

Subject content (What will be covered)	As a result, what students should know /understand (Order of study)	What students should be able to do by the end of year 7	How students will be assessed	By when (Half term 1 > 6)
<p>The curriculum is split into 6 main areas Numbers, Algebra, Ratio, proportion and rates of change, Geometry and measures, Probability and Statistics.</p> <p>In addition to this the mathematics curriculum aims to ensure that all pupils:</p> <ul style="list-style-type: none"> <li>become <b>fluent</b> in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.</li> <li><b>reason mathematically</b> by following a line of enquiry, conjecturing relationships and generalisations,</li> </ul>	<ul style="list-style-type: none"> <li>Factors, Multiples, Squares and Primes</li> <li>Positive and Negative Numbers</li> <li>Use of the Four Operations and their inverses</li> <li>Construction and Geometry of 2D and 3D Shapes</li> </ul>	<p><b>Number</b></p> <ul style="list-style-type: none"> <li>understand and use place value for decimals, measures and integers of any size</li> <li>order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, &lt;, &gt;, ≤, ≥</li> <li>use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property</li> <li>use the four operations, including formal written methods, applied to integers, decimals, all both positive and negative</li> <li>use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals</li> <li>work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 7/2 or 0.375 and 3/8)</li> <li>define percentage as ‘number of parts per hundred’, interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100%</li> </ul> <p><b>Algebra</b></p> <ul style="list-style-type: none"> <li>use and interpret algebraic notation, including:                             <ul style="list-style-type: none"> <li>ab in place of <math>a \times b</math></li> <li>3y in place of <math>y + y + y</math> and <math>3 \times y</math></li> <li><math>a^2</math> in place of <math>a \times a</math>, <math>a^3</math> in place of <math>a \times a \times a</math>; <math>a^2b</math> in place of <math>a \times a \times b</math></li> <li><math>a/b</math> in place of <math>a \div b</math></li> <li>coefficients written as fractions rather than as decimals</li> <li>brackets</li> </ul> </li> <li>understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors</li> <li>simplify and manipulate algebraic expressions to maintain equivalence by:                             <ul style="list-style-type: none"> <li>collecting like terms</li> <li>multiplying a single term over a bracket</li> </ul> </li> <li>substitute numerical values into formulae and expressions, including scientific formulae</li> <li>generate terms of a sequence from either a term-to-term or a position-to-term rule</li> <li>use algebraic methods to solve linear equations in one variable</li> </ul>	Continuous assessment in class	HT1
	<ul style="list-style-type: none"> <li>Algebraic Vocabulary and Notation</li> <li>Manipulation and Substitution of Algebraic Expressions and Equations</li> <li>Sequences</li> <li>Using Fractions, Decimals and Percentages</li> <li>Ratio and Proportion</li> <li>Units of Measure</li> <li>Angles</li> </ul>		Termly Assessment examination based on topics studied in the year to date	HT2
	<ul style="list-style-type: none"> <li>Fractions, Decimals and Percentages</li> </ul>		Continuous assessment in class	HT3
	<ul style="list-style-type: none"> <li>Measures</li> <li>Solving Equations and Inequalities</li> </ul>		Termly Assessment examination based on topics studied in the year to date	HT4
	<ul style="list-style-type: none"> <li>Geometrical Reasoning &amp; Shape</li> </ul>		Continuous assessment in class	HT5
			Termly Assessment examination based on topics studied in the year to date	HT6

<p>and developing an argument, justification or proof using mathematical language</p> <ul style="list-style-type: none"> <li>• can <b>solve problems</b> by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Checking and Estimating</b></li> <li>• <b>Graphs and Transformations</b></li> <li>• <b>Statistics and Surveys.</b></li> </ul>	<ul style="list-style-type: none"> <li>• work with coordinates in all four quadrants</li> </ul> <p><b>Ratio, proportion and rates of change</b></p> <ul style="list-style-type: none"> <li>• use ratio notation, including reduction to simplest form</li> <li>• divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio</li> <li>• understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction</li> <li>• change freely between related standard units [for example time, length, area, volume/capacity, mass]</li> </ul> <p><b>Geometry and measures</b></p> <ul style="list-style-type: none"> <li>• draw and measure line segments and angles in geometric figures, including interpreting scale drawings</li> <li>• describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric</li> <li>• derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies</li> <li>• use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3-D</li> <li>• identify properties of, and describe the results of, translations, rotations and reflections applied to given figures</li> </ul> <p><b>Statistics</b></p> <ul style="list-style-type: none"> <li>• describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous data; and appropriate measures of central tendency (mean, mode, median) and spread (range)</li> <li>• construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped data</li> </ul>		
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