effective implementation	Q417
Lunch and networking: 12.55pm–1.45pm			
Workshop rotation 3 1.45pm–2.45pm	Pauline Thompson	D1: Supporting middle leaders to build their career	Q217
	Cath Pearn	D2: Providing assistance for students described as 'needing additional support'	Q416
	Linda Shardlow	D3: Reimaging the faculty meeting	Q417
	James Dann	D4: Structured reflective practice in secondary school mathematics teaching	Q419
	Jess Kurzman	D5: Developing a whole school vision and approach for the teaching and learning of mathematics	Q420
	Rachael Gore	D6: Moving mathematics: change management strategies for implementing whole school pedagogical models and curriculum updates	Q421
Keynote 2 2.50pm–3.50pm	Penny Addison	E1: Guiding leaders to catalyse change in numeracy and mathematics outcomes *Keynote sponsor:* VICTORIA State Government | Department of Education	Q230
F: Happy hour: 3.50pm – 4.30pm Join us for a chat, to network and debrief.			

What leaders said about the conference.....

'The networking at the conference helped me connect with fellow educators and leaders, whose insights and collaboration are proving invaluable for driving positive change in mathematics education. It sparked ideas and a collaborative vibe that I'm excited to bring back to our school to further our approach to mathematics education.

Register now
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Day 2: Primary mathematics teaching and learning
Friday 14 June, 2024

Reflective practice is crucial for effective teaching, but how does it work in the classroom?
What obstacles do educators encounter when trying to reflect purposefully amid the changing landscape of education?
Additionally, how does the revised Victorian Curriculum Mathematics V2.0 offer teachers a chance to assess and possibly change their teaching methods? Join us as we delve into these questions and more, igniting a passion for continuous improvement and innovation in mathematics education.

Session	Presenters	Title	Room
Registration 8.30	Ground level, Kwong Lee Dow Building, 234 Queensberry St, Faculty of Education, The University of Melbourne		
Welcome and Keynote 1 9am–10.15am	Julia Hill and Wee Tiong Seah	A: A strength-based approach to mathematics and numeracy education: the role of mathematical wellbeing.	Q230
Break: 10.15am–10.45am			
Workshop rotation 1 10.50am–11.50am	Carmel Mesiti and Kate Copping	B1: Shapes and their properties: transforming the teaching of shape with examples from our world	Q217
	Sandra Ting and Wee Tiong Seah	B2: What do we value to attain professional wellbeing? Let's bid to find out!	Q416
	Sara Gaul-McKee	B3: Reflective practice and formative assessment	Q417
	Brooke Brennan and Daniela Insolia	B4: Using Daily Reviews in the classroom - a practical session for classroom teachers who know the why but want to practice the how.	Q419
	Cathy Epstein-Rodgers	B5: Hands on!! Embedding the proficiencies in rich Investigations	Q420
	Taryn Volpe and Nikki D'Antonio	B6: Escape room challenge – exploring student mindsets and learning dispositions	Q421
Workshop rotation 2 11.55am–12.55pm	Cath Pearn	C1: Newman's prompts: identifying difficulties with worded problems	Q217
	Kristen Hebden	C2: Scratch beyond the surface - embedding algorithmic and computational thinking in your teaching	Q416
	Antje Leigh-Lancaster	C3: Visualising decimal place value to build understanding	Q417
	Elise Copsey	C4: Mathematics versus numeracy: empowering students to become numerate citizens of the world.	Q419
	Monica Waterworth	C5: Creating mathematical mindsets	Q420
	Renee Ladner	C6: Launch, Explore, Summarise – but how?	Q421
Lunch and networking: 12.55pm–1.45pm			
Workshop rotation 3 1.45pm–2.45pm	Gaye Williams	D1: Cycles of teacher talk, trial and error, and reflection in exploring ways group composition can influence students' mathematical problem solving	Q217
	Justine Sakurai	D2: Enhancing numeracy practices in the classroom: a social-practice approach for maths educators	Q416
	Aylie Davidson	D3: Bringing tasks to life: tips for effective planning in mathematics	Q417
	Leonie Anstey	D4: Questioning and dialogue utilising Victorian Curriculum V2.0?	Q419
	Nilushi Minoli Dediwalage	D5: Digital manipulatives in mathematics	Q420
	Max Stephens and Danijela Draskovic	D6: Using the Victorian Coding Challenge to enhance mathematics teaching in Years 5 and 6	Q421
Keynote 2 2.50pm–3.50pm	Andrew Lorimer-Derham	E1: Maths games and happy hour! Happy hour is embedded into this session. Join us for a chat, to network and debrief. *Keynote sponsor:* EssentialAssessment™ *Assessment and Curriculum made easy*	Q230

Register now
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Day 1: Leadership in mathematics education (F-12)
Thursday 13 June, 2024

Time	Title/abstract	Presenter biography
Welcome and Keynote 1: 9am-10.15am	**A: What mathematics should we teach?** Recently, the Australian Curriculum: Mathematics, the Victorian F -10 curriculum and VCE subjects have all been revised. Why? A main goal for regular revision is to ensure that mathematics is preparing students as best as possible for their future. In this session we will examine and discuss the underlying trends over several decades in the content that is specified for mathematics, and also changes in the mathematical demands predicted for citizens of the future. Specific issues include changing goals for schooling, changes in the technology used for mathematics and what might be next, new trends such as computational thinking, the always elusive goals of problem solving and modelling, and the balance between mathematics for its own sake and mathematics for practical purposes. The session aims to provoke thought and debate about why we teach the content we do.	**Emertius Professor Kaye Stacey** Kaye Stacey is Emeritus Professor of Mathematics Education at the University of Melbourne. Her work at the university included teacher education and research into students' mathematical thinking, technology for mathematics and problem solving and reasoning. She is an author of many research papers, and many articles and books and several websites for mathematics teachers. Her PhD research was in number theory, so she is keen to share a love of mathematics for its own sake, but she appreciates that most people want and need mathematics for its usefulness. She has had a long standing in mathematics curriculum, including as a recent board member of the VCAA. With colleagues Hugh Burkhardt and Daniel Pead, Kaye has recently published a book *The Teaching and Learning of Mathematical Literacy: Making Mathematics Useful to Everyone.*
Workshop rotation 1: 10.50am-11.50am	**B1: From managing to leading: a mathematics leadership continuum** Do you feel like you're managing your team, rather than leading? This session will explore the role of a mathematics leader and where their responsibilities lie on a continuum from managing to leading mathematics. To support the development of your mathematics leadership and the transition from managing to leading, you will have the opportunity to reflect on your own role. You will consider where you are positioned on the continuum, how this will impact your work, and set goals for your professional growth.	**Kate Copping** Kate is a Graduate Researcher and Lecturer in Mathematics Education at The University of Melbourne. Kate's research explores the nature of primary mathematics leadership; how it is conceptualised, experienced, and enacted within schools. This qualitative research positions primary mathematics leaders as middle leaders. The research aims to develop a stronger understanding of the role of primary mathematics leaders and inform school policy and decision making. Kate also researches the teaching and learning of mathematics in the primary education sector to support the development of educators in building student engagement and understanding in mathematics.
	B2: How might I prepare my Year 6 students for secondary maths? This presentation will examine a mini-practice inquiry I taught my Year 7 maths class. Throughout the 8 lessons, I have followed the Multisensory Maths Lesson Plans and used manipulatives throughout each lesson. In addressing the students' learning diversity as all students had learning difficulties such dyslexia, dyscalculia, ADHD and other developmental language disorders. The basis of my own teaching approach with students with special learning needs would be to focus on the mastery of number sense. These include arithmetic and using a variety of manipulatives. Once a numeral concept has been understood at the concrete level, then, I will begin to lead the students towards abstract. That is, the students would need to build, draw, and write. Abstract always comes last.	**Dr Jennifer Sze** Jen is a Lecturer in Learning Intervention at the Faculty of Education at the University of Melbourne. She has taught in primary, secondary and tertiary settings. Jen has a deep passion for special education, especially in helping students with learning diversities in dyslexia and dyscalculia. She is an active member of the Australian Dyslexia Association and Dyscalculia Association United Kingdom. In her PhD research, she focused on boys' writing. Going forward, Jen wishes to explore on how girls learn to read and write, in addition to STEM subjects. She wants to empower girls to engage in STEM subjects more effectively. Jen has also been part of the Teaching Excellence Program with the Victorian Academy of Teaching specialising in Maths. She was the 2023 recipient of the ACEL New Voice and NextGen Scholarships.

