

# Semester 1 Course Overview

Faculty: Maths

Subject: Maths

Year level: 8

## Course Outline

Mathematics curriculum is built around the three content strands: Number and Algebra, Measurement and Geometry, and Statistics and Probability. The proficiency strands of Understanding, Fluency, Problem Solving and Reasoning are an integral part of content across the curriculum. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed and further provide the language to build in the developmental aspects of the learning of mathematics.

Term 1	Term 2	
<b>Term 1: Integers/Lines, Shapes and Solids/Fractions, Decimals and Percentages</b>	<b>Term 2: Ratios and Rates and Algebra.</b>	
<p>Students have opportunities to develop understandings to solve everyday problems involving percentages. They identify conditions for the congruence of triangles and deduce the properties of quadrilaterals. Students use efficient mental and written strategies to carry out the four operations with integers.</p> <p><b>Number and place value</b></p> <p>Carry out the four operations with rational numbers and integers, using efficient mental and written strategies and appropriate digital technologies (ACMNA183)</p> <p><b>Geometric reasoning</b></p> <p>Establish properties of quadrilaterals using congruent triangles and angle properties, and solve related numerical problems using reasoning (ACMMG202)</p> <p><b>Real numbers</b></p> <p>Investigate terminating and recurring decimals (ACMNA184)</p> <p>Solve problems involving the use of percentages, including percentage increases and decreases, with and without digital technologies (ACMNA187)</p> <p><b>Money and financial mathematics</b></p> <p>Solve problems involving profit and loss, with and without digital technologies (ACMNA189)</p>	<p>Students will further develop and enhance their understandings of: By the end of Year 8, students solve everyday problems involving rates, ratios and percentages. They describe index laws and apply them to whole numbers. They make connections between expanding and factorising algebraic expressions. They simplify a variety of algebraic expressions. They solve linear equations and graph linear relationships on the Cartesian plane</p> <p><b>Real numbers</b></p> <p>Solve a range of problems involving rates and ratios, with and without digital technologies (ACMNA188)</p> <p><b>Patterns and algebra</b></p> <p>Extend and apply the distributive law to the expansion of algebraic expressions (ACMNA190)</p> <p>Factorise algebraic expressions by identifying numerical factors (ACMNA191)</p> <p>Simplify algebraic expressions involving the four operations (ACMNA192)</p> <p><b>Number and place value</b></p> <p>Use index notation with numbers to establish the index laws with positive integral indices and the zero index (ACMNA182)</p> <p><b>Linear and non-linear relationships</b></p> <p>Solve linear equations using algebraic and graphical techniques. Verify solutions by substitution (ACMNA194)</p>	
<b>Assessment:</b>	<b>Assessment:</b>	
<p><b>Examination 1.1 Examination 1</b></p> <p><b>Multiple Choice</b></p> <p><b>Short Response Exam</b></p> <p><b>Written</b></p> <p><b>Up to 70 minutes</b></p>	<p><b>PSMT 2</b></p> <p><b>Report</b></p> <p><b>Written Report (digital)</b></p> <p><b>Length: 400-600 words</b></p>	<p><b>Examination 3</b></p> <p><b>Multiple Choice</b></p> <p><b>Short Response Exam</b></p> <p><b>Written</b></p> <p><b>Up to 70 minutes</b></p>