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 multidisciplined approach.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge & Skills Overview	**Four Operations & Standard Form** $+ - \times \div$ with directed numbers, decimals and standard form. Order of operations with multi-step calculations. **Index Laws & HCF/LCM** Explore and use the index laws for numbers and algebra. Apply HCF and LCM to contexts & problems. **Probability** The vocabulary and calculations needed to describe likelihood, including combined events.	**Algebraic Manipulation** Expand, factorise and simplify expressions, including quadratics. Substitute into formulae. **Fractions & Decimals** Solve problems involving $+ - \times \div$ with fractions, mixed numbers, decimals or combinations of these.	**Area & Volume** Calculate the surface area and volume of prisms and cylinders.	**Calculator Percentages** Use a calculator efficiently to solve a range of percentage problems including reverse percentage. **Solving Equations** Form and solve equations with unknown quantities on both sides. Begin to solve simple quadratic equations.	**Ratio & Proportion** Understand how ratios are used to share quantities and solve a variety of contextual problems. Explore the link between ratio and proportion through compound unit problems. **Angles in Parallel Lines & Polygons** Know angle facts and rules, allowing for multi-step geometric problems to be solved **Averages** Determine which average to use to compare sets of data	**Sequences** Explore number patterns and sequences including Fibonacci. Investigate sequences linked to diagrammatic patterns. Find and work with the nth term of a sequence. Explore geometric sequences. **Linear Graphs** Explore the links between sequences, nth term, functions and linear graphs.
Opportunities for Recall & Retrieval of Prior Learning	**From Year 7** • Calculation $+ - \times \div$ • Prime factors • Decima, fractional & percentage calculations in probability • Algebraic expressions	**From Year 7** • Algebra introduction • Fraction & decimal equivalence • Calculation with fractions & decimals	**From Year 7** • Area & perimeter • Units of measure	**From Year 7** • Percentages without a calculator • Solving equations • Writing expressions	**From Year 7** • Ratio introduction • Units of measure • Angles facts & reasoning • Averages & range	**From Year 7** • Writing expressions • Number patterns • Coordinates • Substitution
	From Year 8 • Improved efficiency in calculation + - x ÷	**From Year 8** • Work with fractional & decimal algebraic expressions	**From Year 8** • Use of algebra, fraction & decimals with shape problems	**From Year 8** • Algebraic manipulation • Fraction, decimal & percentage equivalence	**From Year 8** • Ratio with fractions decimals & standard form • Equations with angles • Averages of algebraic expressions	**From Year 8** • Fractional, decimal and algebraic sequences • Algebraic manipulation