	B3: Embedding numeracy across the curriculum - leadership considerations Improving numeracy outcomes is a key challenge for leaders in schools and is found in schools' annual implementation and improvement plans. The presentation delves into practical strategies for leaders to embed numeracy across disciplines, promoting an engaging and meaningful learning experience. Defining numeracy and understanding the numeracy models can assist leaders in planning numeracy programs. This session considers how the numeracy models can support pedagogical and content practices to embed numeracy across the curriculum. Focused on fostering a holistic understanding of numeracy as a social practice, the approach emphasises real-world applications, diverse learning contexts, and the development of mathematical dispositions. By intertwining these elements seamlessly within various subjects, students can grasp mathematical concepts more effectively.	**Justine Sakurai** Justine Sakurai is the project lead at the University of Melbourne spearheading and teaching in two major programs for the Victorian Academy of Teaching and Leadership on numeracy improvement. Justine is undertaking her PhD studies at the Faculty of Education at the University of Melbourne. She has well over two decades of experience as a teacher of mathematics and numeracy in Victorian secondary schools, and is currently lecturing in pre-service teacher education. 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, benchmarking, quality assurance, and assessment. Justine is the editor for *Vinculum*, the secondary maths teachers' journal for MAV.
	B4: Reflections on developing the Victorian Curriculum Mathematics V2.0 The development of the Victorian Curriculum version 2.0 for Mathematics was a process that necessitated reflection. The past is for reference, not residence, became a guiding principle. In this workshop, I will discuss the following ideas and how they can inform the implementation of the curriculum: • The process of reflection, vulnerability and accepting the image • The process of revision for Mathematics v 2.0 (Adopt and adapt, reference panel involvement and stakeholder engagement) • The process of evolution, driving the adaptions of the AC9 for the Victorian jurisdiction to ensure VEYLDF and VCE compatibility, while retaining a continuum of learning and measurable achievement • Mathematical processes and benefits of engaging students through the processes • How reflection on current contextual practice can inform familiarisation • VCAA familiarisation support material and the Digital Assessment Library Attendee will consider these points and persuasive perspectives to utilise as schools plan for what the Victorian Curriculum V2.0 for Mathematics will look like in their context.	**Michael MacNeill** Michael MacNeill is the Curriculum Manager and subject matter expert for Mathematics F-10 and VCE for the VCAA. With a background having studied neuroscience, astrophysics, mechanical and biomedical engineering, he has sought the application of mathematics across disparate areas of investigation and more importantly how the process of learning and applying mathematics can be demystified. Michael has accrued 20 years in the classroom teaching VCE mathematics and physics, as well as mathematics and science at all levels in the secondary context, most of that time leading faculties and whole schools within roles including Head of Science, Head of Numeracy, Head of Mathematics and Head of Senior Mathematics.
	B5: Reflecting on context to improve leadership practice This session will identify the signposts you can use as a school leader to develop your strategies for improvement in mathematics and numeracy outcomes in your context. Every school is a unique context and reflecting on the strengths of your particular context is an essential step in forming your strategy. This session will help you to identify how to find those strengths, how to identify the gaps and point you in the direction of resources that you can use to support your leadership improvement work.	**Kerryn Sandford** Kerryn is the President of MAV and Principal of Heathmont College. She has taught mathematics and science across Years 7 to 12 since 1997 and undertaken additional study having completed a Masters in Education and a Professional Certificate in Mentoring from The University of Melbourne. She has previously held positions in school leadership in the North West Region of Melbourne ranging from working as a numeracy coach for a large metropolitan secondary school to assistant principal at another.

