

Mathematics Department - KS3 Level Descriptors

Level	In number and algebra students:	In geometry and measure students:	When handling data students:
3	<ul style="list-style-type: none"> • Use place value up to 1000. • Recognise and start to use decimal and negative numbers. • Recall the 2, 3, 4, 5 and 10 multiplication tables. • Use simple fractions. • Recognise equivalent fractions. 	<ul style="list-style-type: none"> • Classify 3-D and 2-D shapes in various ways using mathematical properties such as reflective symmetry for 2-D shapes. • Use non-standard units (e.g. counting squares or cubes). • Use standard metric units of length, capacity and mass. • Use standard units of time, in a range of contexts. 	<ul style="list-style-type: none"> • Extract and interpret information in simple tables and lists. • Construct and interpret bar charts and pictograms.
4	<ul style="list-style-type: none"> • Plot and identify coordinates in the first quadrant. • Add and subtract up to two decimal places. • Multiply and divide by 10 and 100. • Find factors and multiples of numbers and square numbers. • Order decimals. • Recall multiplication tables up to 10×10. 	<ul style="list-style-type: none"> • Find areas by counting squares. • Use ruler and other scales for measurement. • Make 3D models by joining faces and edges together. • Calculate perimeters. • Draw common 2D shapes in different views. • Reflect shapes in a mirror line. 	<ul style="list-style-type: none"> • Draw and use line graphs. • Use mode and range. • Group data in equal ranges. • Collect and use discrete data. • Draw and use frequency diagrams.
5	<ul style="list-style-type: none"> • Cancel fractions. • Understand and use BODMAS. • Solve problems involving negative numbers. • Express comparisons of quantities using ratio and proportion. • Multiply and divide a 3 digit number by a 2 digit number. • Estimate using approximations. • Find fractions and percentages of quantities. • Plot and identify coordinates in all four quadrants. 	<ul style="list-style-type: none"> • Measure and draw angles to nearest degree. • Use formula for the area of a rectangle. • Estimate lengths. • Estimate between imperial and metric units. • Convert one metric unit to another. • Calculate unknown angles in triangles and at a point. • Describe angles in correct terms. • Find symmetry in 2D shapes. 	<ul style="list-style-type: none"> • Interpret graphs and diagrams and draw conclusions. • Compare distributions using the range and an average. • Draw and use a probability scale. • Calculate mean and median. • Use and interpret pie charts. • Understand and calculate theoretical probabilities. • Understand and calculate experimental probabilities.
6	<ul style="list-style-type: none"> • Add and subtract fractions. • Solve equations using trial and improvement. • Round to decimal places. • Calculate using ratios. • Round to significant figures. • Find the n^{th} term of a linear sequence. • Use equivalent fractions, percentages and decimals. • Express one number as a percentage or fraction of another. 	<ul style="list-style-type: none"> • Calculate the area and circumference of a circle. • Understand and recall the properties of polygons. • Find missing angles using intersecting and parallel lines. • Recall the special properties of quadrilaterals. • Enlarge shapes given a scale factor. • Calculate the volume of a cuboid. • Use simple plans and elevations. • Draw nets of shapes. 	<ul style="list-style-type: none"> • Draw possibility space diagrams. • Read two way tables. • Identify all possible outcomes of two events. • Draw scatter diagrams and understand correlation. • Understand how mutually exclusivity affects combined and independent events. • Construct pie charts. • Construct and interpret frequency diagrams.
7	<ul style="list-style-type: none"> • Expand single and double brackets. • Solve simultaneous equations. • Solve problems using direct and inverse proportion. • Solve simple inequalities. • Multiply and divide by a number less than 1. • Estimate by rounding to one significant figure. 	<ul style="list-style-type: none"> • Calculate missing lengths using Pythagoras' Theorem. • Draw the locus of a point. • Solve problems using speed, distance, time and mass, volume, density. • Calculate lengths, areas and volume in shapes and prisms • Consider rounding accuracy when solving problems. 	<ul style="list-style-type: none"> • Select the most appropriate average. • Find modal class. • Understand and use relative frequency. • Draw a line of best fit on a scatter diagram. • Make and test a hypothesis. • Use and interpret frequency polygons.
8	<ul style="list-style-type: none"> • Sketch linear, quadratic, cubic and reciprocal graphs. • Factorise quadratic expressions. • Multiply out two linear expressions. • Rearrange algebraic formulae. • Convert numbers in and out of standard form. 	<ul style="list-style-type: none"> • Use congruency and similarity • Use sine, cosine and tangent in right-angled triangles. 	<ul style="list-style-type: none"> • Use and draw cumulative frequency diagrams. • Estimate the median & interquartile range from a cumulative frequency diagram. • Use tree diagrams to calculate probabilities. • Use multiplication and addition rules of probability.