

## Year 9 Curriculum

Autumn 1	Straight Line Graphs	Booklet 1 – Straight Line Graphs	<ul style="list-style-type: none"> <li>• Lines parallel to the axes, <math>y = x</math> and <math>y = -x</math></li> <li>• Using tables of values</li> <li>• Compare gradients</li> <li>• Compare intercepts</li> <li>• Understand and use <math>y = mx + c</math></li> <li>• Write an equation in the form <math>y = mx + c</math> (H)</li> <li>• Find the equation of a line from a graph</li> </ul>
		Booklet 2 – Real-Life Graphs	<ul style="list-style-type: none"> <li>• Interpret gradient and intercepts of real-life graphs</li> <li>• Model real-life graphs involving inverse proportion (H)</li> <li>• Explore perpendicular lines (H)</li> </ul>
	Forming and Solving Equations	Booklet 1 – Solving Equations and Inequalities	<ul style="list-style-type: none"> <li>• Solve one step and two step equations and inequalities</li> <li>• Solve one step and two step equations and inequalities with brackets</li> <li>• Inequalities with negative numbers</li> <li>• Solve equations with unknowns on both sides</li> <li>• Solve inequalities with unknowns on both sides</li> <li>• Solving equations and inequalities in context</li> </ul>
		Booklet 2 - Substitution	<ul style="list-style-type: none"> <li>• Substituting into formulae and equations</li> </ul>
		Booklet 3 – Rearranging Formulae	<ul style="list-style-type: none"> <li>• Rearrange formulae (one-step)</li> <li>• Rearrange formulae (two-step)</li> <li>• Rearrange complex formulae including brackets and squares (H)</li> </ul>
	Algebraic Manipulation		<ul style="list-style-type: none"> <li>• The importance of ‘Show That’</li> <li>• Expanding a pair of binomials</li> <li>• Factorising into a single bracket</li> <li>• Factorising into double brackets (H)</li> <li>• Expand triple brackets (H)</li> </ul>
	Half Term Assessment		

Autumn 2	Three-Dimensional Shapes	Booklet 1 – Nets, Plans and Elevations	<ul style="list-style-type: none"> <li>• Know names of 2D and 3D shapes</li> <li>• Recognise prisms</li> <li>• Accurate nets of cuboids and other 3D shapes</li> <li>• Sketch and recognise nets of cuboids and other 3D shapes</li> <li>• Plans and elevations</li> </ul>
		Booklet 2 – Surface Area	<ul style="list-style-type: none"> <li>• Find area of 2D shapes</li> <li>• Surface area of cubes and cuboids</li> <li>• Surface area of triangular prisms</li> <li>• Surface area of a cylinder</li> </ul>
		Booklet 3 - Volume	<ul style="list-style-type: none"> <li>• Volume of cubes and cuboids</li> <li>• Volume of other 3D shapes – prisms and cylinders</li> <li>• Volume of cones, pyramids and spheres (H)</li> </ul>
	Constructions and Congruency	Booklet 1 – Loci	<ul style="list-style-type: none"> <li>• Draw and measure angles</li> <li>• Construct and interpret scale drawings</li> <li>• Locus of a distance from a point</li> <li>• Locus of a distance from a straight line/shape</li> <li>• Locus equidistant from two points</li> <li>• Locus of distance from two lines</li> </ul>
		Booklet 2 - Constructions	<ul style="list-style-type: none"> <li>• Construct a perpendicular bisector</li> <li>• Construct a perpendicular from a point</li> <li>• Construct a perpendicular to a point</li> <li>• Construct an angle bisector</li> <li>• Construct triangles from given information</li> </ul>
		Booklet 3 - Congruency	<ul style="list-style-type: none"> <li>• Identify congruent figures</li> <li>• Explore and identify congruent triangles</li> </ul>
Half Term Assessment			

Spring 1	Number	Booklet 1 – Different Types of Number	<ul style="list-style-type: none"> <li>• Integers, Real and Rational numbers</li> <li>• Work with directed number</li> <li>• Solve problems with integers</li> <li>• Solve problems with decimals</li> <li>• HCF and LCM</li> <li>• Numbers in standard form</li> </ul>
		Booklet 2 - Fractions	<ul style="list-style-type: none"> <li>• Adding and subtracting fractions</li> <li>• Multiplying and dividing fractions</li> <li>• Solving problems with fractions</li> </ul>
		Booklet 3 – Introduction to Surds	<ul style="list-style-type: none"> <li>• Understand and use surds (H)</li> </ul>
	Using Percentages		<ul style="list-style-type: none"> <li>• Revisit Fraction, Decimal and Percentage Equivalence</li> <li>• Calculate Percentage increase and decrease</li> <li>• Express a change as a percentage</li> <li>• Solve ‘reverse’ percentage problems</li> <li>• Recognise and solve percentage problems (non-calculator)</li> <li>• Recognise and solve percentage problems (calculator)</li> <li>• Solve problems with repeated percentage change (H)</li> </ul>
	Maths and Money	Booklet 1 – Simple and Compound Interest	<ul style="list-style-type: none"> <li>• Solve problems with bills and bank statements</li> <li>• Calculate simple interest</li> <li>• Calculate compound interest</li> </ul>
		Booklet 2 – Money Problems	<ul style="list-style-type: none"> <li>• Solve problems with VAT</li> <li>• Calculate wages and taxes</li> <li>• Solve problems with exchange rates</li> <li>• Solve unit pricing problems</li> </ul>
Half Term Assessment			

