YEAR 7 UNIT OUTLINE

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:	Mathematics	**Learning Area:**	STEM
Teachers:	Angela Cleland and Ben Hobbs	**Learning Period:**	Semester One, 2024

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:

Students will develop their understanding of numbers by representing them in different forms and investigating special numbers, including their importance for calculations. They will extend their knowledge to negative integers and develop effective mental strategies to solve problems with numbers. Students will further extend their knowledge to be able to compare and perform operations with decimals, fractions, percentages and ratios. These skills will be refined and applied to practical situations. Students will then apply these skills and implement successful strategies in the introduction to Algebra topic. They will use these strategies to represent situations and determine solutions by solving equations and formulas.

Unit learning outcomes:

By the end of this unit, students will demonstrate a level of achievement for the following standards:
- represent natural numbers in expanded form and as products of prime factors, using exponent notation.
- solve problems involving squares of numbers and square roots of perfect square numbers.
- solve problems involving addition and subtraction of integers.
- use all 4 operations in calculations involving positive fractions and decimals, choosing efficient calculation strategies.
- choose between equivalent representations of rational numbers and percentages to assist in calculations.
- use mathematical modelling to solve practical problems involving rational numbers, percentages and ratios, in financial and other applied contexts, justifying choices of representation.
- use algebraic expressions to represent situations, describe the relationships between variables from authentic data and substitute values into formulas to determine unknown values.
- solve linear equations with natural number solutions.
- create tables of values related to algebraic expressions and formulas, and describe the effect of variation.
- use coordinates to describe transformations of points in the plane.

Assessment:

Task	Approximate Due Date
- Class work	Ongoing
- Formative Assessment	Ongoing
- Numbers Topic Test	Week 4
- Decimals and Fractions In-class Task	Week 10
- Percentages and Ratios In-class Task	Week 14
- Algebra Test	Week 19
- Coordinate Geometry In-class Task	Week 21

Learning Experiences

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

Competitions - Mathematics Challenge and Mathematics Enrichment