

Maths Curriculum Overview

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
5	<p><u>Number and Place Value</u></p> <p>Numbers to at least 1 million. Negative numbers. Rounding to nearest 10, 100, 1000. Roman Numerals.</p> <p><u>Addition and Subtraction</u></p> <p>Use column addition and subtraction. Solve problems.</p> <p><u>Multiplication & Division</u></p> <p>Prime numbers. Square and cube numbers. Factors and multiples. Multiply a number (up to 4 digits) by a one or two digit</p>	<p><u>Multiplication & Division</u></p> <p>Multiply and divide by 10,100 and 1000. Multiply a number (up to 4 digits) by a one or two digit number. Divide a number by a one digit number. Solve problems.</p> <p><u>Fractions, Decimals and Percentages.</u></p> <p>Equivalent fractions. Improper fractions and mixed numbers. Order fractions (denominators multiples of one another). Add and subtract fractions (denominators</p>	<p><u>Fractions, Decimals and Percentages.</u></p> <p>Percentages. Multiply fractions by whole numbers. Round decimals to nearest integer. Solve problems with fractions and percentages.</p>	<p><u>Measurement</u></p> <p>Convert between units. Perimeter. Area. Volume. Solve problems involving measures.</p> <p><u>Geometry Properties</u></p> <p>Identify 2D and 3D shapes. Acute, obtuse and reflex angles. Measure and draw angles. Angles at a point. Angles on a straight line. Properties of rectangles. Regular and Irregular polygons.</p>	<p><u>Geometry Position</u></p> <p>Lines of symmetry Reflection. Translation.</p>	<p><u>Statistics</u></p> <p>Time and timetables. Bar charts Line graphs</p>

	number.	multiples of one another).				
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Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
6	<p><u>Place Value</u></p> <p>Numbers up to ten million. Round to nearest integer, powers of 10 and decimal places. Negative numbers.</p> <p><u>The Four Operations</u></p> <p>Add and subtract integers and decimals. Long Multiplication. Division of a number by a two-digit number (remainders as decimals). Multi-step problems including inverse operations.</p>	<p><u>Fractions, Decimals and Percentages.</u></p> <p>Compare and order decimals. Multiply and divide a decimal by an integer. Calculate percentages. Fractions – use four operations. Convert between fractions, decimals and percentages.</p> <p><u>Ratio</u></p> <p>Recipes. Simplify a ratio. Divide a quantity by a ratio.</p>	<p><u>Measurement</u></p> <p>Perimeter Area – rectangle, parallelogram, triangles and compound shapes. Volume – compound cuboids.</p> <p><u>Geometry</u></p> <p>Draw 2-D shapes using given dimensions and angles. Nets of 3D shapes. Classify shapes. Accurately draw shapes. Angles in triangles, quadrilaterals. Angles around a point and on straight line.</p>	<p><u>Statistics</u></p> <p>Line graphs Pie charts. Mean.</p>	<p>Investigations and project work.</p>	<p>Investigations and project work.</p>

	<p>Highest common factors.</p> <p>Lowest common multiples.</p> <p>Check calculations using approximations.</p> <p>BIDMAS</p> <p>Multi-step problems.</p>		<p>Name parts of circles.</p>			
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Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
7	<p><u>Numbers and place value</u></p> <p>Numbers up to one billion.</p> <p>Order positive and negative integers.</p> <p>Order decimals.</p> <p>Use the symbols =, ≠, <, >, ≤,</p> <p>Round numbers to decimal places.</p> <p>Round numbers to significant figures.</p> <p><u>Calculations</u></p> <p>Use formal written</p>	<p><u>Fractions, Decimals and Percentages</u></p> <p>Use the four operations for proper and improper fractions.</p> <p>Calculate percentages and fractions of amounts.</p> <p>Percentage change.</p> <p>Percentage increase and decrease.</p> <p>Order fractions.</p> <p>Convert between fractions, decimals and percentages.</p>	<p><u>Algebra</u></p> <p>Substitution.</p> <p>Simplify by collecting like terms.</p> <p>Solve equations.</p> <p>Plot linear graphs and understand the equation $y = mx + c$</p> <p>Linear sequences.</p>	<p><u>Measurement</u></p> <p>Solve problems involving perimeter and area of triangles, parallelograms, trapezium.</p> <p>Calculate the area and circumference of a circle.</p>	<p><u>Geometry Properties</u></p> <p>Angles at a point, angles on a straight line, vertically opposite angles.</p> <p>Angles within parallel lines.</p> <p>Pythagoras' theorem.</p> <p><u>Geometry Position</u></p> <p>Transformations - translation, rotation, reflection, and</p>	<p><u>Statistics</u></p> <p>Calculate simple probabilities.</p> <p>Calculate the mean, mode and median.</p> <p>Construct pie charts.</p> <p>Produce and interpret composite bar charts.</p> <p>Produce and interpret comparative and dual bar charts.</p>