Spring 2	Angles		<ul style="list-style-type: none"> <li>• Angles in parallel lines</li> <li>• Solving angle problems (using chains of reasoning)</li> <li>• Angles problems with algebra</li> <li>• Link constructions and geometrical reasoning (H)</li> </ul>
	Rotation and Translation	Booklet 1 - Rotation	<ul style="list-style-type: none"> <li>• Identify the order of rotational symmetry of a shape</li> <li>• Compare and contrast rotational symmetry with line symmetry</li> <li>• Rotate a shape about a point on a shape</li> <li>• Rotate a shape about a point not on a shape</li> <li>• Compare rotation and reflection of shapes</li> </ul>
		Booklet 2 - Translation	<ul style="list-style-type: none"> <li>• Translate points and shapes by a given vector</li> <li>• Find the result of a series of transformations (H)</li> </ul>
	Pythagoras' & Trigonometry	Booklet 1 – Pythagoras' Theorem	<ul style="list-style-type: none"> <li>• Squares and square roots</li> <li>• Identify the hypotenuse of a right-angled triangle</li> <li>• Determine whether a triangle is right-angled</li> <li>• Calculate the hypotenuse of a right-angled triangle</li> <li>• Calculate missing sides in a right-angled triangle</li> <li>• Use Pythagoras' theorem on coordinate axes</li> <li>• Proof of Pythagoras' Theorem</li> </ul>
		Booklet 2 – Pythagoras' Theorem in 3D Shapes (Higher Only)	<ul style="list-style-type: none"> <li>• Use Pythagoras' Theorem in 3D shapes (H)</li> </ul>
		Booklet 3 – Trigonometry in Right Angled Triangles	<ul style="list-style-type: none"> <li>• Use SOHCAHTOA to find missing sides</li> <li>• Use SOHCAHTOA to find missing angles</li> </ul>
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Summer 1	Enlargement & Similarity	Booklet 1 – Enlargement	<ul style="list-style-type: none"> <li>• Recognise enlargement and similarity</li> <li>• Enlarge a shape by a positive integer scale factor</li> <li>• Enlarge a shape by a positive integer scale factor from a point</li> <li>• Enlarge a shape by a positive fractional scale factor</li> <li>• Enlarge a shape by a negative scale factor (H)</li> </ul>
		Booklet 2 – Similar Shapes	<ul style="list-style-type: none"> <li>• Work out missing sides and angles in a pair of given similar shapes</li> <li>• Solve problems with similar triangles (H)</li> <li>• Explore ratios in right-angled triangles (H)</li> </ul>
	Solving Ratio & Proportion Problems	Booklet 1 – Proportion	<ul style="list-style-type: none"> <li>• Solve problems with direct proportion</li> <li>• Direct proportion and conversion graphs</li> <li>• Solve problems with inverse proportion</li> <li>• Graphs of inverse relationships (H)</li> </ul>
		Booklet 2 – Ratio Problems & Best Buys	<ul style="list-style-type: none"> <li>• Solve ratio problems given the whole or part</li> <li>• Solve ‘best buy’ problems</li> <li>• Solve problems with ratio and algebra (H)</li> </ul>
	Rates		<ul style="list-style-type: none"> <li>• Solve speed, distance and time problems without a calculator</li> <li>• Solve speed, distance and time problems with a calculator</li> <li>• Use distance/time graphs</li> <li>• Solve problems with density, mass and volume</li> <li>• Solve flow problems and their graphs</li> <li>• Rates of change and their units</li> <li>• Convert compound units (H)</li> </ul>
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Summer 2	Probability	Booklet 1 – Probability	<ul style="list-style-type: none"> <li>• Single Event Probability (R)</li> <li>• Relative frequency – include convergence</li> <li>• Expected outcomes</li> <li>• Independent events</li> <li>• Use diagrams to work out probabilities – two way tables, frequency trees, venn diagrams</li> </ul>
		Booklet 2 – Tree Diagrams	<ul style="list-style-type: none"> <li>• Use tree diagrams (H)</li> <li>• Use tree diagrams to solve ‘without replacement’ problems (H)</li> </ul>
	Algebraic Representation	Booklet 1 – Other Algebraic Graphs	<ul style="list-style-type: none"> <li>• Draw and interpret quadratic graphs</li> <li>• Interpret graphs, including reciprocal</li> </ul>
		Booklet 2 – Graphs of Simultaneous Equations	<ul style="list-style-type: none"> <li>• Investigate graphs of simultaneous equations (H)</li> </ul>
		Booklet 3 – Graphs of Inequalities	<ul style="list-style-type: none"> <li>• Represent inequalities</li> </ul>
	Data	Booklet 1 – Cumulative Frequency	<ul style="list-style-type: none"> <li>• Construct and interpret cumulative frequency diagrams</li> <li>• Use cumulative frequency diagrams to find measures</li> </ul>
		Booklet 2 – Box Plots	<ul style="list-style-type: none"> <li>• Construct and interpret box plots</li> <li>• Compare distributions using box plots (H)</li> </ul>
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