

Year 7

Autumn 1 Solve word problems (add and subtract)	Autumn 2 Explain and investigate (multiply and divide)	Spring 1 Geometry	Spring 2 Fractions	Summer 1 Applications of algebra	Summer 2 Percentages and statistics
All should be confident and competent in Key Stage 2 material. Review of these prerequisites may be useful for each unit:					
<ul style="list-style-type: none"> • Number bonds • Convert units • Money +/- • Measurement 	<ul style="list-style-type: none"> • Mental strategies • Multiplication facts • Multiplication strategies • Solve number problems 	<ul style="list-style-type: none"> • Lengths and units • Parallel and perpendicular • Work with angles • Division and the mean 	<ul style="list-style-type: none"> • Equal parts • Factors and multiples • Tenths and hundredths • Word problems • Fractional areas 	<ul style="list-style-type: none"> • Areas of rectangles and triangles • Number patterns • Algebraic notation • Triangle and quadrilateral properties 	<ul style="list-style-type: none"> • Decimals and problem solving • Fractions of shapes • Equivalence • Order of operations
All will have access to this specific Key Stage 3 content:					
<ul style="list-style-type: none"> • Place value (including decimals) • Add and subtract (including decimals) • Estimation • Perimeter • Word problems 	<ul style="list-style-type: none"> • Factors, HCF, multiples, LCM • Multiply and divide (including decimals) • Area of rectangle and triangle • Calculate the mean 	<ul style="list-style-type: none"> • Draw, measure and name acute and obtuse angles • Find unknown angles (straight lines, at a point, vertically opposite) • Properties of triangles and quadrilaterals 	<ul style="list-style-type: none"> • Equivalent fractions • Compare and order fractions and decimals • Change mixed numbers to improper fractions and vice versa • Fraction of a quantity • Multiply and divide fractions 	<ul style="list-style-type: none"> • Order of operations • Substitution • Simplify algebraic expressions • Solve word problems with expressions • Sequences (term-to-term, not nth term) 	<ul style="list-style-type: none"> • Construct and interpret statistical diagrams including pie charts • Convert between percentages, vulgar fractions and decimals • Percentage of a quantity • Find the whole, given the part and the percentage
As well as looking at the termly projects, highest attaining students may be stretched through depth by consideration of the following:					
<ul style="list-style-type: none"> • Different counting systems or bases • Generalisation • Upper and lower bounds 	<ul style="list-style-type: none"> • Shikaku puzzles • Different counting systems or bases • Alternative methods of multiplication • Generalisation 	<ul style="list-style-type: none"> • Tessellating triangles and quadrilaterals • Tangram investigations • Rigid shapes 	<ul style="list-style-type: none"> • Terminating and recurring decimals • Fractions of tangrams • Shape block challenges 	<ul style="list-style-type: none"> • Four fours • Patterns and generalising • Algebraic mean questions 	<ul style="list-style-type: none"> • Comparing and converting between representations • Applications of percentages

Year 8

Autumn 1 Number	Autumn 2 Algebraic expressions	Spring 1 2-D geometry	Spring 2 Proportional reasoning	Summer 1 3-D geometry	Summer 2 Statistics
<i>All should be confident and competent with Year 7 material. Review of these prerequisites may be useful for each unit:</i>					
<ul style="list-style-type: none"> • Factors, multiples and primes • Multiplication and division • Fraction equivalence and calculations 	<ul style="list-style-type: none"> • Problem solving with fractions • Order of operations • Form algebraic expressions • Substitution 	<ul style="list-style-type: none"> • Angle types • Angle facts • Rectangle and triangle areas • \times/\div by powers of 10 • Problem solving with negative numbers 	<ul style="list-style-type: none"> • Rounding • Bar modelling with fractions • Fraction \times/\div • Bar modelling with equations • FDP equivalence 	<ul style="list-style-type: none"> • Rectilinear areas • Fraction $+/-$ • Problem solving with fractions • Percentage increase and decrease • Substitution with negatives 	<ul style="list-style-type: none"> • Statistical diagrams • Ratio and rate • The mean • Calculator skills and rounding
<i>All will have access to this specific Key Stage 3 content:</i>					
<ul style="list-style-type: none"> • Primes and indices • Prime factorisation to find LCM, HCF, squares, cubes • Venn diagrams • Enumerating sets • Add and subtract fractions 	<ul style="list-style-type: none"> • Negative numbers and inequality statements • Formulate and evaluate expressions • Linear equations • Expressions and equations from real-world situations • Linear sequences: nth term 	<ul style="list-style-type: none"> • Draw accurate triangles and quadrilaterals (ruler, protractor, compasses) • Find unknown angles (including parallel lines) • Conversion between length units and between area units • Areas and perimeters of composite figures • Areas of parallelograms and trapeziums 	<ul style="list-style-type: none"> • Convert between percentages, vulgar fractions and decimals • Percentage increase and decrease, finding the whole given the part and the percentage • Ratio (equivalent, of a quantity) and rate • Speed, distance, time 	<ul style="list-style-type: none"> • Rounding, significant figures and estimation • Circumference and area of a circle • Visualise and identify 3-D shapes and their nets • Volume of cuboid, prism, cylinder, composite solids 	<ul style="list-style-type: none"> • Collect and organise data • Interpret and compare statistical representations • Mean, median and mode averages • The range and outliers
<i>As well as looking at the termly projects, highest attaining students may be stretched through depth by consideration of the following:</i>					
<ul style="list-style-type: none"> • Egyptian fractions • Continued fractions • HCF and LCM generalisation 	<ul style="list-style-type: none"> • Explore non-linear sequences • T-totals 	<ul style="list-style-type: none"> • Similarity and ratio • Complex constructions • Simple angle proofs 	<ul style="list-style-type: none"> • Density • Area scale factors • Loan repayment 	<ul style="list-style-type: none"> • Platonic solids • Percentage errors • Plans and elevations 	<ul style="list-style-type: none"> • Misleading graphs • Equal width histograms • Sampling methods

