

Mathematics Programme of Study - Year 7 (2.4-2.5)



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	
Autumn	Algebraic Thinking						Place Value and Proportion						
	Sequences <ul style="list-style-type: none"> Describe and continue sequences in diagram and number forms, both linear and non-linear. 		Understanding and Using Algebraic Notation <ul style="list-style-type: none"> Using single function machines and series of two function machines with numbers, bar models and letters. Forming and substituting into expressions, including generating sequences. Representing functions graphically 			Equality and Equivalence <ul style="list-style-type: none"> Understanding equality and fact families. Forming and solving one-step equations. Understanding equivalence. Collecting like terms. 		Place Value and Ordering <ul style="list-style-type: none"> Describe and continue sequences in diagram and number forms, both linear and non-linear. Integer place value up to one billion. Decimal place value to hundredths. Working out and using number lines. Comparing and ordering numbers. The range and the median. Rounding to positive powers of 10 and to 1 significant figure. 			Fraction, Decimal and Percentage Equivalence <ul style="list-style-type: none"> Representing tenths and hundredths on diagrams and number lines. Interchanging between fractions, decimals and percentages for multiples of tenths and quarters. Interpreting pie charts. Equivalent fractions. Converting between any fraction, decimal and percentage 		
	Notes/Links/Interleaving <ul style="list-style-type: none"> Use of calculator throughout, including informal estimation. All revisited and extended in the next unit. 			Additional Higher Content This introductory unit is designed to be accessed by all learners - different tasks will be determined based on prior data.			Notes/Links/Interleaving <ul style="list-style-type: none"> Revisit simplifying and equations with negatives. Equations with fractions, including fractional coefficients. Revisit FDP equivalence. Fractional sequences. 			Additional Higher Content <ul style="list-style-type: none"> Exploring and using standard index form. Exploring fractions above one. 			
Spring	Application of Number						Directed Number			Fractional Thinking			
	Addition and Subtraction <ul style="list-style-type: none"> Use formal methods of addition with integers and decimals. Solve problems in the context of perimeter, money and frequency trees and tables. 		Multiplication and Division <ul style="list-style-type: none"> Multiplying by 10, 100 and 1,000; unit conversions Formal methods of multiplication and division. HCF and LCM. Areas of triangles, rectangles and parallelograms. Finding the mean. Finding fractions and percentages of amounts. Solving two-step equations (with and without a calculator) Introduction to the order of operations. 				Negative Numbers <ul style="list-style-type: none"> Ordering directed numbers with or without context. Revisit four operations to include directed number. Using a calculator with directed number. Order of operations. 			Adding and Subtracting Fractions <ul style="list-style-type: none"> Representing tenths and hundredths on diagrams and number lines. Adding/subtracting fractions with a common denominator, including with answers above one. Revisit equivalent fractions. Adding and subtracting fractions with simple different denominations e.g. quarters/eighths, thirds/sixths. Mixed questions e.g. $3/4 + 0.2$ 			
	Notes/Links/Interleaving <ul style="list-style-type: none"> Perimeter problems to revisit equations and simplifying. Tables to include distance charts and simple timetables. Revisit rounding. Choosing when to use mental, written or calculator methods. Order of operations to be revisited with negative numbers. 			Additional Higher Content <ul style="list-style-type: none"> Addition in standard form. Area of a trapezium. Algebraic HF/LCM. Algebraic area. Improper fractions. 			Notes/Links/Interleaving <ul style="list-style-type: none"> Include inequality number lines. Revisit sequences, substitution and equations. 			Additional Higher Content <ul style="list-style-type: none"> Negative square roots. Add and subtract fractions with any denominators. Add and subtract simple algebraic fractions. 			
Summer	Lines and Angles						Reasoning with Number						
	Drawing, Measuring and Notation <ul style="list-style-type: none"> Drawing and measuring lines and angles using ruler and protractor. Understanding and using notation for lines and angles. Understand parallel and perpendicular. Recognise types of triangle, quadrilateral and other polygons. Drawing triangles given SSS, SAS, ASA. Drawing and interpreting pie charts. 			Geometric Reasoning <ul style="list-style-type: none"> Calculating using angles at a point, angles on a straight line and vertically opposite angles. Calculate missing angles in triangles and quadrilaterals. 			Number Sense <ul style="list-style-type: none"> Mental arithmetic strategies. Using known facts to derive other facts, including algebraic expressions. 		Sets and Probability <ul style="list-style-type: none"> Understanding and using set notation. Venn diagrams. Probability of a single event. 		Prime Numbers and Proof <ul style="list-style-type: none"> Types of number, including prime factorisation. Powers and roots. Using counterexamples. 		
	Notes/Links/Interleaving <ul style="list-style-type: none"> Perimeter problems to revisit equations and simplifying. Forming and solving equations in geometric settings (including simplifying). Revisiting formal methods of addition and subtraction, including with decimals. 			Additional Higher Content <ul style="list-style-type: none"> Addition in standard form. Parallel line rules. Angles in a polygon. Proof of angles rules e.g. angles in a triangle. 			Notes/Links/Interleaving <ul style="list-style-type: none"> Revisiting FDP. Revisiting expressions e.g. given $7n = 150$ what is the value of $21n$? 			Additional Higher Content <ul style="list-style-type: none"> Venn diagrams for HCF and LCM. 			

