

Curriculum Long Term Planning Overview

Key Stage 4

Subject Area: Maths

Academic Year: 2018-19

Year	Study Modules	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Year 9 Higher	Study Modules	<p>Calculations</p> <p>Order integers, decimals and negatives</p> <p>Rounding to decimal places and significant figures</p> <p>Estimation by rounding to one significant figure</p> <p>Adding and subtracting decimals</p> <p>Adding and subtracting negative numbers</p> <p>Multiplying and dividing negative numbers</p> <p>Multiplying decimals</p> <p>Dividing decimals</p> <p>Manipulation of decimals (using one calculation to find the answer to another)</p> <p>Order of operations (BIDMAS)</p> <p>Expressions</p> <p>Simplify expressions by collecting like terms</p> <p>Simplify expressions by collecting like terms</p> <p>Index laws (addition, subtraction and multiplication)</p> <p>Expanding and</p>	<p>Expressions</p> <p>Simplify expressions by collecting like terms</p> <p>Simplify expressions by collecting like terms</p> <p>Index laws (addition, subtraction and multiplication)</p> <p>Expanding and factorising single brackets</p> <p>Expand two single brackets and simplify</p> <p>Simplifying algebraic fractions</p> <p>Adding and subtracting algebraic fractions</p> <p>Multiplying and dividing algebraic fractions</p> <p>Angles and Polygons</p> <p>Angles around a point, on a straight line and opposite angles</p> <p>Angles in parallel lines (alt, corr and co-int angles)</p> <p>Solve problems involving all of the above (providing reasons)</p> <p>Bearings</p> <p>Derive and use angles in triangles and</p>	<p>Angles and Polygons</p> <p>Angles around a point, on a straight line and opposite angles</p> <p>Angles in parallel lines (alt, corr and co-int angles)</p> <p>Solve problems involving all of the above (providing reasons)</p> <p>Bearings</p> <p>Derive and use angles in triangles and quadrilaterals</p> <p>Angles in special triangles</p> <p>Understand similarity and use scale factors</p> <p>Recognise and use congruence (SSS, SAS, ASA, RHS)</p> <p>Solve problems involving congruence</p> <p>Find and use scale factors for area and volume from the linear scale factor</p> <p>Finding exterior angles in polygons</p> <p>Finding interior angles in polygons (using angles on a straight line)</p> <p>Deduce the sum of</p>	<p>Fractions, Decimals and Percentages</p> <p>Equivalent and simplifying fractions</p> <p>Fractions of amounts</p> <p>Percentages of amounts</p> <p>Adding and subtracting fractions and mixed numbers</p> <p>Multiplying and dividing fractions and mixed numbers</p> <p>Converting between fractions, decimals and percentages</p> <p>Ordering fractions (and mixed numbers), decimals and percentages</p> <p>Converting recurring decimals to fractions</p> <p>Converting between recurring decimal fractions</p> <p>Formulae and Functions</p> <p>Writing formulae from sentences</p> <p>Substitution (positive and negative numbers)</p> <p>Changing the subject of formulae</p>	<p>Formulae and Functions</p> <p>Writing formulae from sentences</p> <p>Substitution (positive and negative numbers)</p> <p>Changing the subject of formulae</p> <p>Distinguishing between expressions, equations, inequalities, formulae and identities</p> <p>Expanding and factorising quadratics (no coefficient of x)</p> <p>Difference of two squares</p> <p>Factorising quadratics with a coefficient of x</p> <p>Simplifying algebraic fractions involving quadratics</p> <p>Working in 2D</p> <p>Scale drawings – finding distances on a map/in real life</p> <p>Bearings on a map</p> <p>Area of compound 2D shapes</p> <p>Translation and reflection</p> <p>Reflection in lines such</p>	<p>Probability</p> <p>Probability experiments and relative frequency</p> <p>Theoretical probability</p> <p>Compare experimental to theoretical probability</p> <p>Mutually exclusive events</p> <p>Sample space diagrams</p> <p>Estimation and Approximation</p> <p>Estimating by rounding to a given degree of accuracy</p> <p>Use estimations to check answers and adjust place values</p> <p>Using a calculator (including memory)</p> <p>Conversions in metric units</p> <p>Compound measures (SDT, DMV)</p> <p>Upper and lower bounds</p>

