

Number	<p>Recall index laws such as $n^0 = 1$ and involving fractional powers ($9^{\frac{1}{2}}$ and $8^{\frac{1}{3}}$)</p> <p>Understand the definition of a surd and perform calculations involving roots e.g.: $\sqrt{16} \times \sqrt{4} = 8$</p> <p>Simplify surds e.g.: $\sqrt{12} = 2\sqrt{3}$</p> <p>Convert a fraction to a recurring decimal and vice versa</p> <p>Solve problems involving standard form</p>
Algebra	<p>Use iterative processes to generate sequences</p> <p>Use iterative methods to calculate solutions.</p> <p>Multiply three binomials e.g.: $(x + 5)(x + 2)(x - 3)$</p> <p>Identify linear, quadratic, cubic, reciprocal and exponential graphs</p> <p>Solve quadratics graphically and by factorising</p> <p>Solve and simplify algebraic fractions</p> <p>Construct and solve simultaneous linear equations</p> <p>Calculate the equation of a linear function given two coordinates</p>
Ratio & Proportion	<p>Calculate reverse and compound percentage</p> <p>Construct and solve equations involving direct and inverse proportion.</p> <p>Use kinematics formulae to calculate speed and acceleration from worded and graphical situations</p>
Geometry	<p>Enlarge a shape given a negative integer scale factor</p> <p>Describe fully a single transformation</p> <p>Describe the changes and invariance achieved by transformations</p> <p>Calculate and solve vector problems involving ratio</p> <p>Calculate the number of sides on a regular polygon given the interior and exterior angles.</p> <p>Understand and use the formulae $(n - 2) \times 180 = \text{Sum of Degrees in a Polygon}$ and $\frac{360}{n} = \text{exterior angle}$</p> <p>Recall and use the formulae for volume and surface area for pyramids, frustums and cones.</p> <p>Calculate the dimensions given the volume or surface area</p>
Statistics	<p>Plot and interpret cumulative frequency graphs</p> <p>Plot and interpret boxplots</p> <p>Plot a time-series graph</p> <p>Construct and interpret tables and calculate averages from continuous data</p>
Probability	<p>Calculate the outcomes of two or more events by using the product rule</p> <p>Calculate a missing probability from a list or two-way table, including algebraic terms</p> <p>Use a two-way table to calculate conditional probability</p> <p>Compare relative frequency and theoretical probabilities including from different sample sizes</p>