	<p>methods applied to integers and decimals. Recognise powers of 2, 3, 4, 5. Find the HCF and LCM. Write a number as a product of its prime factors. Use BIDMAS. Standard form introduction.</p>	<p><u>Ratio and Proportion</u></p> <p>Simplify ratio. Divide a ratio and solve problems. Write a ratio in the form 1:n.</p>			<p>enlargement (positive scale factor)</p>	
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Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
8	<p><u>Place value and Calculations</u></p> <p>Round to significant figures. Estimate calculations by rounding to 1.s.f. Use index laws to simplify calculations, (multiplication and division). Write numbers in</p>	<p><u>Ratio and Proportion</u></p> <p>Use a ratio to find one quantity when the other is known. Solve ratio problems. Use a ratio to compare a scale model to real-life object</p>	<p><u>Measurement</u></p> <p>Calculate the area and perimeter of semi circles and quarter circles. Find radius or diameter, given area or circumference of circles. Area of composite shapes that include sections of a circle.</p>	<p><u>Geometry</u></p> <p>Pythagoras' Theorem and apply to problems. Trigonometry. Interior and exterior of polygons. Enlarge a shape by a given scale factor (positive and negative)</p>	<p><u>Algebra 2</u></p> <p>Find the equation of a straight line from a graph in the form $y = mx + c$. Find the coordinates of the midpoint of a line segment. Draw and interpret straight-line graphs for real-life situations.</p>	<p><u>Statistics</u></p> <p>Theoretical probability. Experimental probability. Generate sample space diagrams for combined events. Calculate the mean and mode of grouped data.</p>

<p>standard form. Use BIDMAS. Use prime factorisation to find HCF and LCM of two or more numbers.</p> <p><u>Fractions, Decimals and Percentages</u></p> <p>Percentages increase and decrease using multipliers. Express one quantity as a percentage of another. Percentage change. Work with percentages greater than 100%. Find 100% (calculator).</p>	<p>Use a ratio to convert between measures and currencies Unit pricing.</p> <p><u>Algebra 1</u></p> <p>Collect like terms. Substitution. Multiply double brackets. Factorise into double brackets. Construct and solve linear equations. Inequalities on a number line. Solve inequalities. Rearrange formulae. Use the nth term to generate sequences. Find the nth term.</p>	<p>Volume of prisms and cylinders. Surface area of cuboids and triangular prism.</p>	<p>Translate a shape – column vectors. Consider the area and volume of enlarged shapes Plans and elevations. Bearings.</p>	<p>Plot quadratic graphs.</p>	<p>Draw and interpret scatter graphs. Use a line of best fit.</p>
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Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
9	<p><u>Place value and Calculations</u></p> <p>Estimate calculations. Index laws Solve problems using index laws. Solve problems involving standard form. Basic surds.</p> <p><u>Algebra 1</u></p> <p>Collecting terms Substitution Solve and form equations. Inequalities. Rearranging formulae Expand double brackets and factorise into single and double brackets. (x^2)</p>	<p><u>Fractions, decimals and percentages</u></p> <p>Reciprocals. Percentage increase and decrease. Reverse percentages. Percentage profit and loss.</p> <p><u>Measurement</u></p> <p>Area and perimeter of parts of circles. Calculate arc lengths. Solve problems involving circles. Volume of 3D shapes. Use the trigonometric ratios to solve 2D problems. Angles of elevation and depression.</p>	<p><u>Algebra 2</u></p> <p>Draw straight line graphs and find parallel and perpendicular lines. Iteration (H) Distinguish between arithmetic and geometric sequences. Sequences – linear and quadratic (introduction). Plot quadratic graphs, factorisation and roots.</p>	<p><u>Geometry</u></p> <p>Calculate the angles of regular polygons and use these to solve problems. Bearings Constructions. Loci and problems. Introduction to similar shapes.</p> <p><u>Measurement</u></p> <p>Translate shapes using column vectors. Reflect shapes (linear lines) Rotate shapes. Understand the effect of enlargement on angles, perimeter and area.</p>	<p><u>Algebra 3</u></p> <p>Change the subject of a formula. Draw distance–time and velocity–time graphs. Graphing inequalities. Simultaneous equations (elimination).</p>	<p><u>Statistics</u></p> <p>Plot and interpret scatter diagrams. Design and use two-way tables. Stem and leaf diagrams. Averages from grouped data (mean, mode, and median). Produce frequency diagrams. Probability. Sample space diagrams.</p>

