

Key Stage 3 Level 7

Algebra

- To expand double brackets.
- To factorise expressions with indices greater than 1.
- To draw graphs to show equations.
- To draw graphs of quadratic functions.
- To draw graphs of cubic functions.
- To solve equations with x on both sides.
- To substitute negative numbers into a formula.
- To solve simultaneous equations by inspection, graphically and algebraically.
- To substitute decimals into formulae.

Number

- To estimate mentally by rounding to 1 significant figure.
- To understand the term integer.
- To write values as products of primes.
- To find highest common factors and lowest common multiples.
- To use 3D coordinates.
- To find the gradient of a line segment.
- To use multiplication by a decimal to find percentages (multiply by 0.3 for 30%).
- To calculate using improper fractions.
- To calculate speed and average speed from a distance/time graph.
- To use the rules of indices for positive integer values.
- To divide whole numbers by a decimal without a calculator.
- To divide one decimal by another without a calculator.

Shape

- To be able to prove that the angles in a triangle and on a line sum to 180° .
- To rotate shapes using any angle or centre.
- To enlarge by fractional scale factors.
- To find the volume of a triangular prism.
- To find the volume of any prism.
- To draw loci of objects moving subject to a rule.
- Use Pythagoras's theorem to find the length of the hypotenuse and the length of a shorter side.
- To recognise Pythagorean Triples.
- To calculate surface area of 3D shapes.
- To find area and perimeter of shapes containing parts of circles.
- To know the terms sector and segment.

Handling Data

- To use frequency polygons to compare two distributions, using averages and the range.
- To identify and criticise misleading graphs.
- To find the mean from a grouped frequency table.
- To find the modal class and range from a frequency table.
- To calculate probabilities of independent events using AND and OR rules.
- To understand and use relative frequency as an estimate of probability.