



Maths and Science for Right Now

Practical Implementation for Next Week and Beyond...

2024 Early Years and Primary Conference



Queensland
Association of
Mathematics
Teachers



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Sunday 10th March | Coorparoo State School

Now with Mathematics, Science and STEM streams



Science
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	Room 1 (Early Years Maths)	Room 2 (Primary Maths)	Room 3 (STEM)	Room 4 (Science)
8:00 – 8:45	Registration			
8:45 – 9:00	Official Opening: Monique Sponsor Talk: Maths Australia			
9:00 – 10:00	Keynote Address: Paula Taylor Using Mathematical Modelling to Develop Scientific Understanding			
Workshop 1 10:05 – 10:50	Developing Fluency with Mental Addition and Subtraction (EY) Michael Minas	Additive Thinking across the Primary Years Emma Bird	Getting Creative with Maths & Science on iPad (Primary) Rachel Minns	Welcome to the Australian Curriculum Science v9 Charlotte Pezaro
10:50 – 11:30	Brunch and networking opportunities			
Workshop 2 11:30 – 12:15	Investigating number patterns for the early years Tierney Kennedy	Links with Special Numbers and Measurement Jan Cavanagh	Using Mathematical Modelling to develop Scientific Understanding Paula Taylor	Cultivating a Questioning Classroom Charlotte Pezaro
Workshop 3 12:20 – 1:05	Subitising, counting and ‘seeing’ ten-ness – critical foundations for place value, number facts and calculations Monique Russell	More than “carry the one”: Building real understanding of the four operations Michael Minas	What’s in a fold? (Yr3-6 workshop) Alwyn Powell	Using Science key ideas and core concepts to organise engaging teaching sequences Cathryn Menzler
1:05 – 1:30	Afternoon Tea			
Workshop 4 1:30 – 2:15	Planning and sequencing content for engagement with Australian Curriculum v9.0: Mathematics Libby Foley	Maths in Schools: Free Teaching Resources to Support Mathematics and Numeracy Rebecca Vivian, Susie Barber	The Very Angry Ladybug, STEAM activity (P-Yr2 workshop) Alwyn Powell	Engaging Young learners using Atomic Theory in my Science Classroom Megan Hayes
Sharing Session 2:20-3:30	Return to main conference space to participate in sharing session. Bring your prepared item for sharing			
3:30-4:30	Social Event: drinks and nibbles, prize draw, networking			



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Keynote Speaker: Paula Taylor

Assistant Director, Academy of Future Skills, ACT Education Directorate

Paula is an award-winning STEM educator who has worked both in Canada and Australia in K to 12 maths and science classrooms. Her passion for integrating the two subjects was not only necessary but unavoidable as mathematical reasoning and modelling was necessary to develop scientific literacy and to understand how the world works. In her current leadership role, she coaches ACT's public-school teachers to develop future-focussed skills that require the authentic and useful integration of maths in all STEM subject areas.

Using Mathematical Modelling to Develop Scientific Understanding

The ACT Education Directorate's Academy of Future Skills is transforming and strengthening STEM programs across ACT public schools to be focussed on data and mathematical reasoning. Without data, STEM is simply an 'activity' without a purpose that often can't be justified or explained. Using data is a great opportunity to construct meaning in order to develop scientific skills and conceptual understanding. Learn how we work with our teachers to develop robust learning programs so that students are collecting data in a few of our most popular primary lessons using a scaffolded inquiry model.



Abstracts

Workshop One

Early Years Maths

Developing Fluency with Mental Addition and Subtraction

Michael Minas, Director, Love Maths

One of the most misunderstood sections of the maths curriculum is fluency, with many people believing that this is about students shouting out ROTE-learned number facts on command. This session will explore what it means for your students to be truly fluent with mental addition and subtraction- thus making them the boss of the numbers and not the other way around. You will leave with a range of practical ideas that you can implement immediately to help your students achieve success.

Primary Maths

Additive Thinking across the Primary Years

Emma Bird, Head of Teaching and Learning, St Paul's Lutheran Primary School

Learn about the developmental progression from counting to additive thinking across the Primary years of schooling. Focus in on one year level and learn how to teach early additive thinking concepts using a Concrete-Representational-Abstract (CRA) model.

STEM

Getting Creative with Maths & Science on iPad

Rachel Minns, Tech Play Teach

Join us for a hands-on workshop experience as we explore how iPad can boost student creativity and engagement in maths and science across the primary curriculum. Walk away inspired, with resources and ideas, to get started in your classroom straight away. Attendees will need an iPad (a small number will be available to borrow) with the following apps installed: Keynote, Clips & AR MAKR.

Science

Welcome to the Australian curriculum science v9

Charlotte Pezaro, Chief Executive Officer, Dialogic

The revised Australian Curriculum: Science is here. In this workshop, you'll meet one of the curriculum designers to unpack the revisions and the implications for your classroom.

Workshop Two

Early Years Maths

Investigating number patterns for the early years

Tierney Kennedy, Education Consultant, Kennedy Press

AC9.0 requires students to create and investigate number patterns and generate sets of numbers. In this hands-on workshop we will: use counters and blocks to explore additive and multiplicative patterns, investigate our findings and devise if/then sequences of steps to describe them.

Primary Maths

Links with Special Numbers and Measurement

Jan Cavanagh, retired mathematics educator and former QAMT President

From block towers to Primes, Squares and Cubes and More. The link that most miss. Hands-on at its most powerful.

