

Curriculum Progression Maps

MATHEMATICS



	Year 7	Year 8	Year 9	Year 10 Bold is Higher Tier	Year 11 Bold is Higher Tier
Autumn 1	<p>Sequences Describe and continue a sequence given diagrammatically</p> <p>Predict and check the next term(s) of a sequence</p> <p>Represent sequences in tabular and graphical forms</p> <p>Recognise the difference between linear and non-linear sequences</p> <p>Continue numerical linear sequences</p> <p>Continue numerical non-linear sequences</p> <p>Explain the term-to-term rule of numerical sequences in words</p> <p>Find missing numbers within sequences</p> <p>Understand and use notion Given a numerical input, find the output of a single function machine</p> <p>Use inverse operations to find the input given the output</p> <p>Use diagrams and letters to generalise number operations</p> <p>Use diagrams and letters with single function machines</p> <p>Find the function machine given a simple expression</p> <p>Substitute values into single operation expressions</p> <p>Find numerical inputs and outputs for a series of two function machines</p>	<p>Ratio and Scale Understand the meaning and representation of ratio</p> <p>Understand and use ratio notation</p> <p>Solve problems involving ratios of the form 1:n (or n:1)</p> <p>Solve proportional problems involving the ratio m:n</p> <p>Divide a value into a given ratio</p> <p>Express ratios in their simplest integer form</p> <p>Express ratios in the form 1:n</p> <p>Compare ratios and related fractions</p> <p>Understand π as the ratio between diameter and circumference</p> <p>Understand gradient of a line as a ratio</p> <p>Multiplicative Change</p> <p>Solve problems involving direct proportion</p> <p>Explore conversion graphs</p> <p>Convert between currencies</p> <p>Explore relationships between similar shapes</p> <p>Understand scale factors as a multiplicative representation</p> <p>Draw and interpret scale diagrams</p> <p>Interpret maps using scale factors and ratios</p>	<p>Straight Line Graphs</p> <p>Lines parallel to the axes, $y=x$ and $y=-x$</p> <p>Using tables of values</p> <p>Compare gradients</p> <p>Compare intercepts</p> <p>Understand and use $y=mx+c$</p> <p>Write an equation in the form $y=mx+c$</p> <p>Find the equation of a line from a graph</p> <p>Interpret gradient and intercepts of real-life graphs</p> <p>Model real-life graphs involving inverse proportion</p> <p>Explore perpendicular lines</p> <p>Forming and solving equations</p> <p>Sole one- and two-step equations and inequalities</p> <p>Solve one-and two-step equations and inequalities</p> <p>Solve one- and two-step equations and inequalities with brackets</p> <p>Inequalities with negative numbers</p> <p>Solve equations with unknowns on both sides</p> <p>Solve inequalities with unknowns on both sides</p> <p>Solving equations and inequalities in context</p>	<p>Number - Foundation</p> <p>Calculations</p> <p>Decimal numbers</p> <p>Place value</p> <p>Factors and multiples</p> <p>Squares, cubes, and roots</p> <p>Index notation</p> <p>Prime factors</p> <p>Number – Higher</p> <p>Number problems and reasoning</p> <p>Place value and estimating</p> <p>HCF and LCM</p> <p>Calculating with powers (indices)</p> <p>Zero, fractional and negative powers</p> <p>Powers of 10 and standard form</p> <p>Surds</p> <p>Algebra - Foundation</p> <p>Algebraic expressions</p> <p>Simplifying expressions</p> <p>Substitution</p> <p>Formulae</p> <p>Expanding brackets</p> <p>Factorising</p> <p>Using expressions and formulae</p> <p>Algebra - Higher</p> <p>Algebraic indices</p>	<p>Quadratic Equations and Graphs - Foundation</p> <p>Expanding double brackets</p> <p>Plotting quadratic graphs Using quadratic graphs</p> <p>Factoring quadratic expressions</p> <p>Solving quadratic equations algebraically</p> <p>Circle Theorems Higher</p> <p>Radii and chords</p> <p>Tangents</p> <p>Angles in circles</p> <p>Applying circle theorems</p> <p>Perimeter, area and volume 2 - Foundation</p> <p>Circumference of a circle</p> <p>Area of a circle</p> <p>Semicircles and sectors</p> <p>Composite 2D shapes and cylinders</p> <p>Pyramids and cones</p> <p>Spheres and composite solids</p> <p>More algebra - Higher</p> <p>Rearranging formulae</p> <p>Algebraic fractions</p> <p>Simplify algebraic fractions</p> <p>More algebraic fractions</p> <p>Proof</p> <p>Surds</p>

