Year 7

Students will build on their work at primary school, gaining fluency with increasingly more varied and challenging types of number. They will gain a strong grounding in geometric and algebraic skills, as well as having plenty of opportunity to develop as confident problem solvers, able to articulate their mathematical reasoning.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge & Skills Overview	**Prime Factors** Decompose numbers into their prime factors. Find and use the HCF and LCM. **Directed Numbers** $+ - \times \div$ with directed numbers. **Algebra Introduction** Forming, simplifying, expanding & factorising algebraic expressions.	**Ratio** Understand how ratios are used to share quantities. **Fractions & Decimals** Use the equivalence of fractions and decimals. Order and calculate fluently with fractions	**Solving Equations** Form and solve multi-step algebraic equations using formal balancing **Non-Calculator Percentages** Convert between fractions, decimals and percentages. Calculate confidently with percentages. .	**Rounding & Estimation** Using rounding to find approximations to complex calculations. **Units of Measure** Measure lengths and angles accurately. Convert metric units.	**Presenting Data** Use a variety of graphs and charts to display data. **Angle Facts & Rules** Know the basic angle facts and use them to solve geometric problems. **Perimeter & Area** Find the area and perimeter of 2D shapes: rectangles, triangles, trapezia, circles.	**Averages** Compare sets of data using averages and measures of spread. **Construction** Constructing 2D shapes & nets of 3D shapes and understand their special properties **Transformations** Rotate, reflect, translate and enlarge 2D shapes on a coordinate grid.
Opportunities for Recall & Retrieval of Prior Learning	**From KS2** • Factors & multiples • Negative numbers • Calculation $+ - \times \div$ • Algebraic notation • Place value	**From KS2** • Fraction & decimal equivalence • Calculation with fractions	**From KS2** • Basic equations • Fraction & percentage equivalence	**From KS2** • Place value • Calculation $+ - \times \div$ • Metric conversion	**From KS2** • Knowledge of data charts & graphs • Understanding of Area, perimeter & basic angle facts • Calculation $+ - \times \div$	**From KS2** • Mean, median & mode average • Properties & names of 2D & 3D shapes • Units of measure • Coordinates
	From Year 7 • Link prime factors with algebraic factorising • Use of directed numbers in algebraic expressions	**From Year 7** • Use of prime factors in ratio & fraction simplification • Use of directed number skills with fraction calculations	**From Year 7** • Directed numbers & equations • Simplifying algebraic expressions	**From Year 7** • Four operations when estimating • Use of ratio tables when converting metric units	**From Year 7** • Use of algebra expressions & equations in angle, area & perimeter problems • Fractions, decimals, & percentages within perimeter & area problems • Use of a protractor	**From Year 7** • Area & perimeter of transformed shapes • Graphs & charts