

Maths Curriculum Map - Year 7

Term	Units of Study	Curriculum Guidelines	NC –Aims / Focus Points
Autumn 1	<p>Number Skills</p> <p>Analysing and Displaying data</p>	<ul style="list-style-type: none"> • Consolidate their numerical and mathematical capability from Key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots. • Make and test conjectures about patterns and relationships; look for proofs and counter-examples • Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems. 	<ul style="list-style-type: none"> • Solve number problems, using a range of mental and written methods of computation for addition and subtraction. • Spot simple number patterns and describe a sequence in words. • Understand and use decimal notation and place value. • Understand negative numbers as positions on a number line. • 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 and grouped numerical data

<p style="text-align: center;">Autumn 2</p>	<p style="text-align: center;">Expressions, functions and formulae</p> <p style="text-align: center;">Decimals and Measures</p>	<ul style="list-style-type: none"> • Students become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasing complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. • Consolidate their numerical and mathematical capability from Key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots. • Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems. 	<ul style="list-style-type: none"> • Change freely between related standard of units. • Understand that a multiplicative relationship between two quantities can be expressed as a <i>scale factor</i>. • Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders). • Draw and measure line segments and angles in geometric figures, including interpreting scale drawings. <p>Use standard units of mass, length, time, money and other</p>
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			measures, including with decimal quantities.
Spring 1	<p>Fractions</p> <p>Probability</p>	<ul style="list-style-type: none"> • Students to move freely between different numerical, graphical and diagrammatic representations(example equations and graphs) • Consolidate their numerical and mathematical capability from Key stage 2 and select and use appropriate calculation strategies to solve increasingly complex problems • Develop their mathematical knowledge, to begin to model situations mathematically and express the results using a range of formal mathematical representations. 	<ul style="list-style-type: none"> • Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and $2\frac{7}{10}$ or 0.375 and $8\frac{3}{8}$). • Interpret fractions and percentages as operators. • Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1. • Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale.

			<p>Understand that the probabilities of all possible outcomes sum to 1.</p> <ul style="list-style-type: none"> •
Spring 2	Ratio and Proportion	<ul style="list-style-type: none"> • Students become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasing. • Explore what can and cannot be inferred in statistical and probabilistic settings, and begin to express their arguments formally. • Select appropriate concepts, methods and techniques to apply unfamiliar and non-routine problems. • Make and test conjectures about patterns and relationships; looking for proofs or counter-examples 	<ul style="list-style-type: none"> • Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1. • Use ratio notation, including reduction to simplest form • 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.

<p>Summer 1</p>	<p>Lines and Angles</p> <p>Sequences and Graphs</p>	<ul style="list-style-type: none"> • Students to use language and properties precisely to analyse numbers, 2-D and 3-D shapes. • Consolidate their numerical and mathematical capability from Key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots. • Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems. 	<ul style="list-style-type: none"> • Derive and use the standard ruler and compass constructions. • Use the standard conventions for labelling the sides and angles of triangles ABC, and know and use the criteria for congruence of triangles. <p>Work with coordinates in all four quadrants.</p> <p>Generate terms of a sequence from either a term-to-term or a position-to-term rule.</p> <p>Derive and use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance</p>
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<p>Summer 2</p>	<p>Transformations</p>	<ul style="list-style-type: none"> • Students to use language and properties precisely to analyse numbers, 2-D and 3-D shapes. • Consolidate their numerical and mathematical capability from Key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots. 	<ul style="list-style-type: none"> • Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures • Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids

		<ul style="list-style-type: none">• Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems.	
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