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	<p>Use diagrams and letters with a series of two function machines</p> <p>Find the function machines given a two-step expression</p> <p>Substitute values into two-step expression</p> <p>Generate sequences given an algebraic rule</p> <p>Represent one- and two-step functions graphically</p> <p>Equality and Equivalence</p> <p>Understand the meaning of equality</p> <p>Understand and use fact families, numerically and algebraically</p> <p>Solve one-step linear equations involving \pm using inverse operations</p> <p>Solve one-step linear equations involving \times/\div using inverse operations</p> <p>Understand the meaning of like and unlike terms</p> <p>Understand the meaning of equivalence</p> <p>Simplify algebraic expressions by collecting like terms, using the \equiv symbol</p>	<p>Multiplying & Dividing Fractions</p> <p>Represent multiplication of fractions</p> <p>Multiply a fraction by an integer</p> <p>Find the product of a pair of unit fractions</p> <p>Find the product of a pair of any fractions</p> <p>Divide an integer by a fraction</p> <p>Divide a fraction by a unit fraction</p> <p>Understand and use the reciprocal</p> <p>Divide any pair of fractions</p> <p>Multiply and divide improper and mixed fractions</p> <p>Multiply and divide algebraic fractions</p>	<p>Substituting into formulae and equations</p> <p>Rearranging formulae (one-step)</p> <p>Rearrange formulae (two-step)</p> <p>Rearrange complex formulae including brackets and squares</p> <p>Testing conjectures</p> <p>Factors, Multiples and Primes</p> <p>True or False?</p> <p>Always, Sometimes, Never true</p> <p>Show that</p> <p>Conjectures about number</p> <p>Expand a pair of binomials</p> <p>Conjectures with algebra</p> <p>Explore the 100 grid</p> <p>Expand three binomials</p>	<p>Expanding and factorising</p> <p>Equations</p> <p>Formulae</p> <p>Linear sequences</p> <p>Non-linear sequences</p> <p>More expanding and factorising</p> <p>Graphs, Tables and Charts - Foundation</p> <p>Frequency tables</p> <p>Two-way tables</p> <p>Representing data</p> <p>Time series</p> <p>Stem and leaf diagrams</p> <p>Pie charts</p> <p>Scatter graphs</p> <p>Line of best fit</p> <p>Interpreting and representing data - Higher</p> <p>Statistical diagrams 1</p> <p>Time series</p> <p>Scatter graphs</p> <p>Line of best fit</p> <p>Averages and range</p> <p>Statistical diagrams 2</p>	<p>Solving algebraic fraction equations</p> <p>Fractions, indices and standard form - Foundation</p> <p>Multiplying and dividing fractions</p> <p>The laws of indices</p> <p>Writing large numbers in standard form</p> <p>Writing small numbers in standard form</p> <p>Calculating with standard form</p> <p>Vectors and geometric proof - Higher</p> <p>Vectors and vector notation</p> <p>Vector arithmetic</p> <p>More vector arithmetic</p> <p>Parallel vectors and collinear points</p> <p>Solving geometric problems</p>
Autumn 2	<p>Place Value & ordering integers & decimals</p> <p>Recognise the place value of any number in an integer up to one billion</p> <p>Understand and write integers up to one billion in words and figures</p> <p>Work out intervals on a number line</p> <p>Position integers on a number line</p> <p>Round integers to the nearest power of ten</p>	<p>Working in the Cartesian Plane</p> <p>Work with coordinates in all four quadrants</p> <p>Identify and draw lines that are parallel to the axes</p> <p>Recognise and use the line $y = x$</p> <p>Recognise and use lines of the form $y = kx$</p> <p>Link $y = kx$ to direct proportion problems</p>	<p>Three-dimensional shapes</p> <p>Know names of 2-D and 3-D shapes</p> <p>Recognise prisms (including language of edges/vertices)</p> <p>Accurate nets of cuboid and other 3-D shapes</p> <p>Sketch and recognise nets of cuboids and other 3-D shapes</p> <p>Plans and elevations</p>	<p>Fractions and percentages - Foundation</p> <p>Working with fractions</p> <p>Operations with fractions</p> <p>Multiplying fractions</p> <p>Dividing fractions</p> <p>Fractions and decimals</p> <p>Fractions and percentages</p> <p>Calculating percentages 1</p> <p>Calculating percentages 2</p>	<p>Proportion and graphs Higher</p> <p>Direct proportion</p> <p>More direct proportion</p> <p>Inverse proportion</p> <p>Exponential functions</p> <p>Non-linear graphs</p> <p>Translating graphs of functions</p> <p>Reflecting graphs of functions</p>