	B6: Developing a whole school approach to fluency: The why and what In this session Ange shares the importance of developing a strategic and targeted approach to fluency across your school. Ange will start by exploring the research that underpins fluency development. She will explore its place in the curriculum and the impact a concentrated approach can have on student confidence, motivation and achievement in mathematics. The session will provide practical examples to assist you to embed a focus on fluency both at school and home for your students. You will walk away from this session with insights and ideas to take the first steps towards implementing a whole school approach to fluency in your own context.	**Dr Ange Rogers** Dr Ange Rogers is an experienced primary school teacher and Numeracy Leader. She was the editor of the Mathematical Association of Victoria's teacher journal *Prime Number* for three years. Ange is a passionate presenter who regularly facilitates professional development for teachers and schools across Australia. In 2014 she completed her PhD in Mathematics Education focusing on developing the PVAT place value assessment. She lectures to pre-service teachers, and mentors teachers and leaders through her Numeracy Teachers Academy.
Workshop rotation 2: 11.55am-12.55pm	**C1: Reflecting on our practice as leaders** This session will discuss the importance of reflective practice as school leaders, with a specific focus on improving outcomes in mathematics. This session will explore models of reflective practice which can be utilised to improve teacher capacity and student engagement in mathematics.	**Dr Sara Gaul-McKee** Dr Sara Gaul-McKee completed her Doctor of Education at the University of Melbourne, with a focus on building teacher capacity in mathematics 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 sessional lecturer in both undergraduate and post graduate university degrees. She has also led the Melton Network Mathematics Community of Practice, where she worked with mathematics leaders and teachers with a focus on building teacher capacity.
	C2: Interrogating mathematics education professional learning models A rich array of professional learning models will be generated by participants and Gaye sharing whole school professional learning models they have encountered, that are intended to enhance the teaching and learning of mathematics through problem solving. Small groups will select what model/s they want to explore and how they want to explore them. Groups will develop short presentations for the workshop participants, that may include questions about various models, the feasibility of implementing a model/s in their school, comparisons between models, examination of one or several models and / or anything else they decide to explore. Whole-workshop discussion of ideas presented will culminate with participant reflections on what they take away from the session and /or what they want to learn more about.	**Dr Gaye Williams** Dr Gaye Williams, Honorary Senior Fellow, International Centre for Classroom Research, The University of Melbourne, taught Year 7-12 mathematics, provided professional learning for primary and secondary teachers (Foundation to Year 12), and researched in mathematics classrooms for over 30 years. Gaye's teaching expertise in collaborative problem-solving (1994 National Excellence in Teaching Award, NiETA) has been invaluable to her analysis of classroom interactions. Her PhD on improving the intellectual and affective quality of mathematics lesson (awarded the 2007 University of Melbourne Chancellor's Prize), was undertaken in Year 8 classrooms internationally. Findings have stimulated Gaye's research into ways the relative resilience and relative paces of thinking of student group members can influence their group activity. Teachers Gaye has worked with in various capacities have enriched her understandings of ways teachers can develop strategies for composing effective groups.
	C3: Building a mathematics education culture of learning Have you wondered about some of the strategies required to build a culture of mathematics learning with your teams of teachers in your setting? This session will focus on practical mathematics strategies to reduce teacher mathematics anxiety and build a culture of 'doing mathematics' as a core principle of teaching mathematics. The session will utilise key tools that can be adapted for all school settings.	**Leonie Anstey** Leonie is passionate about leadership, mathematics and numeracy education. Leonie has worked extensively with school districts, systems and individual schools to enable all educators to make progress to meet their mathematics education goals. She holds a Masters of Education (Research) based on the Skills and Knowledge for Mathematics Teacher Coaching. Leonie was formerly a Principal in Victoria and worked extensively as a teacher and principal coach. Leonie's teaching background includes senior secondary, middle years and primary. She has also supported early childhood settings to implement mathematics and science strategies.

	C4: A dynamic approach to integrating the Mathematics Curriculum V2.0 This hands on and interactive session supports leaders in collaboratively planning an iterative approach to implementing the Victorian Curriculum Mathematics V2.0. Participants will engage in in-depth exploration of the foundational concepts underpinning the updated curriculum, fostering a comprehensive understanding of the Victorian Curriculum Mathematics V2.0. By delving into the core principles, leaders will gain insights to effectively guide and support educators in embracing the revised curriculum. The session will equip leaders with practical strategies to facilitate the seamless adoption of the updated curriculum by teachers, fostering a cohesive and enriching learning environment.	**Ellen Corovic and Di Liddell** Ellen Corovic is a dedicated and passionate educator who thrives on collaboration with students, teachers, and educational institutions. As a teacher, school leader and now education consultant and researcher, she works to build individual and collective efficacy as well as teacher capacity in mathematics. Ellen has extensive experience as an education consulting, including ten years based at the Mathematical Association of Victoria. She completed a Master of Instructional Leadership at the University of Melbourne in 2019 before commencing a PhD at Monash University in 2021. The focus of her research is factors that influence teacher practice change. Ellen continues to support schools through coaching, advice, and support. Ellen enjoys supporting teachers to find the beauty, fun and love of both mathematics, and teaching. Di is an Education Manager at the Mathematical Association of Victoria. Her role is centred around collaborating with schools to create professional learning communities that nurture teachers' passion and skills in mathematics education, contributing significantly to the ongoing improvement of educational practices. With over two decades of experience in the education sector, her contributions have yielded tangible improvements in teaching methodologies, resulting in heightened engagement levels among both students and teachers. Di's academic background includes a Bachelor of Teaching/ Applied Science and a Graduate Diploma focused on literacy and numeracy instruction from Deakin University. Di is in the final stages of completing a master's degree in educational research at The University of Melbourne, where her research project focuses on the transformative potential of a pedagogy of listening, with a specific emphasis on illuminating student voice.
	C5: Leading change in mathematics, one step at a time This session will explore a personal account of the impact of Numeracy Leaders and the ways in which they can directly influence whole school change and improvement. Primary Learning Specialists, Nikki and Taryn, will share how they took a whole school vision for mathematics and created practical and manageable goals and actions, resulting in a united whole school approach. They will share the strategies they used to create direct links between professional learning sessions, professional learning communities and collaborative planning and how they were able to build momentum through staff commitment, leading to consistency of practice and a positive change in school culture. They will speak openly about the challenges and obstacles they faced along the way, as well as the significant impact that critical reflection and feedback had on their success.	**Nikki D'Antonio and Taryn Vole** Nikki and Taryn are a team of two highly experienced Primary School Learning Specialists, Maths Consultants and the creators of Limitless Maths. During their time as Learning Specialists, they demonstrated proven success in driving whole-school improvement and influencing sustainable curriculum change to improve student learning outcomes. Mathematics and numeracy is a core focus of their expertise, and they are very passionate about supporting both teachers and students to approach mathematics with a positive mindset. They have a range of experience working with teachers, PLC Leaders and leadership teams to develop and strengthen their knowledge, skills and strategies within key areas, such as maths anxiety, the proficiencies and rich tasks. This year, they are working as MAV Consultants, whilst continuing to expand Limitless Maths.

	C6: Elevating results, fostering participation, enrichment vs acceleration **Enrichment and acceleration aim to cater to student needs in fundamentally different ways. Acceleration propels students through the curriculum at a faster pace. Enrichment provides students with opportunities to explore mathematics in greater depth, to grapple with complex problems and engage in creative and critical thinking; students learn to persevere, think flexibly and to appreciate the beauty and elegance of mathematics. Research-based decisions in education help enhance teaching and learning and improve student performance, so what does the research tell us? "Self-efficacy declines significantly upon entry into** **E** accelerated mathematics." [Bandura, 1997; C. S. Dweck 2007; Yeager et al. 2019]. As top performing students move into an environment where everyone else is of a similar or higher ability, their positive feedback loop that provided the motivational drive and growth mindset can take a savage blow. In contrast, longitudinal studies have shown that students who participate in enrichment programs are more likely to pursue careers in STEM fields and achieve success in higher education. What about experience? In a typical outer Melbourne suburban school, following the introduction of an enrichment program, the number of students enrolled in Specialist mathematics grew from 6 to 25 with similar growth experienced in Mathematical Methods, furthermore, students study scores improved	**N**
	C7: Leading initiatives in schools: strategies for effective implementation Effective leadership is paramount for driving initiatives that promote innovation and improvement within educational settings. This session will explore the essential components of leading initiatives in schools, focusing on strategies for effective implementation. It will outline key principles and methodologies that educational leaders can employ to initiate, guide and sustain initiatives within their schools, including the significance of fostering a culture of collaboration and communication. The session will also be an opportunity for school leaders to set clear goals and objectives for initiatives that align with their school's goals and priorities and explore ways to effectively implement them.	**Amanda Reed** Amanda Reed is a mathematics educator with extensive experience in secondary schools spanning many years. Throughout her career, she has held various leadership roles, including head of the mathematics faculty and Learning Specialist for Numeracy. Demonstrating her commitment to professional development, Amanda has conducted numerous workshops for teachers and has been a presenter at conferences. She has also contributed to NAPLAN writing for Numeracy and served as a teacher researcher for The Lexicon Project. Currently, Amanda is pursuing her Doctor of Education at The University of Melbourne while serving as a Clinical Specialist for the university. Additionally, she teaches within the Master of Teaching Secondary Internship course, focusing on the mathematics learning area. **Peter Fox** Peter is passionate about mathematics, education and the way technology can be used to engage, excite and enhance student understanding. Peter taught high school mathematics for more than 25 years. He has used data logging, video analysis and interactive media for many years to help motivate and inspire students. Peter has also worked as a project manager at the University of Melbourne, taught DipEd students at Monash University, worked on VCAA course review and examination panels, provided resources and professional development in various regions around the world as they move to incorporate a range of technologies in the mathematics classroom. Peter works with Texas Instruments providing professional development, product development, website maintenance and teacher support.