STEM

Using Mathematical Modelling to Develop Scientific Understanding

Paula Taylor, ACT Education Directorate

This workshop will continue on from the Keynote Address, searching deeper into the topic and providing practical ideas and examples.

Science

Cultivating a Questioning Classroom

Charlotte Pezaro, Chief Executive Officer, Dialogic

Children ask a lot of questions! In this workshop, we will explore the different kinds of questions children (and adolescents) ask and explain how we can best respond to support their development of ideas about science. We will unpack strategies to facilitate children's questions in ways that enable student-led inquiry and cultivate a questioning classroom.

Workshop Three

Early Years Maths

Subitising, counting and 'seeing' ten-ness – critical foundations for place value, number facts and calculations

Monique Russell, QAMT Executive

As mathematics educators, we want our students to be successful in mathematics and see it as a useful and enjoyable discipline to study (adapted from Professor Peter Sullivan). What are the foundations for ensuring they have success in primary schooling, in understanding place value and in calculations? How are the foundations of primary critical to secondary mathematics? This workshop will examine and provide practical learning of the 'how-to' of subitising, counting and the building up a knowledge of 'ten-ness' perfect for early years educators and those in middle school whose students are struggling with these critical understandings.

Primary Maths

More than “carry the one”: Building real understanding of the four operations

Michael Minas, Director, Love Maths

For many students, the four operations are their first foray into a confusing world of formulas and procedures that don't make much sense. During this session, Michael will explore approaches which will support students to develop a deep understanding of both what they are doing and why they are doing it when working with each of the four operations. A range of place value-based methods will be discussed. Participants will leave feeling a greater confidence in teaching addition, subtraction, multiplication and division in a way that prioritises conceptual understanding over memorising a series of steps.

STEM

What's in a fold?

Alwyn Powell, Adjunct Lecturer Education, UniSQ

What do covid 19, plate tectonics, and the James Web telescope have in common; they all require some form of folding. In the classroom ready activity children will explicitly enter the world of enquiry-based STEAM activity to identify patterns in number. Children will use everyday materials and record observations in a table to identify patterns and make predictions, finishing with an Erik Demaine folding activity.

Science

Using Science key ideas and core concepts to organise engaging teaching sequences

Cathryn Menzler, Principal Project Officer, Australian Curriculum: Science, QCAA

Taking a step back from the detail of content descriptions when planning supports teachers to identify the foundation and sequence of concepts in Science. Consideration of the key ideas and core concepts provides guidance on what students need to know and understand, and how to integrate the three strands authentically to deliver engaging teaching and learning sequences, at each stage of learning.

This session provides an opportunity to work collaboratively, using graphic organisers, to plan using Australian Curriculum version 9.0: Science.

Workshop Four

Primary Maths

Planning and sequencing content for engagement with Australian Curriculum v9.0: Mathematics

Libby Foley, Principal Project Officer, Primary, QCAA

The development of an engaging and effective mathematics teaching and learning program is crucial to the success of mathematical planning. It involves the identification and arrangement of content to enhance students' knowledge, understanding, and skills. Learning in Mathematics builds on each student's prior learning and experiences. Thoughtful grouping and sequencing of content facilitates the reinforcement and application of previously learned material in new contexts, fostering a deeper and more comprehensive understanding of mathematical concepts. This hands-on session will support teachers in exploring strategies to group and sequence content for year curriculum and assessment plans.

Primary Maths

Maths in Schools: Free Teaching Resources to Support Mathematics and Numeracy

Rebecca Vivian and Susie Barber, Project Officers – Maths in Schools, Adelaide University

Aligned with Version 9.0 Australian Curriculum, learn about our free online courses, a suite of webinars, downloadable resources, and professional learning support for teachers delivered by the CSER STEM Team. These Maths in Schools resources are part of a collaborative national project funded by the Australian Government Department of Education.

STEM

The Very Angry Ladybug STEAM activity

Alwyn Powell, Adjunct Lecturer Education, UniSQ

Engaging children in STEAM through children's literature allows for the development of maths and science concepts as well as providing opportunities for extending their technology skills. In this activity, children will consider symmetry, size and counting in maths, construct a moving ladybug, and reflect on what a ladybug actually eats. The construction requires the use of scissors and glue and extends the children's dexterity and manipulation of these.

Science

Engaging young learners using Atomic Theory in my Science classroom

Megan Hayes, STEM/Science teacher, Mudgeeraba Creek State School

As educators, we make assumptions about our students' ability to learn new scientific content. In this presentation you will see how Megan has adapted the work introduced to her by Ian Stewart (Atomic School, Brisbane) to engage her Primary students from as young as Year 2. Share her journey in which she observed student's growing understanding of scientific concepts related to Elements, Atoms and the Periodic Table using hands-on resources and the element of fun! Megan will share how these concepts have become part of her Year 2 Chemical Science unit over the past years. An interactive and practical presentation for all Primary teachers.

Sharing Session

Please return to the main conference space to participate in the sharing session. Bring your prepared item for sharing.

2:20 – 2:30pm Sponsor Talk: Matific

2:30 – 2:40pm Introduction to the session and organisation of groups (Leah)

You will leave this session with a number of ready to use ideas to take back to the classroom and to share with colleagues. Ideas discussed by other groups will be posted after the conference for your information.

3:30 – 4:30pm Sponsor Talk, prize draw, drinks and nibbles/afternoon tea, networking