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<p>Compare two numbers using $+$, \neq, $<$, $>$, \leq, \geq</p> <p>Order a list of integers</p> <p>Find the range of a set of numbers</p> <p>Understand place value for decimals</p> <p>Position decimals on a number line</p> <p>Compare and order any number up to one billion</p> <p>Round a number to 1 significant figure</p> <p>Write 10, 100, 1000 etc. as powers of ten</p> <p>Write positive integers in the form $A \times 10^n$</p> <p>Investigate negative powers of ten</p> <p>Write decimals in the form $A \times 10^n$</p> <p>Fraction, decimal & percentage equivalence</p> <p>Represent tenths and hundredths as diagrams</p> <p>Represent tenths and hundredths on number lines</p> <p>Interchange between fractional and decimal number lines</p> <p>Convert between fractions and decimals – tenths and hundredths</p> <p>Convert between fractions and decimals – fifth and quarters</p> <p>Convert between fractions and decimals – eighths and thousandths</p> <p>Understand the meaning of percentage using a hundred square</p>	<p>Explore the gradient of the line $y = kx$</p> <p>Recognise and use lines of the form $y = x + a$</p> <p>Explore graphs with negative gradient ($y = -kx$, $y = a - x$, $x + y = a$)</p> <p>Link graphs to linear sequences</p> <p>Plot graphs of the form $y = mx + c$</p> <p>Explore non-linear graphs</p> <p>Find the midpoint of a line segment</p> <p>Representing Data</p> <p>Draw and interpret scatter graphs</p> <p>Understand and describe linear correlation</p> <p>Draw and use line of best fit (1) & (2)</p> <p>Identify non-linear relationships</p> <p>Identify different types of data</p> <p>Read and interrupt ungrouped frequency tables</p> <p>Read and interrupt grouped frequency tables</p> <p>Represent continuous data grouped into equal classes</p> <p>Represent data in two-way tables</p> <p>Tables and Probability</p> <p>Construct sample spaces for 1 or more events</p> <p>Find probabilities from a sample space</p>	<p>Find area of 2-D shapes</p> <p>Surface area of cubes and cuboids</p> <p>Surface area of triangular prisms</p> <p>Surface area of a cylinder</p> <p>Volume of cubes and cuboids</p> <p>Volume of other 3-D shapes – prisms and cylinders</p> <p>Explore volumes of cones, pyramids and spheres</p> <p>Constructions & congruency</p> <p>Draw and measure angles</p> <p>Construct and interpret scale drawings</p> <p>Locus of distance from a straight line/shape</p> <p>Locus equidistant from two points</p> <p>Construct a perpendicular bisector</p> <p>Construct a perpendicular from a point</p> <p>Construct a perpendicular to a point</p> <p>Locus of a distance from two lines</p> <p>Construct an angle bisector</p> <p>Construct triangles from given information</p> <p>Identify congruent figures</p> <p>Explore congruent triangles</p> <p>Identify congruent triangle</p>	<p>Fractions, ratio and percentages – Higher</p> <p>Fractions</p> <p>Ratios</p> <p>Ratio and proportion</p> <p>Percentages</p> <p>Fractions, decimals and percentages</p> <p>Angles and trigonometry Higher</p> <p>Angle properties of triangles and quadrilaterals</p> <p>Interior angles of a polygon</p> <p>Exterior angles of a polygon</p> <p>Pythagoras' theorem 1</p> <p>Pythagoras' theorem 2</p> <p>Trigonometry 1</p> <p>Trigonometry 2</p> <p>Equations, inequalities, and sequences - Foundation</p> <p>Solving equations 1</p> <p>Solving equations 2</p> <p>Solving equations with brackets</p> <p>Introducing inequalities</p> <p>More inequalities</p> <p>Using formulae</p> <p>Generating sequences</p> <p>Using the nth term.</p>	<p>Congruence, similarity and vectors - Foundation</p> <p>Similarity and enlargement</p> <p>More similarity</p> <p>Using similarity</p> <p>Congruence 1</p> <p>Congruence 2</p> <p>Vectors 1</p> <p>Vectors 1</p> <p>More algebra – Foundation</p> <p>Graphs of cubic and reciprocal functions</p> <p>Non-linear graphs</p> <p>Solving simultaneous equations graphically</p> <p>Solving simultaneous equations algebraically</p> <p>Rearranging formula</p> <p>Proof</p> <p>END OF NEW CONTENT.</p> <p>REVISION AND EXAMINATION PREPARATION</p>
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	<p>Convert fluently between simple fractions, decimals and percentages</p> <p>Use and interpret pie charts</p>	<p>Find probabilities from two-way tables</p> <p>Find probabilities from Venn diagrams</p> <p>Use the product rule for finding the total number of possible outcomes</p>			
Spring 1	<p>Addition and Subtraction</p> <p>Properties of addition and subtraction</p> <p>Mental strategies for addition and subtraction</p> <p>Use formal methods for addition of integers</p> <p>Use formal methods for addition of decimals</p> <p>Use formal methods for subtraction of integers</p> <p>Use formal methods for subtraction of decimals</p> <p>Choose the most appropriate method: mental strategies, formal written or calculator</p> <p>Solve problems in the context of perimeter</p> <p>Solve financial maths problems</p> <p>Solve problems involving tables and timetables</p> <p>Solve problems with frequency trees</p> <p>Solve problems with bar charts and line charts</p> <p>Add and subtract numbers given in standard form</p> <p>Multiplication and Division</p> <p>Properties of multiplication and division</p> <p>Understand and use factors</p>	<p>Brackets, Equations & Inequalities</p> <p>Form algebraic expressions</p> <p>use directed number with algebra</p> <p>Multiply out a single bracket factorise into a single bracket</p> <p>Expand multiple single brackets and simplify</p> <p>Expand a pair of binomials</p> <p>Solve equations, including with brackets</p> <p>Form and solve equations with brackets</p> <p>Understand and solve simple inequalities</p> <p>Form and solve inequalities</p> <p>Solve equations and inequalities with unknowns on both sides</p> <p>Form and solve equations and inequalities with unknowns on both sides</p> <p>Identify and use formulae, expressions, identities and equations</p> <p>Sequences</p> <p>Generate sequences given a rule in words</p> <p>Generate sequences given a simple algebraic rule</p>	<p>Numbers</p> <p>Integers, real and rational numbers</p> <p>Understand and use surds</p> <p>Work with directed number</p> <p>Solve problems with integers</p> <p>Solve problems with decimals</p> <p>HCF and LCF</p> <p>Adding and subtracting fractions</p> <p>Multiplying and dividing fractions</p> <p>Solve problems with fractions</p> <p>Numbers in standard form</p> <p>Using percentages</p> <p>Use the equivalence of fractions, decimals and percentages</p> <p>Calculate percentage increase and decrease</p> <p>Express a change as a percentage</p> <p>Solve 'reverse' percentage problems</p> <p>Recognise and solve percentage problems (non-calculator)</p> <p>Recognise and solve percentage problems (calculator)</p>	<p>Angles - Foundation</p> <p>Properties of shapes</p> <p>Angles in parallel lines</p> <p>Angles in triangles</p> <p>Interior and exterior angles</p> <p>More exterior and interior angles</p> <p>Geometrical problems</p> <p>Graphs - Higher</p> <p>Linear graphs</p> <p>More linear graphs</p> <p>Graphing rates of change</p> <p>Real-life graphs</p> <p>Line segments</p> <p>Quadratic graphs</p> <p>Cubic and reciprocal graphs</p> <p>More graphs</p> <p>Area and Volume Higher</p> <p>Perimeter and area</p> <p>Units and accuracy</p> <p>Prisms</p> <p>Circles</p> <p>Sectors of circles</p> <p>Cylinders and spheres</p> <p>Pyramids and cones</p>	

