

Year 8 – Mathematics 2022

TERM 1		
TIMING	UNIT OVERVIEW	ASSESSMENT
Weeks: 5	<p>Number and Algebraic Techniques</p> <p>Students review operations with directed numbers and learn about how this links in with algebraic terms. Students revise number patterns and pronumerals, and learn about addition and subtraction of like terms, multiplication, and division of pronumerals, expanding grouping symbols and factorisation. They apply algebra to real-life problems and review index notation and index laws.</p>	<p>Task Number: 1</p> <p>Nature of Task: In class written test</p> <p>Percentage: 50% of semester 1</p> <p>Week: 9</p>
Weeks: 3	<p>Equations</p> <p>Students learn how to solve simple equations by using inverse operations. They also solve equations with pronumerals on both sides and equations with grouping symbols. Students are also introduced to solving simple quadratic equations and explore how to solve real-world problems using equations.</p>	<p>Reported: Semester 1</p>
Weeks: 2	<p>Coordinate Geometry</p> <p>Students are introduced to straight line graphs and learn to graph straight lines, including lines parallel to the axes. Students use these lines to solve equations. Students are also introduced to non-linear graphs.</p>	

TERM 2

TIMING	UNIT OVERVIEW	ASSESSMENT
Weeks: 3	<p>Rates & Ratios</p> <p>Students learn about ratios, discover equivalent ratios, and use these to solve problems. They learn how to divide a quantity into a given ratio. They explore how ratio is used in scale drawings and other real-world applications. They explore rates and distance-time graphs.</p>	<p>Task Number: 2</p> <p>Nature of Task: Investigation</p> <p>Percentage: 50% of semester 1</p>
Weeks: 3	<p>Measurement</p> <p>Students learn to calculate the perimeter and area of plane shapes and learn the formulas to calculate the areas of special quadrilaterals. They learn the units of capacity and volume and calculate the volume of prisms. Students also learn how to measure time, add, and subtract times and calculate the time in different international time zones.</p>	<p>Week: 7</p> <p>Reported: Semester 1</p>
Weeks: 2.5	<p>Pythagoras' Theorem</p> <p>Students investigate right angled triangles and Pythagoras' theorem linking the length of the triangle sides. They use this theorem to calculate the length of the hypotenuse, the length of a shorter side and apply this knowledge to problems. They learn about Pythagorean triads and discover surds.</p>	
Weeks: 3	<p>Graphs</p> <p>Students learn to read, interpret, and draw picture graphs, column graphs, divided bar graphs, sector graphs (pie graphs), line graphs, conversion graphs and step graphs. They also investigate how graphs can be unusually drawn and discover how these can be misleading.</p>	

TERM 3

TIMING	UNIT OVERVIEW	ASSESSMENT
Weeks: 2.5	Statistics Students learn how to collect data including sampling methods. They learn to analyse the data by calculating the mean, mode, median and range. They investigate statistical graphs including grouped data graphs and back-to-back stem-and-leaf plots.	Task Number: 3 Nature of Task: Online Task Percentage: 50% of semester 2
Weeks: 4	Percentages Students review prior knowledge of percentages and build on this, learning how to do harder conversions, find a percentage of a quantity, calculate percentage change and percentage composition. They apply their knowledge of percentages to real-life situations including calculating GST, profit and loss and finding a quantity when a percentage is known, via the unitary method.	Week: 7 Reported: Semester 2
Weeks: 2	Probability Students learn how to describe your chances and find the probability of an event. They learn about complementary events and use Venn Diagrams and Two-Way Tables to solve probability problems.	

TERM 4

TIMING	UNIT OVERVIEW	ASSESSMENT
<p>Weeks: 2.5</p>	<p>Circles & Cylinders</p> <p>Students learn to identify the parts of the circle and calculate the circumference and area of a circle. They learn to calculate the area of a sector and the volume of a cylinder.</p>	<p>Task Number: 4</p> <p>Nature of Task: In Class Written Test</p> <p>Percentage: 50% of semester 2</p>
<p>Weeks: 3</p>	<p>Reasoning in Geometry</p> <p>Students learn about adjacent angles, angles at a point, vertically opposite angles, and the different types of angles in parallel lines. They learn how to calculate the angle sum of triangles and define isosceles and equilateral triangles. They learn how to calculate the angle sum of quadrilaterals and find missing angles.</p>	<p>Week: 5</p> <p>Reported: Semester 2</p>
<p>Weeks: 3</p>	<p>Congruence and Transformation</p> <p>Students learn about congruence and transformations, including tessellations. They learn about congruent figures and the minimum conditions required for triangles to be classified as congruent. They learn to apply the congruency tests and use these rules to calculate the missing sides and angles of congruent triangles. They also deduce the properties of special quadrilaterals.</p>	