Workshop rotation 3: 1.45pm-2.45pm	**D1: Supporting middle leaders to build their career** An ongoing issue facing schools at present is attracting and retaining teachers and leaders in schools. While there is much discussion in media and other places about what to do to address this issue, what is not known is exactly how teachers build a career. This session will focus on the career pathways of middle leaders. Drawing on the career maps of 50 school leaders (senior and middle leaders) we consider how middle leaders can be best supported at the school level through practices, policies and programs which can enhance career development.	**Dr Pauline Thompson** Dr Pauline Thompson is a Senior Lecturer in educational leadership at the Faculty 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.
	D2: Providing assistance for students described as 'needing additional support' Each year students from Years 3 and 5 sit the national literacy and numeracy (NAPLAN) tests designed to identify whether they have the critical mathematics skills needed to progress their learning. Results are now reported across four proficiency levels. Students whose results indicate that they are not achieving the expected learning outcomes are placed in the 'Needs additional support' proficiency level and are likely to need additional support. Students at the 'Developing' proficiency level may also require additional assistance to enable them to achieve their potential. In this session we will examine the proficiency level descriptions for Years 3 and 5 to identify possible difficulties these students may be experiencing. We will discuss ways that leaders can support classroom teachers and parents to assist students to build on their students' mathematical skills, knowledge and understandings.	**Dr Cath Pearn** Dr Cath Pearn is a 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. Cath has provided professional development for South Australian teachers and educators in the Preschool Numeracy and Numeracy R-2 programs. She is particularly interested in the identification and assistance for students at all levels mathematically 'at risk' of not meeting national minimum standards and those who are not achieving their mathematical potential. Cath is also a Senior Research Fellow in the Assessment and Reporting Division at ACER. Cath developed Mathematics Intervention, a program for Year 1 students mathematically 'at risk', which she continues to support. Her PhD investigated the links between fractional competence and algebraic reasoning of middle-years students.
	D3: Reimaging the faculty meeting Stephen Dinham's research into the role of a secondary Head of Department found that the most effective leaders demonstrated a strong focus on students and their learning. This workshop will explore how a faculty meeting can build on this focus for teachers of secondary mathematics and both bridge the theory-practice divide to engage teachers through reflecting on, and rethinking, their classroom practice and develop a greater collective teacher efficacy within the faculty so that all students have the opportunity to maximise their learning in mathematics. Many examples will be shared, and participants will have time to consider their own contexts.	**Linda Shardlow** Linda Shardlow is a Clinical Specialist for the Master of Teaching (Secondary) at the University of Melbourne. She is also a director of the board of the Institute for Enquiring Minds, a member of the Panel of Educators, Teachers and Leaders (PETL) for the Australian Education Research Organisation (AERO) and has been the Clinical Practice Co-ordinator for the final year teacher candidates at the University of Melbourne, Head of Mathematics at three schools and a Director of Staff Learning.
	D4: Structured reflective practice in secondary school mathematics teaching Many schools have a whole-school approach to professional learning. The prevailing sentiment of teachers in general and particularly mathematics teachers is that we are motivated to improve. Unfortunately, given the unique nature of mathematics teaching when compared to other subjects, the universal approach may not optimally enhance mathematics teaching and learning in your school. This workshop will focus on a low-cost, time-efficient approach to improving individual mathematics teachers and classrooms through the power of collaborative teacher efficacy. Ideally the approaches discussed will compliment the whole-school professional learning methodology, but could easily be implemented in parallel.	**James Dann** James is an experienced mathematics teacher who has taught across all levels of the Victorian mathematics secondary school curriculum. James is a leader within an independent school mathematics department and has been a VCE Mathematics Assessor of Mathematical Methods for several years. James originally studied to become an engineer, with a passion for mathematics. This led to the creation of student-led mathematics problem solving clubs at multiple schools during the early stages of his career, with a focus on enriching the more able students. James feels that he truly became a teacher when his focus turned to ensuring all students and staff have access to a rich, well-sequenced curriculum that provides frequent opportunities for students to show their understanding and develop their skills.

	D5: Developing a whole school vision and approach for the teaching and learning of mathematics Challenging tasks, implemented using mixed ability settings, can be an effective mode to enhance and promote student discussions which leads to reasoning and deeper understanding of mathematics concepts. The 'Launch, Explore, Summarise' instructional model can support teachers to confidently set up class structures that facilitate and guide this type of learning. To develop cohesion in teaching practices across the school, all staff should be provided with opportunities to deepen their understanding of research informed strategies through their school-based professional learning. Critically, this professional learning should enable teachers to be involved in the decision making and direction, rather than simply be directed by leadership. The focus of this seminar is to share a sequence of steps used to develop a whole school approach and school vision about the teaching of mathematics. Jess will share the process used from her own school to ensure there is a deeper understanding of best practice methodology for teaching mathematics, including the success and challenges that occurred along the way.	**Jess Kurzman** Jess Kurzman is a Mathematics Leader and Learning and Teaching Leader at St. Patrick's Primary School in Kilmore. She has been a Mathematics Leader for over ten years and is extremely passionate about improving teaching and learning for all students. Jess also works as a consultant for MAV and regularly supports schools working towards best practice approaches to the teaching of mathematics.
	D6: Moving mathematics: change management strategies for implementing whole school pedagogical models and curriculum updates This session will demonstrate how mathematics leaders can shift whole school mathematics pedagogical practices using change management strategies that promote the successful implementation of Department of Education priorities. Participants will learn how the mathematics department at Albert Park College has developed a guaranteed curriculum that leverages the e5, HITS, and mathematical play. The evolution of the mathematics department will be showcased and the specific leadership actions that have allowed the mathematics team to grow their teaching practice will be canvased. Participants will leave the session with theoretical frameworks and practical strategies for implementing lasting change in their schools that improves student outcomes. This active workshop will invite individuals to reflect on their current goals and map a pathway towards their ideal department.	**Rachael Gore** Rachael Gore is a Leading Teacher of Numeracy and Head of Mathematics at Albert Park College. She received the Outstanding Secondary Teacher Award for the Victorian Education Excellence Awards. Rachael is an engaged educator and passionate public speaker. She has presented at a wide variety of Conferences including the Mathematical Association of Victoria, VicPhysics PHYSCON, and the Department of Education Principal's Conference. Rachael has been a panel member, interviewer and podcast host for the Victorian Academy of Teaching and Leadership professional development sessions. She completed the Teacher Excellence Program for Mathematics at the Victorian Academy of Teaching and Leadership and is currently studying for her Master of Education in Leadership and Management. Rachael was chosen to represent Victorian teachers at the Ministerial Review Group for the National Schools Reform Agreement in 2023.

