

## Year 10 - Mathematics 5.2 Course 2022

TERM 1		
TIMING	UNIT OVERVIEW	ASSESSMENT
Weeks: 3	<b>Surface Area and Volume</b> Students learn how to calculate the area of composite shapes. They learn how to calculate the surface area of prisms, cylinders, and composite solids. They learn how to calculate the volume of prisms and cylinders.	Task Number: 1  Nature of Task: Investigation
Weeks: 3	<b>Algebra</b> Students review index laws and working with algebraic expressions. They learn to add, subtract, multiply and divide algebraic fractions. Students expand simple expressions and binomial products and factorise simple and quadratic expressions.	Percentage: 20%  Week: 6
Weeks: 3	<b>Graphing Lines</b> Students learn to calculate the length, midpoint and gradient of an interval and review parallel and perpendicular lines. They learn how to graph linear equations and write the equation of a line using the gradient-intercept formula and the general formula. Students learn to find the equations of lines and parallel and perpendicular lines.	Reported: Semester 1
TERM 2		
TIMING	UNIT OVERVIEW	ASSESSMENT
Weeks: 4	<b>Equations and Inequations</b> Students review equations and learn about equations involving algebraic fractions and quadratic equations. Students solve problems involving equations and utilise formulas. Students graph inequalities on a number line and solve them.	Task Number: 2  Nature of Task: In class written task
Weeks: 3	<b>Trigonometry</b> Students revise Pythagoras' theorem and trigonometric ratios. They learn to calculate the value of an unknown side or unknown angle and apply their knowledge to angles of elevation and depression as well as problems involving bearings.	Percentage: 25%  Week: 4
Weeks: 3	<b>Interest and Depreciation</b> Students learn how to calculate income and income tax. They learn about simple and compound interest and the compound interest formula. They also learn about term payments and depreciation.	Reported: Semester 1

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TERM 3		
TIMING	UNIT OVERVIEW	ASSESSMENT
Weeks: 3	<p><b>Probability</b> Students learn to calculate relative frequency and use Venn Diagrams, Two-Way Tables and Tree diagrams to solve probability problems both with and without replacement. Students learn about dependent and independent events and conditional probability.</p>	Task Number: 3  Nature of Task: Online Task
Weeks: 2	<p><b>Simultaneous Equations</b> Students learn to solve simultaneous equations graphically, as well as algebraically, using the elimination method and the substitution method. Students also solve problems involving simultaneous equations.</p>	Percentage: 25%  Week: 8
Weeks: 4	<p><b>Comparing Data</b> Students learn about the shape of a frequency distribution and how to calculate quartiles and the interquartile range. Students learn to read, interpret, and draw box plots, parallel box plots, scatterplots and bivariate data involving time and become familiar with statistics in the media.</p>	Reported: Semester 2
TERM 4		
TIMING	UNIT OVERVIEW	ASSESSMENT
Weeks: 4	<p><b>Geometry</b> Students learn how to calculate the interior and exterior angle sum of a polygon. They use congruent triangle proofs to prove properties of triangles and quadrilaterals. They investigate similar figures, find unknown sides in similar figures, and conduct tests for similar triangles.</p>	Task Number: 4  Nature of Task: In class written task
Weeks: 3	<p><b>Graphing Curves</b> Students learn the difference between direct and inverse proportion. They learn to read, interpret, and draw conversion graphs, the parabolic curve, the exponential curve, and the circle and learn to identify graphs, linking them to their correct equations.</p>	Percentage: 30%  Week: 4
Weeks: 4	<p><b>Preparation for Year 11</b> Students prepare for Year 11 Mathematics courses Numeracy and Standard Mathematics.</p>	Reported: Semester 2