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
10	<p><u>Number</u></p> <p>Estimation. Inequality notation to specify an error interval due to truncation or rounding. Upper and lower bounds of calculations involving perimeters, areas and volumes of 2D and 3D shapes (H) Fractions, decimals, percentages. Surds (H) Indices. Standard form.</p> <p><u>Algebra 1</u></p> <p>Expand brackets.</p>	<p><u>Statistics</u></p> <p>Probability – expectation Listing outcomes Sample space diagrams Tree diagrams. Relative frequency. Two-way tables.</p> <p><u>Measurement</u></p> <p>Area of compound shapes (triangle, trapezium, parallelogram, circles). Circles – sectors. Volume and surface area of cylinders, cones and spheres.</p>	<p><u>Geometry</u></p> <p>Translation, rotation, reflection and enlargements. Combined transformations (H). Describe the changes and invariance of repeated transformations (H). Similar shapes. Angles in Polygons. Circle Theorems (H).</p> <p><u>Algebra 2</u></p> <p>Solve simultaneous equations. Solve simultaneous equations graphically. Graphs – linear, quadratic, cubic, reciprocals, circles. Sequences</p>	<p><u>Statistics 2</u></p> <p>Types of data Sampling Surveys and bias. Averages from tables. Pie Charts. Scatter diagrams. Stem and leaf. Cumulative frequency (H) Box plots (H) Histograms (H)</p>	<p><u>Measurement 2</u></p> <p>Pythagoras' theorem. Trigonometry Interpret trig graphs (H) Recall trig values. Sine rule. Cosine rule.</p> <p><u>Number 2</u></p> <p>Percentage change Reverse percentages Simple interest Compound Interest.</p> <p><u>Ratio, Proportion and Rates of Change</u></p> <p>Convert between compound units. Proportion problems. Direct and inverse proportion.</p>	<p><u>Algebra 3</u></p> <p>Inequalities on a number line. Solve inequalities. Graph inequalities. Iteration</p> <p><u>Geometry 2</u></p> <p>Plans and elevations. Scale drawings. Constructions.</p>

	Factorise quadratic expressions. Set up and solve linear equations. Solve quadratic equations by factorisation and completing the square (H) Solve quadratic equations by using the quadratic formula (H)					
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Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
11 Higher	3D Pythagoras and trigonometry. 3D sine and cosine rules. Circle Theorems Vectors Change subject of formulae. Find graphically the intersection points	Iteration. Circle Theorems Quadratic Simultaneous Equations. Functions Growth and decay problems.	Revision and Exam Preparation.	Revision and Exam Preparation.	Revision and Exam Preparation.	Revision and Exam Preparation.

	<p>of a given straight line with a circle.</p> <p>Iteration.</p> <p>Solve quadratic equations.</p> <p>Set up equations for direct and inverse proportion.</p> <p>Graphs of direct and inverse proportion</p>					
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Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
11 Foundation	<p>Using $y=mx + c$</p> <p>Plotting quadratic graphs.</p> <p>Expanding brackets and factorising.</p> <p>Area and perimeter of parts of circles.</p>	<p>Transformations.</p> <p>3D shapes.</p> <p>Mean and median from a frequency table.</p> <p>Ratio and Proportion and best buys.</p>	Revision and Exam Preparation.	Revision and Exam Preparation.	Revision and Exam Preparation.	Revision and Exam Preparation.

	Set up and solve equations.	Problems involving fractions, decimals and percentages.				
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