

	Year 7					
A Calculations	Add and subtract proper fractions and mixed numbers with different denominators and be able to predict if the answer will be greater or less than a whole. Multiply and fractions and hence decimals by changing them to their fraction equivalence first. Calculate a percentage of a quantity and solve simple interest problems.					
B Number System	Order positive and negatives fractions and decimals. Convert between factions, decimals and percentages. Round numbers to 2 decimal places and 1 significant figure.					
C Indices	Use index laws with numerical and algebraic expressions involving multiplication and division of integer powers. Express a number as a product of its prime factors. Derive a formula from words or function machine and in simple cases, change its subject.					
D Equations and Formulae	Manipulate algebraic expressions by expanding, simplifying and basic linear factorising. Solve two step linear equations and inequalities with integer coefficients with the unknown on one side and check by substitution. Understand the difference between expressions, equations, formulae and identities.					
E Proportion	Understand and use the unitary method and common multiples when solving problems involving direct proportion. Simplify a ratio and write in the form 1:n or n:1. Interpret scales and maps using ratio. Express a ratio as a fraction of a whole and use this to share in a given ratio.					
F Mensuration	Know and use formulae for area and perimeter of common triangles and quadrilaterals. Find volumes of shapes made from cuboids.					
G Graphs and Sequences	Use the nth term to generate a linear, quadratic sequence, including triangular numbers, geometric and cubic functions. Plot simple linear, quadratic and cubic functions. Use the x, or y, coordinates of a given graph to calculate the corresponding y or x coordinate, graphically or through substitution.					
H Transformations	Understand congruence in the context of reflections and rotations. Reflect a shape in a named line. Rotate a shape given the coordinate, angle and direction of rotation.					
I Angles	Calculate and use the sums of the interior and exterior angles of quadrilaterals, pentagons and hexagons. Identify and calculate missing angles using alternate, corresponding co-interior angles of parallel lines.					
J Probability	Understand and use frequency trees.					
K Handling Data	Calculate, use and interpret the statistical measures mode, median, mean and range for discrete data, including comparing distributions. Interpret graphs representing real data, including pie charts and recognise misleading diagrams.					
L Constructions	Construct triangles using a ruler and protractor only given information about their sides and angles; Construct nets of 3D shapes.					
	Know	Use	Apply	Problem Solve	Reason	

	Year 8
Cycle 1	Proportional Reasoning <ul style="list-style-type: none">• Ratio and scale• Multiplicative change• Multiplying and dividing fractions Representations <ul style="list-style-type: none">• Working in the Cartesian plane• Representing data
Cycle 2	Algebraic Techniques <ul style="list-style-type: none">• Brackets, equations and inequalities• Sequences• Indices Developing Number <ul style="list-style-type: none">• Fractions and percentages• Standard Index form• Number sense
Cycle 3	Developing Geometry <ul style="list-style-type: none">• Angles in parallel lines and polygons• Area of trapezia and circles• Line symmetry and reflection Reasoning with Data <ul style="list-style-type: none">• The data handling cycle• Measures of location

	Year 9				
A Calculations	Use multipliers to solve problems involving repeated percentage change, compound interest and reverse percentages. Convert between fractions, decimals and percentages to find the most appropriate method to use in a calculation.				
B Number System	Solve problems involving numbers expressed in standard index form with and without a calculator. Error Intervals using inequality notation. Recognise that measurements given to the nearest whole unit may be inaccurate by up to half a unit in either direction.				
C Indices	Understand that even powers and roots are always positive but odd can be positive or negative. Substitute values into complex expressions and formulae involving powers and roots (including all formulae expected to be recalled for maths exam). Simplify algebraic expressions using multiplication and division of integer powers. Index laws with integer powers. Use algebraic manipulation skills to prove simple identities (using $2n$ and $2n+1$ to represent odd and even numbers) and multiples.				
D Equations and Formulae	Factorise quadratic expressions and solve quadratic equations where the coefficient of x^2 is 1 (including the difference of two squares). Solve pairs of linear simultaneous equations through elimination.				
E Proportion	Direct and inverse proportion write relationships and recognise graphs.				
F Mensuration	Know and use formulae for volume and surface area of all prisms, pyramids, spheres and cones, including frustums. Use Pythagoras' theorem to solve problems involving right angled triangles. Change freely between standard and compound units. Use compound measures such as speed and density.				
G Graphs and Sequences	Find equations of lines from two coordinates or a coordinate and a gradient and by rearranging. Find the midpoint and length of a line segment. Solve a quadratic by identifying its roots on a graph and link to its factorised form.				
H Transformations	Transform 2D shapes by a combination of reflection, rotation and translation including the use of vector notation. Describe the resultant image as a single transformation.				
I Angles	Explore the angle and side ratios of equilateral and isosceles right angles triangles. Use an understanding of similar shapes to find missing sides and angles within right angled triangles. Know exact values of sin cos tan 30 45 60 and 90.				
J Probability	Use Venn diagrams to solve problems with probability. Use tree diagrams to calculate probabilities of successive or combined events. Apply the AND/OR rule for combined or successive events.				
K Handling Data	Select, construct and modify, on paper and using ICT suitable graphical representation to progress an enquiry including trends in time series and lines of best fit on scatter graphs.				
L Constructions	Construct triangles and other 2-D shapes using a ruler and a protractor, given information about their sides and angles. Understand and use SSS, SAS, ASA and RHS condition to prove the congruence of triangles. Use congruence to show that translations, reflections and rotations preserve length and angle. Use standard constructions to create a scale drawing. Use straight edge and compasses to produce standard constructions including the midpoint and perpendicular bisector of a line segment, the perpendicular from a point to a line, and the bisector of an angle.				
	Know	Use	Apply	Problem Solve	Reason