Keynote 2: 2.50pm – 3.50pm	**E: Guiding leaders to catalyse change in numeracy and mathematics outcomes** The need to ensure every Victorian student leaves school strongly numerate and equipped with the mathematics knowledge, skills and dispositions to make decisions in a mathematics-rich world is essential. Yet jurisdictions, sectors and schools can struggle to address the underlying causes of low achievement and growth in student learning in numeracy and mathematics. In recognition of the importance of school and middle leaders in improving numeracy and mathematics outcomes, the Department of Education published the Numeracy Improvement Guide for School Leaders (the Guide). Drawing on new and previously published knowledge and research about excellence – and issues – in numeracy and mathematics education, the Guide has supported leaders to identify specific priorities and actions for mathematics and numeracy improvement as part of annual implementation planning. In this keynote address, Penny will explore the Guide and its implementation over the past 18 months, identifying challenges and opportunities, and highlight new plans to further strengthen guidance to schools in 2024. She will also outline the key opportunities presented by the Victorian Curriculum: Mathematics 2.0 to catalyse change in leading, teaching and learning mathematics.	**Penny Addison** As the Director of the Numeracy, STEM and Digital Learning Branch at the Department of Education, Penny leads a number of teams that have responsibility for the design and delivery of policy and guidance, professional learning and curriculum aligned-resources. Having had experience in a range of teaching, school leadership and system roles over the last 20 years, Penny cites Victorian mathematics education as an area of particular interest. In her current role, she has a key focus on building the capacity of leaders and teachers to ensure that every student leaves school strongly numerate and with the knowledge, skills, capabilities, and dispositions they need to support their chosen pathways and to make decisions in a mathematics-rich world. *Keynote sponsor:* VICTORIA State Government | Department of Education

Day 2: Primary mathematics teaching and learning
Friday 14 June, 2024

Time	Title/abstract	Presenter biography
Keynote 1: 9am-10.15am	**A: Strength-based approach to mathematics and numeracy education: the role of mathematical wellbeing** It is socially acceptable for one to say that one is 'not a maths person'. This mindset often emphasises mathematics failures and anxieties, reinforcing the belief that mathematical ability is innate. To combat this, we advocate for a wellbeing-oriented approach to mathematics education that is rooted in positive psychology. Our recent investigations highlight the significant role values play in our wellbeing. Drawing from extensive research and student feedback from various countries, we have developed a 'mathematical wellbeing' framework. This framework identifies seven core values—Accomplishment, Cognition, Engagement, Meaning, Perseverance, Positive Emotions, and Relationships—that are crucial for nurturing mathematical wellbeing. Drawing on insights from experienced mathematics educators and evidence-based strategies, we delve into practical methods to support teachers and students to fulfil these values. This in turn can enhance mathematical wellbeing so that both teachers and students are more prepared to engage with mathematics teaching and learning.	**Dr Julia Hill and Professor Wee Tiong Seah** Dr Julia Hill is a Lecturer in Mathematics and Numeracy education at the University of Melbourne and Deakin University. Leveraging her background in teaching and educational psychology, Dr Hill's research bridges the gap between positive psychology and mathematics education. She explores the power of positive emotions, strengths, and flourishing mindsets in both teaching and learning mathematics. Her doctoral research led to the development of a 'mathematical wellbeing' framework, now used internationally to understand ways to cultivate positive feelings and experiences in mathematics. A passionate advocate for translating research into practice, Dr Hill is collaborating with teachers across Victoria to develop strategies to support a flourishing mathematics classroom. Wee Tiong Seah is Professor in Mathematics Education at The University of Melbourne. Wee Tiong's research mainly focuses on how motivational constructs (e.g., values) contribute to the development of motivated and emotionally resilient learners, and how these complement cognitive approaches to improving mathematics learning. Wee Tiong has also been studying how cultural variables (e.g., forms of Confucianism, Buddhism) affect the quality of mathematics education. He is Founding Director of the 22-nation research consortium, Third Wave Lab, which has so far coordinated 12 international research studies utilising values/valuing.

What educators said about the conference.....

'*It was an invaluable experience, both for delving into the latest research-based information and helping to shift my perspective. Having been a teacher for over 20 years, the diverse workshops helped me see just how much mathematics education has, and is continuing to evolve. I'm confident this new knowledge can improve our approach to teaching and learning mathematics at our school.*'