		<p>factorising single brackets</p> <p>Expand two single brackets and simplify</p> <p>Simplifying algebraic fractions</p> <p>Adding and subtracting algebraic fractions</p> <p>Multiplying and dividing algebraic fractions</p>	<p>quadrilaterals</p> <p>Angles in special triangles</p> <p>Understand similarity and use scale factors</p> <p>Recognise and use congruence (SSS, SAS, ASA, RHS)</p> <p>Solve problems involving congruence</p> <p>Find and use scale factors for area and volume from the linear scale factor</p> <p>Finding exterior angles in polygons</p> <p>Finding interior angles in polygons (using angles on a straight line)</p> <p>Deduce the sum of angles of any polygon and use $(n-2)*180$</p> <p>Solve problems involving angles in polygons</p>	<p>angles of any polygon and use $(n-2)*180$</p> <p>Handling Data 1</p> <p>Interpreting bar charts and pie charts</p> <p>Drawing bar charts and pie charts</p> <p>Finding the mean, mode and median</p> <p>Finding the mean, mode and median from a frequency table</p> <p>Finding the range and interquartile range</p> <p>Identify outliers and explain their effect on averages/ranges</p> <p>Construct and interpret histograms with equal and unequal class widths</p> <p>Fractions, Decimals and Percentages</p> <p>Equivalent and simplifying fractions</p> <p>Fractions of amounts</p> <p>Percentages of amounts</p> <p>Adding and subtracting fractions and mixed numbers</p> <p>Multiplying and dividing fractions and mixed numbers</p> <p>Converting between fractions, decimals and percentages</p> <p>Ordering fractions (and mixed numbers),</p>	<p>Distinguishing between expressions, equations, inequalities, formulae and identities</p> <p>Expanding and factorising quadratics (no coefficient of x)</p> <p>Difference of two squares</p> <p>Factorising quadratics with a coefficient of x</p> <p>Simplifying algebraic fractions involving quadratics</p>	<p>as $y=-2$, $y=x$ etc</p> <p>Rotation</p> <p>Enlargement from a point (integer and fractional)</p> <p>Enlargement (fractional and negative)</p> <p>Combinations of transformations</p>	
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				decimals and percentages Converting recurring decimals to fractions Converting between recurring decimal fractions			
	Assessment	Open book end of topic assessment	Closed book end of term test	Open book end of topic assessment	Open book end of topic assessment	Open book end of topic assessment	Closed book end of term test

