

Year 8

Students will take their skills from year 7 and build on them to deepen their fluency with increasingly more complex numbers and algebra. They will begin to appreciate the interconnected nature of Mathematics, applying their knowledge and skills to problems that require a more multidisciplinary approach.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge & Skills Overview	<p>Four Operations & Standard Form $+$ $-$ \times \div with directed numbers, decimals and standard form. Order of operations with multi-step calculations.</p> <p>Index Laws & HCF/LCM Explore and use the index laws for numbers and algebra. Apply HCF and LCM to contexts & problems.</p> <p>Probability The vocabulary and calculations needed to describe likelihood, including combined events.</p>	<p>Algebraic Manipulation Expand, factorise and simplify expressions, including quadratics. Substitute into formulae.</p> <p>Angles in Parallel Lines & Polygons Know angle facts and rules, allowing for multi-step geometric problems to be solved.</p> <p>Fractions & Decimals $+$ $-$ \times \div with fractions, mixed numbers, decimals or combinations of these.</p>	<p>Averages Problem solve with the different averages, and reason which average is most appropriate. Work with frequency data.</p> <p>Ratio & Proportion Solve a variety of contextual ratio problems. Explore the link between ratio and proportion. Solve unit, and compound unit problems.</p>	<p>Ratio & Proportion Solve a variety of contextual ratio problems. Explore the link between ratio and proportion. Solve unit, and compound unit problems.</p> <p>Sequences Investigate sequences linked to diagrammatic patterns. Find and work with the nth term of a sequence. Explore geometric sequences.</p> <p>Linear Graphs Explore the links between sequences, nth term, functions and linear graphs.</p>	<p>Solving Equations Form and solve equations with unknown quantities on both sides. Begin to solve simple quadratic equations.</p> <p>Calculator Percentages Use a calculator efficiently to solve a range of percentage problems including reverse percentage.</p> <p>Area & Volume Calculate the surface area and volume of prisms and cylinders.</p>	<p>Compound Units Solve speed, distance, time problems, including using distance-time graphs.</p> <p>Pythagoras' Theorem Explore the geometric proof and development of the famous Theorem. Begin to use it to find missing lengths in triangles.</p> <p>Transformations Perform multi-step transformations of 2D Shapes. This will involve reflecting, rotating, translating and enlarging.</p>
Opportunities for Recall & Retrieval of Prior Learning	<p>From Year 7</p> <ul style="list-style-type: none"> • Calculation $+$ $-$ \times \div • Prime factors • Fractions & Decimals • Percentage 	<p>From Year 7</p> <ul style="list-style-type: none"> • Algebra Introduction • Angle facts & Rules • Fractions & Decimals 	<p>From Year 7</p> <ul style="list-style-type: none"> • Averages • Ratio • Units of measure 	<p>From Year 7</p> <ul style="list-style-type: none"> • Ratio • Units of measure • Sequences • Coordinates • Algebra Introduction 	<p>From Year 7</p> <ul style="list-style-type: none"> • Algebra Introduction • 2D & 3D Shapes • Area & Perimeter • Fractions & Decimals • Percentages 	<p>From Year 7</p> <ul style="list-style-type: none"> • 2D & 3D Shapes • Area & Perimeter • Units of Measure • Powers & Roots • Transforming Shapes
	<p>From Year 8</p> <ul style="list-style-type: none"> • Decimal calculations in probability 	<p>From Year 8</p> <ul style="list-style-type: none"> • Algebraic expressions and equations within geometric problems • Fractional and decimal algebraic expression 	<p>From Year 8</p> <ul style="list-style-type: none"> • Averages of algebraic expressions • Ratios involving fractions, decimals or algebra 	<p>From Year 8</p> <ul style="list-style-type: none"> • Ratio & Proportion • Fractional, decimal or algebraic sequences • Algebraic Manipulation 	<p>From Year 8</p> <ul style="list-style-type: none"> • Algebraic Manipulation • Equations about angles, sequences, ratio • Algebraic area & volume 	<p>From Year 8</p> <ul style="list-style-type: none"> • Ratio & proportion / compound units • Linear graphs • Area & Volume using Pythagoras