## Year 10 - Mathematics 5.3 Course 2022

TERM 1		
TIMING	UNIT OVERVIEW	ASSESSMENT
Weeks: 3	<p><b>Surface Area and Volume</b></p> <p>Students learn how to calculate the surface area of prisms, cylinders, pyramids, cones, spheres, and composite solids. They learn how to calculate the volume of prisms, cylinders, pyramids, cones, spheres, and composite solids. They also learn how to calculate the area, surface area and volume of similar solids.</p>	<p>Task Number: 1</p> <p>Nature of Task: Investigation</p>
Weeks: 3	<p><b>Products and Factors</b></p> <p>Students review index laws including fractional indices. They add, subtract, multiply and divide algebraic fractions. Students expand expressions including expanding binomial products. Students learn to factorise expressions including special binomial products, quadratic expressions both monic and non-monic, mixed factorisations and algebraic fractions.</p>	<p>Percentage: 20%</p> <p>Week: 6</p>
Weeks: 3	<p><b>Graphing Lines</b></p> <p>Students learn to calculate the length, midpoint and gradient of an interval and review parallel and perpendicular lines. They learn how to graph linear equations and write the equation of a line using the gradient-intercept formula and the general formula. Students use the point-gradient formula and learn to find the equations of lines and parallel and perpendicular lines. They solve coordinate geometry problems.</p>	<p>Reported: Semester 1</p>
TERM 2		
TIMING	UNIT OVERVIEW	ASSESSMENT
Weeks: 4	<p><b>Surds</b></p> <p>Students investigate surds, including how to simplify, add, subtract, multiply and divide surds. Students expand binomial products including surds and learn how to rationalise the denominator.</p>	<p>Task Number: 2</p> <p>Nature of Task: In class written task</p>
Weeks: 3	<p><b>Equations and Logarithms</b></p> <p>Students review equations and learn about equations involving algebraic fractions, quadratic equations, and simple cubic equations. Students solve problems involving equations and formulas and learn how to change the subject of the formula. Students solve inequalities and graph on a number line. Students learn about logarithms and the laws associated with them. Students work with exponential and logarithmic equations.</p>	<p>Percentage: 25%</p> <p>Week: 3</p>
Weeks: 3	<p><b>Further Trigonometry</b></p> <p>Students review right-angle trigonometry and bearings. They investigate Pythagoras' Theorem and trigonometry in 3D shapes. Students learn about complementary relations, exact ratios, and trigonometric equations and functions. They calculate the size of sides and angles and solve problems using the sine rule and the cosine rule and calculate the areas of triangles.</p>	<p>Reported: Semester 1</p>

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TERM 3		
TIMING	UNIT OVERVIEW	ASSESSMENT
Weeks: 2	<p><b>Interest and Depreciation</b></p> <p>Students learn how to calculate income and income tax. They learn about simple and compound interest including the compound interest formula, term payments and depreciation.</p>	<p>Task Number: 3</p> <p>Nature of Task: Online Task</p> <p>Percentage: 25%</p> <p>Week: 8</p> <p>Reported: Semester 2</p>
Weeks: 2	<p><b>Probability</b></p> <p>Students learn to calculate relative frequency and use Venn Diagrams, Two-Way Tables and Tree diagrams to solve probability problems both with and without replacement. Students learn about dependent and independent events and conditional probability.</p>	
Weeks: 2	<p><b>Simultaneous Equations</b></p> <p>Students learn to solve simultaneous equations graphically, as well as algebraically, using the elimination method and the substitution method. Students also solve problems involving simultaneous equations.</p>	
Weeks: 4	<p><b>Comparing Data</b></p> <p>Students learn about the shape of a frequency distribution and how to calculate quartiles and the interquartile range. They learn about standard deviation and comparing the mean and the standard deviation of data. Students learn to read, interpret, and draw box plots, parallel box plots, lines of best fit and scatterplots. Students investigate bivariate data involving time, become familiar with statistics in the media and investigate statistical studies.</p>	
TERM 4		
	UNIT OVERVIEW	ASSESSMENT
Weeks: 4	<p><b>Quadratic Equations and the Parabola</b></p> <p>Students learn to solve quadratic equations by factorisation and by using the completing the square method and the quadratic formula. They learn to complete mixed problems including higher-order quadratic equations and problems involving quadratic equations. Students learn to graph parabolas and learn how to calculate the axis of symmetry and the vertex of a parabola. They also solve non-linear simultaneous equations.</p>	<p>Task Number: 4</p> <p>Nature of Task: In class written task</p> <p>Percentage: 30%</p> <p>Week: 4</p> <p>Reported: Semester 2</p>
Weeks: 4.5	<p><b>Graphing Curves</b></p> <p>Students learn about direct and inverse proportion and learn how to draw conversion graphs, distance-time graphs, and graphs of variable change. They investigate how to identify and draw parabolas, cubic curves, power curves, hyperbolas, expectational curves and circles and write their equations.</p>	
Weeks: 2.5	<p><b>Geometry</b></p> <p>Students learn how to calculate the interior and exterior angle sums of polygons. They use congruent triangle proofs and tests for quadrilaterals to prove properties of triangles and quadrilaterals and learn how to write formal geometrical proofs. They investigate similar figures, find unknown sides in similar figures, conduct tests for similar triangles and write proofs for similar triangles.</p>	