Workshop rotation 1: 10.50am-11.50am	**B1: Shapes and their properties: transforming the teaching of shape with examples from our world** Do you want to support a rich understanding of shape? Real-world artefacts provide rich visual stimuli for investigating geometry concepts in primary schools. Patterns of lines and shape found in decorative quilts, vases and tiles can be used to investigate concepts such as the properties of 2D shapes and transformations. This session will focus on incorporating art and design into the teaching of geometry concepts. Participants in this session will explore geometry activities using artefacts to support the development of content knowledge and conceptual understanding.	**Dr Carmel Mesiti and Kate Copping** Carmel is a Senior Lecturer in Mathematics Education at The University of Melbourne, her research has centred on exploring, through international video-based research, the nature of teaching and learning in mathematics classrooms. Carmel's recent research as part of The International Classroom Lexicon Project contributed new knowledge in the form of the Australian Lexicon; a cognitive and cultural artefact of the mathematics teaching community in which its practitioners have named the valued, pedagogical practices of their mathematics classrooms. Carmel co-leads the International Community for Classroom Research (ICCR) research hub which brings together researchers investigating classroom teaching and learning in physical and virtual spaces. Kate is a Graduate Researcher and Lecturer in Mathematics Education at The University of Melbourne. Kate's research explores the nature of primary mathematics leadership; how it is conceptualised, experienced, and enacted within schools. This qualitative research positions primary mathematics leaders as middle leaders. The research aims to develop a stronger understanding of the role of primary mathematics leaders and inform school policy and decision making. Kate also researches the teaching and learning of mathematics in the primary education sector to support the development of educators in building student engagement and understanding in mathematics.
	B2: What do we value to attain professional wellbeing? Let's bid to find out! Knowing and understanding what is important to each of us for thriving in our mathematics teaching can help us self-regulate and sharpen our self-awareness. It enables us to identify what we can do to optimise our sense of professional well-being. In this session, we will engage in a group activity which will lead us to identify what we value to achieve professional wellbeing. Subsequently, we will modify the activity for our students so that we can assess what they value in enhancing their mathematical well-being. Comparing the values underlying our professional well-being and our students' mathematical well-being would be empowering for both students and teachers.	**Sandra Ting and Professor Wee Tiong Seah** Yushan (Sandra) Ting serves as a visiting scholar at the Department of Mathematics and Science at The University of Melbourne. Previously, she held positions as a research staff at the Institute of Teacher Education, College of Education, National ChengChi University, Taiwan, and as a junior high school guidance counsellor in Taiwan. Yushan's research interests center around education, with a specific focus on enhancing students' learning motivation and mental well-being. Originating from Taiwan's highly competitive education system, she has firsthand experience witnessing the immense pressure students endure to excel academically. This experience has motivated her to explore strategies for achieving a balance between students' academic drive and their mental health. Her current major research focuses on value, self-compassion, well-being, growth mindsets, and integrated these concepts in students' learning journeys. Wee Tiong Seah is Professor in Mathematics Education at The University of Melbourne. Wee Tiong's research mainly focuses on how motivational constructs (e.g., values) contribute to the development of motivated and emotionally resilient learners, and how these complement cognitive approaches to improving mathematics learning. Wee Tiong has also been studying how cultural variables (e.g., forms of Confucianism, Buddhism) affect the quality of mathematics education. He is Founding Director of the 22-nation research consortium, Third Wave Lab, which has so far coordinated 12 international research studies utilising values/valuing.

	B3: Reflective practice and formative assessment This session will explore the importance of using formative assessment as a basis for reflective practice. This session will provide participants with examples of formative assessments they can utilise in the classroom, and go through the process of how to analyse assessments and reflect on teaching practice to improve student learning.	**Dr Sara Gaul-McKee** Dr Sara Gaul-McKee completed her Doctor of Education at the University of Melbourne, with a focus on building teacher capacity in mathematics 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 sessional lecturer in both undergraduate and post graduate university degrees. She has also led the Melton Network Mathematics Community of Practice, where she worked with mathematics leaders and teachers with a focus on building teacher capacity.
	B4: Using Daily Reviews in the classroom - A practical session for classroom teachers who know the why but want to practice the how. This session will practically explore what a maths session that uses daily reviews looks like. It will explore student engagement norms, the recite, recall, apply model and how daily reviews consolidates students' understanding and develops their fluency in essential understandings for numeracy sessions. It will showcase how daily reviews add to students' confidence by ensuring that previously taught skills and concepts are reviewed in a sequenced and planned way.	**Brooke Brennan and Daniela Insolia** Brooke Brennan is a MAV consultant as well as a practicing researcher, school leader and teacher. She is passionate about building data literacy, evidence-based practices, leadership, school improvement and assessment to help drive improved student outcomes. Her work is underpinned by a growth based pedagogy and the firm belief that given the right conditions and support, every student can learn. She aims to help teachers become confident in making data informed decisions that can show real impact on their school contexts and help school leaders build capacity of teachers and teams to effectively and authentically use their data. Daniela Insolia is the Acting Maths Leader and Intervention Leader at St Francis of Assisi in Mill Park, the largest Catholic primary school in Victoria. She is not only a passionate teacher, but also an experienced mentor for graduate and early career teachers. She is experienced and passionate in building the capacity of classroom teachers, leading teams and intervention structures that use evidence based strategies and help support growth for all students.
	B5: Hands on!! - Embedding the proficiencies in rich investigations Square counters are an excellent hands-on classroom resource that can be used as a tool to empower and enable students to creatively investigate many areas of mathematics and solve problems. In this workshop we will look at tasks in all the six strands and investigate how manipulations with 24 square counters can provide rich learning opportunities for students to reason, justify, connect ideas and draw conclusions to ultimately develop understanding. Within each exploration we will consider strategies to promote rich dialogue and how each task can be differentiated to enhance the learning.	**Cathy Epstein-Rodgers** Cathy works as a consultant at MAV and is the Numeracy leader at 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 collaborating and making connections. In the past 20 years she has acquired a wealth of tried and tested rich, easily differentiated tasks, games and learning Sequences based around the Big Ideas in Mathematics. Cathy has written numerous articles for *Prime Number* and *Common Denominator*, designed tasks for Maths 300 and co-authored warm ups and exit tickets for Mathology.

	B6: Escape room challenge – Exploring student mindsets and learning dispositions Join us for a collaborative escape room experience where you will have the opportunity to experience mathematics through the eyes of your students. You will be challenged to reflect on how your mindset and learning dispositions impact and influence the way your students see themselves as mathematicians, whilst engaging in a range of rich and hands-on learning experiences. You will leave this session with a bank of practical resources and teaching ideas that can be taken straight back into your classroom!	**Nikki D'Antonio and Taryn Vole** Nikki and Taryn are a team of two highly experienced Primary School Learning Specialists, Maths Consultants and the creators of Limitless Maths. During their time as Learning Specialists, they demonstrated proven success in driving whole-school improvement and influencing sustainable curriculum change to improve student learning outcomes. Mathematics and numeracy is a core focus of their expertise, and they are very passionate about supporting both teachers and students to approach mathematics with a positive mindset. They have a range of experience working with teachers, PLC Leaders and leadership teams to develop and strengthen their knowledge, skills and strategies within key areas, such as maths anxiety, the proficiencies and rich tasks. This year, they are working as MAV Consultants, whilst continuing to expand Limitless Maths.
Workshop Rotation 2: 11.55pm - 12.55pm	**C1: Newman's prompts: Identifying difficulties with worded problems** The verbal interchange of ideas by teachers and students as they perform mathematical tasks is important for expressing mathematical ideas and reasoning. Newman investigated students' language issues when solving worded problems and found that they progress through five stages. To highlight student errors when solving word problems, the teacher uses a series of prompts related directly to one stage of Newman's error analysis. These prompts allow teachers to gather information about whether a student understands what the task requires them to do, the strategies the students use to solve the task, the vocabulary they use to describe their strategy and whether they can complete the calculations needed for successful completion of the task. This session will look at the five stages or prompts and possible indicators and teaching suggestions for different types of worded problems.	**Dr Cath Pearn** Dr Cath Pearn is a 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. Cath has provided professional development for South Australian teachers and educators in the Preschool Numeracy and Numeracy R programs. She is particularly interested in the identification and assistance for students at all levels mathematically 'at risk' of not meeting national minimum standards and those who are not achieving their mathematical potential. Cath is also a Senior Research Fellow in the Assessment and Reporting Division at ACER. Cath developed Mathematics Intervention, a program for Year 1 students mathematically 'at risk', which she continues to support. Her PhD investigated the links between fractional competence and algebraic reasoning of middle-years students.
	C2: Scratch beyond the surface - Embedding algorithmic and computational thinking in your teaching This session will look at how to add computational thinking and algorithmic thinking to mathematics classes using Scratch and micro:bits, although other digital tools that are available at your school can be discussed. We will look at different ways to introduce new digital tools to learners, including through explicit instruction, gradual release, and play, so that your students start with confidence. This session is great for teachers new to Scratch or micro:bits, or for those that already know the basics and want to learn how to make more connections with the mathematics curriculum. You will leave with activities that can be adapted for Years 3 to 6.	**Kristen Hebden** Kristen Hebden is a lecturer at The University of Melbourne, teaching Science and Technology education in the Master of Teaching (Secondary) and the Master of Education. She is also completing her PhD in Makerspace Education, after years of teaching in STEM subjects and leading STEM programs. Before getting into education at schools Kristen worked at Scienceworks, giving her a passion for hands on experiences and playful learning.