Mathematics Programme of Study - Year 8 (2.6-2.8)



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Proportional Reasoning						Representations					
	Ratio and Scale <ul style="list-style-type: none"> Understand ratio and its link to multiplication. Circumference of a circle. Use of ratio notation. Reduce ratios to simplest form. Solve ratio problems. 		Multiplicative Change <ul style="list-style-type: none"> Use scale factors, linking to ratio, to solve simple direct proportion problems. Scale diagrams and maps. 		Multiplying and Dividing Fractions <ul style="list-style-type: none"> Multiplying and dividing a fraction by an integer. Multiplying and dividing a fraction by a fraction. 		Working in the Cartesian Plane <ul style="list-style-type: none"> Plotting and interpreting straight line graphs. Equations of lines parallel to the axes. Model situations by translating them into expressions, formulae and graphs. 			Presenting Data <ul style="list-style-type: none"> Scatter graphs and correlation. Designing and using one and two-way tables. Listing outcomes. 		Probability <ul style="list-style-type: none"> Using sample space diagrams. Using tables.
	Notes/Links/Interleaving <ul style="list-style-type: none"> Revisit area. Revisit equations. Revisit addition and subtraction of fractions. Link to fractions of an amount. Revisit drawing angles. 			Additional Higher Content <ul style="list-style-type: none"> Ratio in the form $1:n$. Comparing ratios. Area of a circle. Multiplying and dividing mixed numbers. 			Notes/Links/Interleaving <ul style="list-style-type: none"> Revisit negatives. Link to solving linear equations. Revisiting Venn diagrams and set notation. Links to representing data and using graphs in other areas of the curriculum. 			Additional Higher Content <ul style="list-style-type: none"> Finding the equation of a straight line. Finding the mid-point of a line segment. Drawing quadratic graphs. Product rule for counting. 		
Spring	Algebraic Techniques						Developing Number					
	Brackets, Equations and Inequalities <ul style="list-style-type: none"> Multiplying out single brackets. Forming and using expressions, formulae and identities. Forming and solving equations and inequalities with and without brackets. 				Sequences <ul style="list-style-type: none"> Using more complex rules e.g. with brackets and squared terms. 	Indices <ul style="list-style-type: none"> Writing expressions with powers. 	Fractions and Percentages <ul style="list-style-type: none"> Revisit fraction, decimal and percentage equivalence. One number as a percentage of another. 		Standard Index Form <ul style="list-style-type: none"> Conversion between numbers in ordinary and standard form. Comparing numbers in standard form. 		Number Sense <ul style="list-style-type: none"> Developing mental strategies. Measuring and units. Estimation, including rounding to a given number of decimal places. Revisit order of operations. 	
	Notes/Links/Interleaving <ul style="list-style-type: none"> Equations set in the context of earlier contexts - shapes, angles, probability, ratio etc. 			Additional Higher Content <ul style="list-style-type: none"> Factorising into a single bracket. Expanding binomials. Solving equations with unknowns on both sides. Find the rule for the n^{th} term of a linear sequence. 			Notes/Links/Interleaving <ul style="list-style-type: none"> Revisit formal methods for calculation. 			Additional Higher Content <ul style="list-style-type: none"> Finding the original given any percentage. Simple surds. Calculating with standard form. Negative and simple fractional indices. Converting area units. Error interval notation. 		
Summer	Developing Geometry						Reasoning with Data					
	Angles in Parallel Lines and Polygons <ul style="list-style-type: none"> Review Y7 angles rules. Parallel lines and angles. Revisit geometric notation. Angles in special quadrilaterals. Angles in a polygon. 			Area of a Trapezium and Circle <ul style="list-style-type: none"> Review area of shapes covered in Y7. Area of a trapezium. Area of a circle and parts of a circle. Using significant figures. Area of compound shapes. 		Line of Symmetry and Reflection <ul style="list-style-type: none"> Line symmetry in polygons and other shapes. Reflections of shapes in horizontal, vertical and diagonal lines. 	The Data Handling Cycle <ul style="list-style-type: none"> Collecting data. Interpreting statistical diagrams. Dual bar charts. Constructing and interpreting pie charts. 			Measures of Location and Dispersion <ul style="list-style-type: none"> Median and mean revisited, including finding the total. Mean for grouped data. The mode. Choosing the appropriate average. Revisit finding the range. Comparing distributions. 		
	Notes/Links/Interleaving <ul style="list-style-type: none"> Revisit fractions. Revisit shape properties. Revisit equations of lines. 			Additional Higher Content <ul style="list-style-type: none"> Standard constructions including perpendiculars. Diagonal properties of quadrilaterals. 			Notes/Links/Interleaving <ul style="list-style-type: none"> Use algebraic substitution to form lists for averages and the range. Links to data collection in other areas of the curriculum. 			Additional Higher Content <ul style="list-style-type: none"> Mean of grouped data. Finding the unknown data values given the mean or changes in the mean. 		

