

Shirley Smith High School Vision and Values

Grow with us.

At Shirley Smith High School, teaching and learning is authentic, rigorous, and designed to maximise student agency. We align deep disciplinary knowledge and excellent pedagogical practice to ensure our learners are empowered to find their purpose, fulfil their potential, and shape their own futures.

Students at Shirley Smith High School are:

Curious

brave and open minded inquirers with a desire to know and understand

Connected

inclusive young people connected to each other, connected to their community and connected to Country

Learners

creative empowered learners with boundless potential for their futures and the future of our planet

Subject Details

Subject/s: Mathematics

Learning Area: STEM

Teacher/s: Benjamin Hobbs, Angela Cleland and Sujata Chaudhri

Learning Period: Semester 2, 2026

Engagement in Learning

In order to facilitate active engagement in their learning, students are expected to:

- Arrive prepared for their lessons, equipped with a fully charged chromebook, a notebook, a pen or pencil, and any other subject-specific materials that may be necessary.
- Independently make an effort to retrieve and complete any missed assignments or coursework due to absences or extracurricular activities during their own time.
- Embrace the principles of the school's Yindyamarra wellbeing framework by treading lightly. This involves taking moments to pause, authentically connecting with others, engaging in deep listening, thoughtful reflection, and considering the impact of their actions on others.

Learning and Assessment Policies

Please see the school website for policies regarding the submission of late work, extension requests for assessment tasks, and plagiarism and academic integrity.

Description of Learning

Unit overview:

This Year 8 Mathematics unit is designed to develop students' understanding of key mathematical concepts and skills aligned with the Australian Curriculum (V9). Through engaging activities and problem-solving tasks, students will build confidence in applying mathematics to real-world situations.

Students will deepen their understanding of geometry using 3 dimensions to locate and describe positions with coordinates using geometric software. They will also be able to identify conditions for congruency and similarity in shapes along with using algorithms they create to test for similarity and congruency. Students will learn to apply the properties of quadrilaterals using congruent triangles and angle properties to solve problems.

The unit also introduces Pythagoras' theorem where students will be able to determine unknown lengths of sides in right-angled triangles in practical applications. Students will be using appropriate metric units when solving measurement problems involving the perimeter and area of composite shapes along with solving problems involving volume and capacity of right prisms.

During term 4, students will be learning about probability and will be able to calculate the chance of an event happening along with probabilities of the combinations of 2 events using tables and diagrams, and determine the related probabilities to solve practical problems. They will also be using digital tools and simulations to conduct experiments on the probabilities of compound events.

Finally, students will finish the year by conducting statistical investigations. Students will be able to analyse and describe the distribution of data comparing the variation in the distribution of random samples of same and different sizes from a population along with calculating the measures of central tendency and range.

Unit learning outcomes:

By the end of this unit, students will demonstrate a level of achievement for the following standards:

- Uses appropriate metric units when solving measurement problems involving the perimeter and area of composite shapes, and volume of right prisms
- Uses Pythagoras' theorem to solve measurement problems involving unknown lengths of right-angle triangles
- Uses formulas to solve problems involving the area and circumference of circles
- Uses 3 dimensions to locate and describe position
- Identifies conditions for congruency and similarity in shapes and creates and tests algorithms designed to test for congruency and similarity
- Conducts statistical investigations and explains the implications of obtaining data through sampling
- Compares the variation in distributions of random samples of the same and different size from a given population with respect to shape, measures of central tendency and range
- Represents the possible combinations of 2 events with tables and diagrams, and determines related probabilities to solve practical problems
- Conducts experiments and simulations using digital tools to determine related probabilities of compound events

Assessment:

Task	Approximate Due Date
- Class work	Ongoing
- 3D Plotting Task	Week 1
- Geometry Assessment: Test and Algorithm group task	Week 4
- Pythagoras' Theorem Test	Week 6
- Measurement Activity	Week 10
- Probability assignment	Week 14
- Statistical Survey test	Week 17

Learning Experiences

Throughout the unit, students may have the opportunity to engage in the following learning experiences:

Competitions - Mathematics Competition and Mathematics Enrichment