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	<p>Understand and use multiples</p> <p>Multiply and divide integers and decimals by powers of 10</p> <p>Multiply by 0.1 and 0.01</p> <p>Convert metric units</p> <p>Use formal methods to multiply integers</p> <p>Use formal methods to multiply decimals</p> <p>Use formal methods to divide integers</p> <p>Use formal methods to divide decimals</p> <p>Understand and use order of operations</p> <p>Solve problems using the area of rectangles and parallelograms</p> <p>Solve problems using the area of triangles</p> <p>Solve problems using the area of trapezia</p> <p>Solve problems using the mean</p> <p>Explore multiplication and division in algebraic expressions</p> <p>Fractions & Percentages of Amounts</p> <p>Find a fraction of a given amount</p> <p>Use a given fraction to find the whole and/or other fractions</p> <p>Find a percentage of a given amount using mental methods</p> <p>Find a percentage of a given amount using a calculator</p> <p>Solve problems with fractions greater than 1</p>	<p>Generate sequences given a complex algebraic rule</p> <p>Find the rule for the n^{th} term of a linear sequence</p> <p>Indices</p> <p>Adding and subtracting expressions with indices</p> <p>Simplifying algebraic expressions by multiplying indices</p> <p>Simplifying algebraic expressions by dividing indices</p> <p>Using the addition law for indices</p> <p>Using the addition and subtraction law for indices</p> <p>Exploring powers of powers</p>	<p>Solve problems with repeated percentage change</p> <p>Maths and Money</p> <p>Solve problems with bills and bank statements</p> <p>Calculate simple interest</p> <p>Calculate compound interest</p> <p>Solve problems with Value Added Tax</p> <p>Calculate wages and taxes</p> <p>Solve problems with Value Added Tax</p> <p>Calculate wages and taxes</p> <p>Solve problems with exchange rates</p> <p>Solve unit pricing problems</p>	<p>Averages and Range - Foundation</p> <p>Mean and range</p> <p>Mode, median and range</p> <p>Types of average</p> <p>Estimating the mean</p> <p>Sampling</p> <p>Perimeter, area and Volume 1 - Foundation</p> <p>Rectangles, parallelograms, and triangles</p> <p>Trapezia and changing units</p> <p>Area of compound shapes</p> <p>Surface area of 3D solids</p> <p>Volume of prisms</p> <p>More volume and surface area</p> <p>Transformations and constructions - Higher</p> <p>3d Solids</p> <p>Reflection and rotation Enlargement</p> <p>Transformations and combinations of different transformations</p> <p>Scale drawing and bearings</p> <p>Constructions 1</p> <p>Constructions 2</p> <p>Loci</p>	
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	and percentages greater than 100%				
Spring 2	<p>Directed Number</p> <p>Understand and use representations of directed numbers</p> <p>Order directed numbers using lines and appropriate symbols</p> <p>Perform calculations that cross zero</p> <p>Add directed numbers</p> <p>Subtract directed numbers</p> <p>Multiplication of directed numbers</p> <p>Multiplication and division of directed number calculations</p> <p>Evaluate algebraic expressions with directed number</p> <p>Introduction to two-step equations</p> <p>Solve two-step equations</p> <p>Use order of operations with directed numbers</p> <p>Roots of positive numbers</p> <p>Explore higher powers and roots</p> <p>Fractional Thinking</p> <p>Understand representations of fractions</p> <p>Convert between mixed numbers and fractions</p> <p>Add and subtract unit fractions with the same denominator</p> <p>Add and subtract fractions from integers expressing the answer as a single fraction</p> <p>Understand and use equivalent fractions</p>	<p>Fractions and Percentages</p> <p>Convert fluently between key fractions, decimals and percentages</p> <p>Calculate key fractions, decimals and percentages of an amount without a calculator</p> <p>Calculate fractions, decimals and percentages of an amount using calculator methods</p> <p>Convert between decimals and percentages greater than 100%</p> <p>Percentage decrease with a multiplier</p> <p>Calculate percentage increase and decrease using a multiplier</p> <p>Express one number as a fraction or a percentage of another without a calculator</p> <p>Express one number as a fraction or a percentage of another using calculator methods</p> <p>Work with percentage change</p> <p>Choose appropriate methods to solve percentage problems</p> <p>Find the original amount given the percentage less than 100%</p> <p>Find the original amount given the percentage greater than 100%</p> <p>Choose appropriate methods to solve complex percentage problems</p>	<p>Deductions</p> <p>Angles in parallel lines</p> <p>Solving angles problems (using chains of reasoning)</p> <p>Angles problems with algebra</p> <p>Conjectures with angles</p> <p>Conjectures with shapes</p> <p>Link constructions and geometrical reasoning</p> <p>Rotations and translation</p> <p>Identify the order of symmetry of a shape</p> <p>Compare and contrast rotational symmetry with line symmetry</p> <p>Rotate a shape about a point</p> <p>Rotate a shape about a point not on a shape</p> <p>Translate a point and shapes by a given vector</p> <p>Compare rotation and reflection of shapes</p> <p>Pythagoras' theorem</p> <p>Square and square roots</p> <p>Identify the hypotenuse on a right-angled triangle</p> <p>Determine whether a triangle is right-angled</p> <p>Calculate the hypotenuse of a right-angled triangle</p> <p>Calculate missing angles in right-angled triangles</p>	<p>Graphs - Foundation</p> <p>Co-ordinates</p> <p>Linear graphs</p> <p>Gradient</p> <p>$Y = mx + c$</p> <p>Real Life Graphs</p> <p>Distance –time graphs</p> <p>More real-life graphs</p> <p>Transformations- Foundation</p> <p>Translation</p> <p>Reflection</p> <p>Rotation</p> <p>Enlargement</p> <p>Describing enlargements</p> <p>Combining transformations</p> <p>Equations and inequalities - Higher</p> <p>Solving linear inequalities</p> <p>Solving quadratic equations 1</p> <p>Solving quadratic equations 2</p> <p>Completing the square</p> <p>Solving simple simultaneous equations</p> <p>More simultaneous equations</p>	

