



Mathematics 6-9

Program outline



Welcome to the Orbis Mathematics 6-9 program

The Mathematics 6-9 program is co-designed by experts Maureen Hegarty and Dr. Pauline Carter. It enhances your pedagogical content knowledge, and empowers you to design engaging middle school maths learning. The program focusses on building learner agency and effective learners in mathematics, aligning with our commitment to ensure all students learn and thrive.

The program consists of 5 face-to-face program days over 2 terms and covers the below key learning goals.

Understanding the SA Curriculum: Mathematics

- Integrating the content, dispositions and capabilities.
- Developing critical and creative thinking across the strands.
- Using the department's suite of resources for mathematics.

Developing pedagogical content knowledge and teacher expertise

- Designing engaging and challenging tasks in mathematics that cater for and grow all learners' knowledge and skills.
- Increasing the amount and quality of collaboration and learner talk in mathematics.
- Understanding and addressing key misconceptions in mathematics.
- Using a range of developmentally appropriate tasks in all content strands to develop and assess mathematical fluency, problem solving, understanding and reasoning.
- Developing and maintaining professional learning communities to support teaching and learning of mathematics in schools.

The learning

Day 1: Number concepts and operations

- Understanding how attitudes and beliefs influence how we teach and how students learn mathematics.
- Understanding the importance of designing learning which develops mastery of skills.
- Developing critical and creative thinking within mathematics.
- Supporting generalisation and algebraic thinking.

Day 2: Spatial awareness

- Transforming tasks to challenge and support learners and increase student engagement.
- Using concrete materials and various representations to develop spatial awareness, support conceptual growth, and encourage understanding through student-centred teaching.
- Designing learning that builds the proficiencies in and across proficiency strands.

Day 3: Fractions and proportional reasoning

- Developing fluency and understanding in fractions and decimals.
- Understanding and applying ratios and proportional reasoning.
- Sequencing learning with multiple entry and exit points.

Day 4: Statistics and probability

- Using multiple representations and materials to build conceptual understanding.
- Developing understanding and reasoning in statistics and probability.
- Understanding the significance of multiplicative thinking.
- Applying statistics and probability in authentic contexts.

Day 5: Bringing it all together

- Sequencing learning tasks to connect to prior learning and build conceptual understanding.
- Using diagnostic, formative and summative assessment in mathematics.

Applied learning activities

Applied learning is key to improving your professional practice. Across each day of the program you'll consider how to apply the learning to your context and your students by making your own commitments to action. Then you'll plan and trial tasks for your class and share your findings with other participants.

The applied learning task is outlined in detail during the program and support provided to you by the facilitators.

Program requirements

To achieve satisfactory completion, you need to:

- actively participate in program days and activities
- complete the applied learning task.

When you have met the requirements, you'll receive a certificate of completion from Orbis. This can be used as evidence for your required professional learning hours for renewal. If you're unable to meet these requirements, please contact Orbis to discuss.

“Orbis Maths was one of the most engaging and useful professional development training I have attended. I was able to make a difference back in my classroom in supporting my students to be more engaged in maths. The resources and guidance we received was amazing and the instructors were professional, engaging and supportive.”

Emily Farley, Paralowie School

Engaging.
Empowering.
Purposeful.
Collaborative.
Exemplary.



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