Year	Study Modules	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Year 10 Higher	Study Modules	<p>Equations and Inequalities</p> <p>Solving two step equations (brackets, negatives)</p> <p>Solving equations involving fractions (and implied brackets)</p> <p>Solving equations with the unknown on both sides</p> <p>Solving harder equations involving fractions</p> <p>Forming and solving equations</p> <p>Solving quadratics with/without coefficient of x^2 by factorising</p> <p>Completing the square</p> <p>Quadratic formula</p> <p>Forming and solving quadratic equations</p> <p>Simultaneous equations (elimination, substitution and leading to quadratics)</p> <p>Forming and solving simultaneous equations</p> <p>Solving equations using trial and improvement</p>	<p>Circles and Constructions</p> <p>Circumference and area of circles and composite shapes involving parts of circles</p> <p>Arc length and area of sectors</p> <p>Problems involving sectors</p> <p>Circle theorems</p> <p>Proof of circle theorems</p> <p>Construction</p> <p>Angle and line bisectors (of a line, from a point to a line, from a point on a line)</p> <p>Triangles and quadrilaterals, constructing an angle of 60 degrees</p> <p>Loci (from points, lines, around shapes, change of radius and rolling shapes etc)</p> <p>Ratio and Proportion</p> <p>Proportions of an amount as fractions or percentages</p> <p>Percentage increases and decreases using multiplication</p> <p>Finding original value</p> <p>Divide a given quantity into parts</p>	<p>Graph 1</p> <p>Equation of a straight line</p> <p>Linear and quadratic functions</p> <p>Properties of quadratic functions</p> <p>Kinematic graphs</p> <p>Iteration</p> <p>Solving inequalities</p> <p>Graphing inequalities</p> <p>Working in 3D</p> <p>Draw and interpret plans and elevation of 3D shapes</p> <p>Reasoning and problem solving</p> <p>Volume of a prism</p> <p>Volume and surface area</p>	<p>Handling Data 2</p> <p>Calculating averages and spread</p> <p>Box plots and cumulative frequency graphs</p> <p>Drawing and interpreting box plots and cumulative frequency graphs</p> <p>Time series, discuss any short term trends, seasonal variation and any longer term trends</p> <p>Histograms</p> <p>Calculations 2</p> <p>Perform calculations involving roots and indices, including negative and fractional indices</p> <p>Perform calculations involving fractions and surds</p> <p>Simplify and manipulate surds</p> <p>Work with numbers in standard form</p>	<p>Exam Preparation</p> <p>Graphs 2</p> <p>Recognise and draw graphs of cubic and reciprocal functions</p> <p>Recognise and draw graphs of exponential functions and trigonometric functions</p> <p>Recognise and sketch translation and reflections of graphs</p> <p>Real-life graphs</p> <p>Gradients and areas under graphs</p> <p>Equation of a circle and find the tangent to a circle at a point</p>	<p>Graphs 2</p> <p>Recognise and draw graphs of cubic and reciprocal functions</p> <p>Recognise and draw graphs of exponential functions and trigonometric functions</p> <p>Recognise and sketch translation and reflections of graphs</p> <p>Real-life graphs</p> <p>Gradients and areas under graphs</p> <p>Equation of a circle and find the tangent to a circle at a point</p>

			<p>Use scale factors, scale diagrams and maps</p> <p>Factors, Multiples and Primes</p> <p>Understanding factors and multiples, HCF and LCM</p> <p>Working out prime factor decomposition</p> <p>Estimate the square or cube root of an integer</p> <p>Find square and cube roots of numbers and apply law of indices</p> <p>Reasoning and problem solving</p>				
	Assessment	Open book end of topic assessment	Closed book end of term test	Open book end of topic assessment	Open book end of topic assessment	Open book end of topic assessment	Closed book end of term test

Year	Study Modules	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Year 11 Higher	Study Modules	<p>Pythagoras, Trigonometry and Vectors</p> <p>Use Pythagoras' theorem</p> <p>Use trigonometric ratio to find missing angles and sides in triangles</p> <p>Find exact values of sin and cos for key angles</p> <p>Use the sin and cosine rules to find missing length and angles</p> <p>Use the sin formula for the area of a triangle</p> <p>Calculate with vectors and use them in geometric proofs</p> <p>Combined Events</p> <p>Use venn diagrams to represent sets</p> <p>Use a possibility space to represent the outcomes of two experiments and calculate probabilities</p> <p>Use tree diagrams to show outcomes of two experiments and calculate probabilities</p> <p>Calculate conditional probability</p>	<p>Sequences</p> <p>Find terms of linear sequences using terms or position to term rule</p> <p>Find terms of quadratic sequences using terms or position to term rule</p> <p>Recognise special types of sequences and find terms</p>	Year 11 GCSE Exam Revision	Year 11 GCSE Exam Revision	Year 11 GCSE Exam Revision	
		Assessment	Open book end of topic assessment	Closed book end of term test	Open book end of topic assessment	Open book end of topic assessment	Open book end of topic assessment