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	<p>Add and subtract fractions where denominators share a simple common multiple</p> <p>Add and subtract fractions with any denominator</p> <p>Add and subtract improper fractions and mixed numbers</p> <p>Use fractions in algebraic contexts</p> <p>Use equivalence to add and subtract decimals and fractions</p> <p>Add and subtract simple algebraic fractions</p>	<p>Standard Form</p> <p>Investigate positive powers of 10</p> <p>Work with numbers greater than 1 in standard form</p> <p>Investigate negative powers of 10</p> <p>Work with numbers between 0 and 1 in standard form</p> <p>Compare and order numbers in standard form</p> <p>Mentally calculate with numbers in standard form</p> <p>Add and subtract numbers in standard form</p> <p>Multiply and divide numbers in standard form</p> <p>Use a calculator to work with numbers in standard form</p> <p>Understand and use negative indices</p> <p>Understand and use fractional indices</p> <p>Number Sense</p> <p>Round numbers to the powers of 10, and 1 significant figure</p> <p>Round numbers to a given number of decimal places</p> <p>Estimate the answer to a calculation</p> <p>Understand and use error interval notion</p> <p>Calculate using the order of operations</p> <p>Calculate with money</p>	<p>Use Pythagoras' theorem on coordinate axes</p> <p>Explore proofs of Pythagoras' theorem</p> <p>Use Pythagoras' theorem in 3d shapes</p>	<p>Solving linear and quadratic simultaneous equations</p> <p>Probability - Higher</p> <p>Combined events</p> <p>Mutually exclusive events</p> <p>Experimental probability</p> <p>Independent events and tree diagrams</p> <p>Conditional probability</p> <p>Venn diagrams and set notation</p>	
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		<p>Convert metric measures of length</p> <p>Convert metric units of weight and capacity</p> <p>Convert metric units of area</p> <p>Convert metric units of volume</p> <p>Solve problems involving time and the calendar</p>			
<p>Summer 1</p>	<p>Construction and Measuring</p> <p>Understand and use letter and labelling conventions including those for geometric figures</p> <p>Draw and measure line segments including geometric figures</p> <p>Understand angles as a measure of turn</p> <p>Classify angles</p> <p>Measure angles up to 180°</p> <p>Draw angles up to 180°</p> <p>Draw and measure angles between 180°</p> <p>Identify perpendicular and parallel lines</p> <p>Recognise types of triangles</p> <p>Recognise types of quadrilaterals</p> <p>Identify polygons up to a decagon</p> <p>Construct triangles using SSS</p> <p>Construct triangle using SSS, SAS and ASA</p> <p>Construct more complex polygons</p> <p>Interpret simple pie charts using proportion</p> <p>Interpret pie charts using a protractor</p>	<p>Angles In parallel lines & polygons</p> <p>Understand and use basic angles rules and notation</p> <p>Investigate angles between parallel lines and the transversal</p> <p>Identify and calculate with alternate and corresponding angles</p> <p>Solve complex problems with parallel line angles</p> <p>Constructions triangles and special quadrilaterals</p> <p>Investigate the properties of special quadrilaterals</p> <p>Identify and calculate with sides and angles in special quadrilaterals</p> <p>Understand and use the properties of diagonals of quadrilaterals</p> <p>Understand and use the sum of the interior angles in any polygon</p> <p>Calculate missing interior angles in regular polygons</p> <p>Prove simple geometric facts</p> <p>Construct an angle bisector</p>	<p>Enlargement and similarity</p> <p>Recognise enlargement and similarity</p> <p>Enlarge a shape by a positive integer scale factor</p> <p>Enlarge a shape by a positive integer scale factor from a point</p> <p>Enlarge a shape by a positive fractional scale factor</p> <p>Enlarge a shape by a negative scale factor</p> <p>Work out missing sides and angles in a pair of given similar shapes</p> <p>Solve problems with similar triangles</p> <p>Explore ratio in right-angled triangles.</p> <p>Solving ratio and proportion problems</p> <p>Solve problems with direct proportion</p> <p>Direct proportion and conversion graphs</p> <p>Solve problems with inverse proportion</p> <p>Graphs of inverse proportion</p> <p>Solve ration problems given the whole or a part</p>	<p>Ratio and proportion- Foundation</p> <p>Writing ratios</p> <p>Using ratios 1</p> <p>Ratios and measures</p> <p>Using ratios 2</p> <p>Comparing using ratios</p> <p>Using proportion</p> <p>Proportion and graphs</p> <p>Proportion problems</p> <p>Multiplicative reasoning - Higher</p> <p>Growth and decay</p> <p>Compound measures</p> <p>More compound measures</p> <p>Ratio and proportion</p> <p>Right-angled triangles- Foundation</p> <p>Pythagoras' Theorem 1</p> <p>Pythagoras' Theorem 2</p> <p>Trigonometry – Sine ratio</p> <p>Cosine ratio</p> <p>Tangent ratio</p>	<p>GCSE exam preparation.</p>