	C3: Visualising decimal place value to build understanding One of the challenges when developing understanding of decimal place value is to represent the size of the smaller place values in correct proportion. In this session you will have the opportunity to engage with a fresh approach to introducing decimals (10ths, 100ths, 1000ths) using number lines, number talks and a specially developed number line template in Excel and printable Word documents. One of the key benefits is the visual representation of decimal place value and the equivalence between them, often challenging for students. This also leads nicely into rounding. Handouts, and the Excel template will be shared with participants.	**Antje Leigh-Lancaster** Antje is a passionate leader, learner, and educator; dedicated to creating inclusive and engaging learning opportunities that enable students to deepen their mathematical understanding. She has worked closely with teachers, academics, education departments and educational organisations across Australia in a variety of roles focused on building teacher capacity through the design and delivery of tailored professional learning, and learning design and development of resource solutions that incorporate evidence-based practices for print and digital delivery. Most recently, her work as co-founder of Leigh-Lancaster Consulting has involved supporting teachers with implementing the revised mathematics curriculum, unpacking the four mathematical processes, numeracy across learning areas, and redevelopment and delivery of the Academy course Leading Differentiated Teaching in Mathematics.
	C4: Mathematics versus numeracy: Empowering students to become numerate citizens of the world This workshop will explore the important distinction between the terms 'mathematics' and 'numeracy' and why it is important to understand the difference. This session will cover the four essential elements of numeracy and explore practical ways to bring these elements into the classroom. Participants will be given opportunities to reflect on their own practice with an emphasis on ensuring their mathematics program is numeracy-rich.	**Elise Copsey** Since entering the classroom in 2009, Elise has worked to raise the profile of mathematics education in schools. In her work as both Numeracy Leader and Number Intervention Specialist, she has promoted positive attitudes to mathematics and the importance of designing inclusive work programs. She is particularly passionate about reducing mathematics anxiety in both teachers and parents. As an Education Consultant with MAV, Elise is supporting teachers to ensure that maths is approached with a positive outlook and with an emphasis on life-long learning.
	C5: Creating mathematical mindsets As educators, we are not just teachers, but also former students. By reflecting on our personal maths journeys, encompassing both successes and challenges, we can gain valuable insights to enhance education for future generations. This workshop presents a professional exploration of four essential steps to foster a Maths Mindset Culture in your school: 1. Reflect with stakeholders 2. Collaboratively construct consistent messaging 3. Develop Math Mindsets in the classroom 4. Embed Math Mindsets across the school and community. These will be presented with practical examples informed by Jo Boaler's research on Mathematical Mindsets, empowering numeracy leaders and classroom teachers to boost student confidence and achievement. Learn to integrate engaging tasks and persistence-building strategies into your classroom, drawing from current experience and best practice research. We can transform attitudes towards maths one step at a time.	**Monica Waterworth** Monica is a dedicated primary educator with a commitment to transforming attitudes towards mathematics. Her journey in education was shaped by early experiences, including the dreaded speed-based multiplication drills of her primary school days. With over 15 years of experience in classrooms and numeracy leadership, Monica has honed her skills in creating inclusive and inspiring Maths classrooms and cultivating positive mindsets among students, teachers and parents alike. With a wealth of experience in grassroots development, Monica has lead the implementation of school mindset programs. She is resolved to empowering individuals and communities to embrace mathematics with enthusiasm and confidence.

	C6: Launch, Explore, Summarise – but how? Dive into an effective teaching and learning instructional model, Launch-Explore-Summarise, that promotes student engagement and collaboration. Students are challenged to share their knowledge, elaborate on each other's ideas and approach tasks from multiple perspectives. The session will cover various aspects, including teacher questioning techniques, appropriate wait time, task modelling, enabling and extending prompts and connections to the proficiencies all whilst being immersed in a challenging task as if in the classroom yourself. This session will leave you with a renewed look on how mathematics lessons can transform your classroom and prepare students to become numerate citizens of the world.	**Renee Ladner** Renee is an experienced educator working as an education consultant for the Mathematical Association of Victoria. With over ten years of experience, she has also served as a classroom teacher and Numeracy Leader in primary schools. Renee holds a Master's in Educational Leadership and is dedicated to fostering a growth mindset among both students and teachers. She achieves this by designing tasks that allow for multiple entry points and by providing scaffolding to support learners of all abilities. Drawing on her extensive teaching experience and leadership skills, Renee emphasises authentic collaboration and connection with fellow teachers and students. She prioritises building confidence in mathematical content knowledge and ensuring that individuals are aware of their next steps in the learning process.
Workshop Rotation 3: 1.45pm -2.45pm	**D1: Cycles of teacher talk, trial and error, and reflection in exploring ways group composition can influence students' mathematical problem solving** Roles of teacher reflecting and redefining practice (emphasised in the conference theme) are illustrated through teacher teams working together to learn more about composing student groups in this workshop. Through whole-session and small-group interactions, we will draw on participant experiences, Gaye's experiences (as teacher, PL presenter, and researcher), and Mathematics V2 to identify useful characteristics of groups undertaking challenging problems and consider types of group compositions that could facilitate such activity. Participants will work in small groups to experiment with grouping students in their class, sharing their thinking with their teacher group and considering modifications arising from group talk. Groups will report some of their thinking, challenges encountered, thoughts on overcoming them, and insights developed. Note: Participants could bring a class list, quickly generate one, or participate through reflections on groupings of others.	**Dr Gaye Williams** Dr Gaye Williams, Honorary Senior Fellow, International Centre for Classroom Research, The University of Melbourne, taught Year 7-12 mathematics, provided professional learning for primary and secondary teachers (Foundation to Year 12), and researched in mathematics classrooms for over 30 years. Gaye's teaching expertise in collaborative problem-solving (1994 National Excellence in Teaching Award, NiETA) has been invaluable to her analysis of classroom interactions. Her PhD on improving the intellectual and affective quality of mathematics lesson (awarded the 2007 University of Melbourne Chancellor's Prize), was undertaken in Year 8 classrooms internationally. Findings have stimulated Gaye's research into ways the relative resilience and relative paces of thinking of student group members can influence their group activity. Teachers Gaye has worked with in various capacities have enriched her understandings of ways teachers can develop strategies for composing effective groups.
	D2: Enhancing numeracy practices in the classroom: a social-practice approach for maths educators This session advocates for an approach to using tools in the numeracy in the classroom that goes beyond just computational skills. It encourages relating mathematical concepts to real-world contexts to foster deeper understanding of their relevance, effectively using various tools (both analogue and digital), cultivating positive student dispositions towards maths, and most importantly, developing a strong foundation in mathematical knowledge and skills. Numeracy is viewed as a social practice, and numeracy models are examined as potential guiding frameworks for enhancing teaching methods. By incorporating the tools of real life, using real-world contexts, and nurturing positive attitudes, teachers can empower students to confidently tackle mathematical challenges. The session explores embracing tools for teaching numeracy as an integrated social practice within the classroom.	**Justine Sakurai** Justine Sakurai is the project lead at the University of Melbourne spearheading and teaching in two major programs for the Victorian Academy of Teaching and Leadership on numeracy improvement. Justine is undertaking her PhD studies at the Faculty of Education at the University of Melbourne. She has well over two decades of experience as a teacher of mathematics and numeracy in Victorian secondary schools, and is currently lecturing in pre-service teacher education. 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, benchmarking, quality assurance, and assessment. Justine is the editor for *Vinculum*, the secondary maths teachers' journal for MAV.

