



Year 9 Higher Expected Standards



	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8/9
	Prior knowledge	Working towards Y9H Expected standards	Working towards Y9H Expected standards Plus	Meeting Y9H Expected standards	Working above Y9H Standard	Working well above Y9H Standard
Number, Ratio, Proportion and Rates of Change	<p>Use compound measures: density, speed.</p> <p>Convert numbers into and out of standard form</p> <p>Use the laws of indices to multiply and divide numbers written in index notations</p>	<p>Multiply and divide decimals</p> <p>Use a multiplier to increase or decrease by a percentage</p> <p>Indices</p>	<p>Write number as the product of its prime factors</p> <p>Add and subtract fractions</p> <p>Reverse percentages</p> <p>Ratio Fraction problems</p> <p>Direct and inverse proportion</p>	<p>Calculate the new volume of a shape after enlargement</p> <p>Recurring Decimals to fractions</p> <p>Repeated Percentage change</p> <p>The Product rule for counting</p>	<p>Simplify expressions involving surds</p> <p>Rationalise the denominator of a fraction</p> <p>Recognise, sketch and interpret graphs of exponential functions $y = k^x$</p>	<p>Calculate the upper and lower bounds of area and density</p>
Algebra	<p>Plot graphs given in the form $y = mx + c$</p> <p>Draw distance-time and velocity-time graphs</p> <p>Solve simultaneous equations</p>	<p>Solve quadratic equations by factorising</p> <p>Rearrange simple equations</p> <p>Graphs of quadratic functions</p> <p>Solve linear inequalities in one variable</p>	<p>Solve equations with unknown on both sides</p> <p>Substitute positive and negative numbers into formulae</p>	<p>Use iteration with simple converging sequences</p> <p>Nth term of quadratic sequences</p> <p>Algebraic fractions</p>	<p>Apply to the graph of $y = f(x)$ the transformations $y = f(x) + a$, $y = f(x + a)$, $y = af(x)$, $y = f(ax)$ for linear, quadratic, cubic, sine and cosine functions $f(x)$</p>	<p>Find the inverse of a function</p> <p>Recognise, sketch and interpret graphs of trigonometric functions for sin, cos and tan within the range -360° to $+360^\circ$</p>
Geometry and Measures	<p>Use the formulae for area and circumference of a circle</p> <p>Find the volume and surface area of prisms</p>	<p>Use constructions to show locus of a point</p> <p>Begin to use trigonometry to find the size of an angle in a right-angle triangle</p>	<p>Solve angle problems involving parallel and intersecting lines, triangles and polygons</p> <p>Apply Pythagoras' Theorem to solve problems</p>	<p>Apply vector methods for simple geometrical proofs</p> <p>Prove lines are parallel or co-linear</p>	<p>Know and apply formula $A = \frac{1}{2}ab \sin C$ to calculate the sides or angles of any triangle</p> <p>Use the sine and cosine rules to solve 2D and 3D problems</p>	<p>Use the formulae for length of arcs and area of sectors of circles to solve problems</p>
Statistics and Probability	<p>Draw and use sample space diagrams</p> <p>Recognise the advantages and disadvantages between measures of averages</p>	<p>Find the range, modal class, interval containing the median and an estimate of the mean from a grouped frequency table</p> <p>Draw and interpret scatter graphs</p>	<p>Draw pie charts and box plots</p>	<p>Estimate the median from a histogram with unequal class width</p>	<p>Stratified sampling – know the definition and state in terms of proportion, fraction, percentage or ratio</p>	<p>Use a tree diagram to calculate conditional probability</p> <p>Construct and interpret histograms from class intervals with unequal width</p>