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	<p>Draw pie charts</p> <p>Geometric Reasoning</p> <p>Understand and use the sum of angles at a point</p> <p>Understand and use the sum of angles on a straight line</p> <p>Understand and use the equality of vertically opposite angles</p> <p>Know and apply the sum of angles in a triangle</p> <p>Know and apply the sum of angles in a quadrilateral</p> <p>Solve angle problems using properties of triangles and quadrilaterals</p> <p>Solve complex angle problems</p>	<p>Construct a perpendicular bisector of a line segment</p> <p>Area of Trapezia and Circles</p> <p>Calculate the area of triangles, rectangles and parallelograms</p> <p>Calculate the area of a trapezium</p> <p>Calculate the perimeter and area of compound shapes</p> <p>Investigate the area of a circle</p> <p>Calculate the area of a circle and parts of a circle with a calculator</p> <p>Calculate the perimeter and area of compound shapes</p> <p>Line symmetry and reflection</p> <p>Recognise line symmetry</p> <p>Reflect a shape in a horizontal or vertical line 1 (shapes touching the line)</p> <p>Reflect a shape in a horizontal or vertical line 2 (shapes not touching the line)</p> <p>Reflect a shape in a diagonal line 1 (shapes touching the line)</p> <p>Reflect a shape in a diagonal line 2 (shapes not touching the line)</p>	<p>Solve best buy problems</p> <p>Solve problems involving ratio and algebra</p> <p>Rates</p> <p>Solve speed, distance and time problems without a calculator</p> <p>Use distance-time graphs</p> <p>Solve problems with density, mass and volume</p> <p>Solve flow problems and their graphs</p> <p>Rates of change and their units.</p> <p>Convert compound units</p>	<p>Finding lengths and angles</p> <p>Similarity and congruence - Higher</p> <p>Geometric proof and congruence</p> <p>Similarity</p> <p>More similarity</p> <p>Similarity in 3d solids</p> <p>More trigonometry - Higher</p> <p>Accuracy</p> <p>Graph of the sine function</p> <p>Graph of the cosine function</p> <p>Graph of the tangent function</p> <p>Calculating the areas and the sine rule</p> <p>The cosine rule and 2d trigonometry problems</p> <p>Solving problems in 3d</p> <p>Transforming trigonometric graphs 1</p> <p>Transforming trigonometric graphs 2</p> <p>Probability - Foundation</p> <p>Calculating probability</p> <p>Two events</p> <p>Experimental probability</p>	
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Curriculum Progression Maps



MATHEMATICS

				Venn diagrams Tree diagrams	
Summer 2	<p>Developing Number Sense</p> <p>Know and use mental addition and subtraction strategies for integers</p> <p>Know and use mental multiplication and division strategies for integers</p> <p>Know and use mental arithmetic strategies for decimals</p> <p>Know and use mental arithmetic strategies for fractions</p> <p>Use factors to simplify calculations</p> <p>Use estimation as a method for checking mental calculations</p> <p>Use known number facts to derive other facts</p> <p>Know when to use a mental strategy, formal written method or a calculator</p> <p>Sets and Probability</p> <p>Identify and represent sets</p> <p>Interpret and create Venn diagrams</p> <p>Understand and use the intersection of sets</p> <p>Understand and use the union of sets</p> <p>Understand and use the complement of a set</p> <p>Know and use the vocabulary of probability</p> <p>Generate sample spaces for single events</p> <p>Calculate the probability of a single event</p>	<p>The Data Handling Cycle</p> <p>Set up a statistical enquiry</p> <p>Design a criticise questionnaires</p> <p>Draw and interpret pictograms, bar charts and vertical line charts</p> <p>Draw and interpret multiple bar charts</p> <p>Draw and interpret line graphs</p> <p>Choose the most appropriate diagram for given set of data</p> <p>Represent and interpret grouped quantitative data</p> <p>Find and interpret the range</p> <p>Compare distributions using charts</p> <p>Identify misleading graphs</p> <p>Measures of Location</p> <p>Understand and use the mean, median and mode</p> <p>Choose the most appropriate average</p> <p>Find the mean from an ungrouped frequency table</p> <p>Find the mean from a grouped frequency table</p> <p>Identify outliers</p> <p>Compare distributions using averages and the range</p>	<p>Probability</p> <p>Single event probability</p> <p>Relative frequency – including convergence</p> <p>Expected outcomes</p> <p>Independent events</p> <p>Use tree diagrams</p> <p>Use tree-diagrams to solve problems without replacement problems</p> <p>Use diagrams to work out probabilities</p> <p>Algebraic reasoning</p> <p>Draw and interpret quadratic graphs</p> <p>Interpret graphs, including reciprocal and piecewise</p> <p>Investigate graphs of simultaneous equations</p> <p>Represent inequalities</p>	<p>Multiplicative reasoning - Foundation</p> <p>Percentages</p> <p>Growth and decay Compound Measures</p> <p>Distance, speed and time</p> <p>Direct and inverse proportion</p> <p>Further statistics Higher</p> <p>Sampling</p> <p>Cumulative frequency</p> <p>Box plots</p> <p>Drawing histograms</p> <p>Interpreting histograms</p> <p>Comparing and describing distributions</p> <p>Constructions, loci and bearings - Foundation</p> <p>3D solids</p> <p>Plans and elevations</p> <p>Accurate drawing 1</p> <p>Scales and maps</p> <p>Accurate drawing 2</p> <p>Constructions</p> <p>Loci and regions</p> <p>Bearings</p>	