Year 9

Autumn 1 Graphs and proportion	Autumn 2 Algebraic expressions	Spring 1 2-D geometry	Spring 2 Equations and inequalities	Summer 1 Geometry	Summer 2 Statistics
<i>All should be confident and competent with Year 7 and 8 materials. Review of these prerequisites may be useful for each unit:</i>					
<ul style="list-style-type: none"> • Read scales • Linear equations • Proportion • Percentage increase and decrease 	<ul style="list-style-type: none"> • Make expressions • Expressions and area • Substitution • Powers and roots • Problem solving with a calculator 	<ul style="list-style-type: none"> • Area and circumference • Angles on lines and in triangles • Angles in parallel lines • Pie charts 	<ul style="list-style-type: none"> • Linear graphs • Sequences • Manipulate formulae • Problem solving with algebra 	<ul style="list-style-type: none"> • Compound areas • FDP conversion • Averages and the range 	<ul style="list-style-type: none"> • Venn diagrams and two-way tables • Powers of 10 and standard form • Number problems with fractions and decimals • Problem solving with algebra
<i>All will have access to this specific Key Stage 3 content:</i>					
<ul style="list-style-type: none"> • Cartesian coordinates • Linear graphs • Direct and inverse proportion • Calculate with scales • Standard form 	<ul style="list-style-type: none"> • Sequences including arithmetic and geometric • Algebraic manipulation • Change the subject of a formula • Expansion • Factorisation 	<ul style="list-style-type: none"> • Construction and loci • Triangles and quadrilaterals (angles on diagonals) • Congruence and similarity • Angles in polygons 	<ul style="list-style-type: none"> • Construct and solve equations and inequalities • Graphical solutions to simultaneous linear equations • Quadratic and other graphs 	<ul style="list-style-type: none"> • Pythagoras' theorem • Exploring trigonometry with a 30-60-90 triangle • Transformations (translation, rotation, reflection) • Use known angle and shape facts to obtain simple proofs 	<ul style="list-style-type: none"> • Probability Mean of grouped data • Compare two data sets • Stem-and-leaf diagrams • Scatter graphs
<i>As well as looking at the termly projects, highest attaining students may be stretched through depth by consideration of the following:</i>					
<ul style="list-style-type: none"> • 3-D coordinates • Explore linear and non-linear graphs 	<ul style="list-style-type: none"> • Algebraic proof 	<ul style="list-style-type: none"> • Geometrical proof • Euclidean geometry • Complex constructions 	<ul style="list-style-type: none"> • Regions on graphs • Linear programming • Modelling 	<ul style="list-style-type: none"> • Further trigonometry • Multiple transformations • 3-D Pythagoras 	<ul style="list-style-type: none"> • Probability problems • Equations of lines of best fit
<i>Throughout Year 9</i>					
<ul style="list-style-type: none"> • Approximation and significant figures • Addition, subtraction, multiplication and division with whole numbers, fractions and decimals • Percentage increase and decrease, finding the whole given the part and the percentage 					