	D3: Bringing tasks to life: tips for effective planning in mathematics In the busyness of day-to-day teaching, it is easy to get bogged down with finding the right task to use to teach mathematics. So much so, that once we find the task, we sometimes run out of time to actually plan the task. In this workshop, Aylie will offer tips and suggestions to enable teachers to pay attention to key aspects of planning. This includes spending a few minutes doing the task to consider: the range of student responses, the types of questions that will elicit students' thinking, and the pedagogies that will help students to notice and make sense of the mathematics that is the intended learning of the lesson.	**Aylie Davidson** Aylie's career aspiration is to ensure that every child has access to a quality education and that irrespective of background, knows they can learn and succeed. What motivates her as an educator is founded on enhancing student engagement, teaching for social justice and conceptual understanding. Her career in education spans 16 years and teaching and leadership roles in metropolitan and regional primary school settings, initial teacher education at Deakin University and Monash University, and project leadership for the Department of Education Victoria (DET). Aylie's PhD examined ways to help teachers work together to plan student-centred mathematics learning sequences and experiences that involve innovative pedagogies. Her other research interests include mathematical reasoning; innovative pedagogies in numeracy and mathematics; middle school leadership; and student engagement. In 2022, she stepped back into the Academy where she works as a lecturer and researcher in primary mathematics education at Deakin University.
	D4: Questioning and dialogue utilising VC2.0 mathematics curriculum? Do you wonder about how explicit teaching in the mathematics classroom, relates to the importance of questioning and dialogue? Do you ponder how questioning techniques can build feedback and assessment related to the curriculum in Victoria? This session will use practical hands-on examples related to multiplicative thinking content descriptors that build throughout the curriculum from Level Foundation. These strategies will allow the participant to adapt to the levels of curriculum in their setting.	**Leonie Anstey** Leonie is passionate about leadership, mathematics and numeracy education. Leonie has worked extensively with school districts, systems and individual schools to enable all educators to make progress to meet their mathematics education goals. She holds a Masters of Education (Research) based on the Skills and Knowledge for Mathematics Teacher Coaching. Leonie was formerly a Principal in Victoria and worked extensively as a teacher and principal coach. Leonie's teaching background includes senior secondary, middle years and primary. She has also supported early childhood settings to implement mathematics and science strategies.
	D5: Digital manipulatives in mathematics Mathematics manipulatives have been around for centuries. If you walk into a lower primary classroom during a mathematics session, you are likely to come across students using manipulatives. But would it be the same for an upper primary classroom? Research shows that one of the greatest misconceptions is that manipulatives are only suited for younger students. In this workshop you will learn how to use digital manipulatives through Polypad in Mathigon, to increase engagement, understanding and learning outcomes for F-6 students. These interactive manipulatives will support the students with problem solving while understanding the strategy behind the process. This workshop will help you reflect and redefine your mathematics practice for a digital savvy generation.	**Nilushi Minoli Dediwalage** Nilushi has been working as a primary school teacher and learning specialist for almost 14 years, during this time they have demonstrated a passion for mathematics. Nilushi is a PhD candidate researching student, parent, and teacher experiences of mathematics education in multicultural classrooms. Nilushi prides themselves on being a professional, collegiate person, who is deeply dedicated to mathematics. Nilushi works as a learning specialist, as well as teaching mathematics units at Monash University, and working with the Mathematical Association of Victoria as a mathematics consultant.

	D6: Using the Victorian Coding Challenge to enhance mathematics teaching in Years 5 and 6 Over 2000 primary students participated in the VCC last year? An essential component of the VCC is its resource pack, which all participating schools receive regardless of whether they wish to enter the final competition. This resource pack contains carefully designed and interesting investigations for students and teachers. In recent years, teachers have been using these materials to support teaching and learning in the general classroom. It's a good example of the low entry high ceiling design of the VCC resource pack. The session will include some interviews with teachers and students who have participated in the VCC over several years, look at some of the tasks and how they can be integrated into regular teaching, and show how the VCC is being used creatively by increasing number of Victorian teachers. It can enrich and challenge all students' experiences.	**Max Stephens and Danijela Draskovic** Max Stephens is research fellow at the Faculty of Education and has been actively involved with the MAV. Danijela Draskovic is an education manager at the MAV and has coordinated the Victorian Coding Challenge from its inception.
Keynote 2: 2.50pm – 3.50pm	**E1: 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 can completely transform student dispositions toward maths. This will be a very hands-on experience.	**Andrew Lorimer-Derham** 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 sponsor:* EssentialAssessment™ *Assessment and Curriculum made easy*

Reflective practice in mathematics education involves educators engaging in critical self-reflection on their teaching practices, instructional strategies, and student learning outcomes. It entails systematically examining teaching experiences, identifying successes and challenges, and considering how these experiences can inform future instructional decisions and improvements.

2024 Melbourne Mathematics Conference

Dates

Thursday 13 June 2024
Leadership in mathematics education (F-12)

Friday 14 June 2024
Primary mathematics teaching and learning

Venue

Kwong Lee Dow Building, 234 Queensberry St
Faculty of Education, The University of Melbourne

Time

9am–3.50pm, followed by happy hour.

Contact

For information about bookings email Di Liddell, dliddell@mav.vic.edu.au.

Registrations close on Friday 31 May, 2024.

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