Curriculum Progression Maps



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<p>Understand and use the probability scale</p> <p>Know that the sum of probabilities of all possible outcomes is 1</p> <p>Prime numbers & proof</p> <p>Find and use multiples</p> <p>Identify factors of numbers and expressions</p> <p>Recognise and identify prime numbers</p> <p>Recognise square and triangular numbers</p> <p>Find common factors of a set of numbers including the HCF</p> <p>Find common multiples of a set of numbers including the LCF</p> <p>Write a number as a product of its prime factors</p> <p>Use a Venn diagram to calculate the HCF and LCF</p> <p>Make and test conjectures Use counterexamples to disprove a conjecture</p>			<p>Further statistics Higher</p> <p>Solving simultaneous equations graphically</p> <p>Representing inequalities graphically</p> <p>Quadratic equations</p> <p>Using quadratic graphs</p> <p>Cubic equations</p> <p>Using iterations to solve equations</p>	
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MATHEMATICS

MATHEMATICS KEY VOCABULARY

	Year 7	Year 8	Year 9	Year 10	Year 11
Autumn 1	Algebra Expression, Term, Formula (formulae), Equation, Function, Variable Mapping diagram, Input, Output Represent Substitute Evaluate Like terms Simplify / Collect Improper fraction Mixed number Operation Inverse Long multiplication Short division, Long division Remainder Mixed number Equivalent fraction Simplify, cancel, lowest terms Proper fraction, improper fraction Length, distance Mass, weight Volume Capacity Metre, centimetre, millimetre Tonne, kilogram, gram, milligram Litre, millilitre Hour, minute, second Line segment Edge, Face, Vertex (Vertices) Plane Parallel Perpendicular Regular polygon Rotational symmetry	Ratio Proportion Proportional Multiplier Unitary method Units Sequence Linear Term Difference Term-to-term rule Position-to-term rule Ascending Descending	Power Root Index, Indices Standard form Inequality Truncate Round Minimum, Maximum Interval Decimal place Significant figure Compasses Arc, Line segment Perpendicular, Bisect Perpendicular bisector Locus, Loci Plan, Elevation	Similar Opposite Adjacent Hypotenuse Trigonometry Function Ratio Sine Cosine Tangent Angle of elevation, angle of depression Power, Root Index, Indices Standard form Inequality Truncate, Round Minimum bound, Maximum bound Interval Decimal place, Significant figure	Outcome, equally likely outcomes Event, independent event, dependent event Tree diagrams Theoretical probability, experimental probability Random Bias, unbiased, fair Enumerate Set Conditional probability Venn diagram Function, equation Linear, non-linear Parallel Perpendicular Gradient y-intercept, x-intercept, root Sketch, plot Centre (of a circle) Radius Tangent
Autumn 2	(Square and cube) root Triangular number, Square number, Cube number, Prime number Linear sequence Positive number Negative number Inequalities Face, Edge, Vertex (Vertices) Cube, Cuboid, Prism, Cylinder, Pyramid, Cone, Sphere Quadrilateral	Degrees Right angle, acute angle, obtuse angle, reflex angle Vertically opposite Geometry, geometrical Parallel Alternate angles, corresponding angles Interior angle, exterior angle Regular polygon	Inequality Identity Equivalent Equation Formula, Formulae Expression Expand Linear Quadratic Direct proportion, Inverse proportion Multiplier Linear Congruent, Congruence Similar, Similarity	Unknown Solve Solution set Simultaneous equations Substitution Elimination Perpendicular bisector Scale Factor Similar Congruent Invariance Transformation Rotation Reflection Translation	Vector Scalar Constant Magnitude Diagonal (Face Diagonal, Space Diagonal) Plane Opposite, Adjacent, Hypotenuse Trigonometry Sine, Cosine, Tangent Angle of elevation, angle of depression

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	<p>Square, Rectangle, Parallelogram, (Isosceles) Trapezium, Kite, Rhombus Delta, Arrowhead Diagonal Perpendicular, Parallel Triangle Scalene, Right-angled, Isosceles, Equilateral Perimeter, area, volume, capacity, surface area Square, rectangle, parallelogram, triangle, trapezium (trapezia) Polygon Cube, cuboid Square millimetre, square centimetre, square metre, square kilometre Cubic centimetre, centimetre cube Formula, formulae Length, breadth, depth, height, width (Cartesian) coordinates Axis, axes, x-axis, y-axis Origin Quadrant Translation, Reflection, Rotation (Centre of) Transformation Object, Image Congruent, congruence Mirror line Vector Algebra, algebraic, algebraically Unknown Equation Operation Solve Solution Brackets Symbol Substitute</p>	<p>Proper fraction, improper fraction, mixed number Simplify, cancel, lowest terms Percent, percentage Percentage change Original amount Multiplier (Simple) interest Exact</p>	<p>Compound unit Density, Population density, Pressure Term, Term-to-term rule Position-to-term rule nth term Generate Linear, Quadratic First (second) difference Fibonacci number Fibonacci sequence</p>	<p>Enlargement Equivalent Equation Expression Expand Linear Quadratic Algebraic Fraction Difference of two squares</p>	
Spring 1	<p>Average Spread Consistency Mean, Median, Mode, Range Measure Data Statistic Approximate Prime Prime factor Prime factorisation Product Venn diagram Highest common factor Lowest common multiple</p>	<p>Algebra, algebraic, algebraically Unknown Equation Operation Solve Solution Brackets Symbol Substitute Graph Point of intersection</p>	<p>(Linear) inequality Unknown Manipulate Solve Solution set Integer Circle, Pi Radius, diameter, chord, circumference, arc, tangent, sector, segment (Right) prism, cylinder Cross-section Hypotenuse Pythagoras' theorem</p>	<p>Direct proportion Inverse proportion Multiplier Term nth term Generate First (second) difference Geometric Progression</p>	<p>Power, Root Index, Indices Surd Simplify Rationalise (Quadratic) equation Factorise Rearrange Complete the square Unknown Manipulate Maximum, minimum Parabola Recurrence relation Interval bisection Decimal search Iteration</p>

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	Standard form Significant figure				Scale Factor Similar Transformation Enlargement Mapping Function Inverse function Composite function Term nth term First (second) difference Geometric Progression Surd
Spring 2	Negative number, Directed number Improper fraction Mixed number Operation, Inverse Long multiplication Short division Power, Indices, Roots Similar, Similarity Enlarge, enlargement Scale factor Centre of enlargement Object, Image Scale drawing Bearing Plan, Elevation	Circle Centre Radius, diameter, chord, circumference Pi (Right) prism Cross-section Cylinder Polygon, polygonal Solid Plot Equation (of a graph) Function Formula Linear Coordinate plane Gradient y-intercept Substitute Quadratic Piece-wise linear Model Kinematic, Speed, Distance	Congruent, congruence Similar (shapes), similarity Hypotenuse Conjecture Derive Prove, proof Counterexample Function, equation Linear, non-linear Quadratic, cubic, reciprocal Parabola, Asymptote Gradient, y-intercept, x- intercept, root Rate of change Sketch, plot Kinematic Speed, distance, time Acceleration, deceleration	(Linear) inequality Variable Manipulate Solve Solution set Integer Set notation Region (Composite) solid Sphere, Pyramid, Cone Perpendicular (height), (slant height) Surface area Volume Congruent, congruence Similarity, similar shapes, similar figures Enlarge, enlargement Scale factor	Unknown (Quadratic) inequality Variable Manipulate Solve Solution set Simultaneous equations Substitution Elimination Exponential Function, equation Linear, non-linear Quadratic, cubic, reciprocal, exponential Parabola Asymptote Maximum, minimum, period Gradient, y-intercept, x- intercept, root Sketch, plot Arguments Continuous data, Grouped data Table, Frequency table Frequency Frequency density Histogram Scale, Graph Axis, axes Vector Scalar Constant Magnitude Collinear
Summer 1	Probability, Theoretical probability Event Outcome Impossible, Unlikely, Evens chance, Likely, Certain Equally likely Mutually exclusive Exhaustive Possibility space Experiment	Outcome, Event Experiment, Combined experiment Frequency tree Enumerate, Set Venn diagram Possibility space, sample space Equally likely outcomes Theoretical probability Bias, Fairness Relative frequency	Equation Simultaneous equation Variable Manipulate Eliminate Solve Derive Interpret	Radius, radii Tangent Chord Theorem Conjecture Derive Prove, proof Counterexample Function, equation Linear, non-linear Quadratic, cubic, reciprocal, exponential Parabola, Asymptote	

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				Gradient, y-intercept, x-intercept, root Rate of change Sketch, plot Kinematic Speed, distance, time Acceleration, deceleration	
Summer 2	Product, Variable, Term, Coefficient Common factor Factorise Power Indices Formula, Formulae Subject, Change the subject Fraction Mixed number Improper fraction Percentage, Decimal Proportion Terminating, Recurring Simplify, Cancel	Data Categorical data, Discrete data Continuous data, Grouped data Table, Frequency table Frequency Histogram Scale, Graph Axis, axes Scatter graph (scatter diagram, scattergram, scatter plot) Bivariate data (Linear) Correlation, Positive, Negative Average Spread Consistency Mean, Median ,Mode Range Statistic Statistics Approximate, Round Calculate an estimate Grouped frequency Midpoint	Outcome, equally likely outcomes Event, independent event, dependent event Tree diagrams Theoretical probability Experimental probability Random Bias, unbiased, fair Relative frequency Enumerate Set Categorical data, Discrete data Continuous data, Grouped data Axis, axes Time series Compound bar chart Scatter graph (scatter diagram, scattergram, scatter plot) Bivariate data (Linear) Correlation Positive correlation, Negative correlation Line of best fit Interpolate Extrapolate Trend Categorical data, Discrete data Continuous data, Grouped data Axis, axes Population Sample Cumulative frequency Box plot, box-and-whisker diagram Central tendency Mean, median, mode Spread, dispersion, consistency Range, Interquartile range Skewness	Fraction Mixed number Top-heavy fraction Percentage change, percentage increase, percentage increase Compound interest, Simple interest Terminating decimal, Recurring decimal (Exponential) growth, decay (Quadratic) equation Factorise Rearrange Variable Unknown Manipulate Solve Deduce x-intercept Root	

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