Mathematics Programme of Study - Year 9 (3.0-3.8)



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Reasoning with Algebra						Constructing in 2 and 3 Dimensions					
	Straight Line Graphs <ul style="list-style-type: none"> Interpreting straight line graphs. Finding the equation of a straight line. Compare to linear sequences and finding the rule for the n^{th} term. 		Forming and Solving Equations <ul style="list-style-type: none"> Using all previous contexts: angles, probability, area. 		Testing Conjectures <ul style="list-style-type: none"> Conjectures about odd and even numbers, primes. Is a given term in a sequence? Are these lines parallel? What would happen if...? 		Three Dimensional Shapes <ul style="list-style-type: none"> Faces, edges and vertices. Names of prisms and non-prisms. Identifying 2D shapes within 3D shapes. Volume and surface area of cuboids and cylinders. Volume of any prism. 			Constructions and Congruency <ul style="list-style-type: none"> Nets. Scale drawing. Constructing perpendiculars and bisectors. Exploring congruency via construction. 		
	Notes/Links/Interleaving <ul style="list-style-type: none"> Link equations of graphs to solving equations. Revisiting of key topics through equations. Review brackets. Review geometric properties and rules. 			Additional Higher Content <ul style="list-style-type: none"> Solving simultaneous equations graphically. Changing the subject of a formula. 			Notes/Links/Interleaving <ul style="list-style-type: none"> Revisit estimation. Revisit rounding to nearest integer, decimal places, and significant figures. Revisit unit conversions. 			Additional Higher Content <ul style="list-style-type: none"> Converting between volume units. Surface area of any prism. Loci. 		
Spring	Reasoning with Number						Reasoning with Geometry					
	Numbers <ul style="list-style-type: none"> Types of number. HCF and LCM. Revisit standard form. 		Using Percentages <ul style="list-style-type: none"> Percentage increase and decrease. Percentages over 100%. Finding percentage change. Using multipliers. 		Mathematics and Money <ul style="list-style-type: none"> Wages and taxes. Bills and bank statements. Interest. Unit pricing (best buys) 		Deductions <ul style="list-style-type: none"> Revisit angles rules, including within special quadrilaterals and algebraic situations. 		Rotation and Translation <ul style="list-style-type: none"> Identifying the order of rotational symmetry. Rotating shapes. Translating points and shapes. 		Pythagoras' Theorem <ul style="list-style-type: none"> Identifying the hypotenuse of a right-angled triangle. Determining whether a triangle is right-angled. Calculating missing sides in right-angle triangles. 	
	Notes/Links/Interleaving <ul style="list-style-type: none"> Adding fractions (lowest common denominator). FDP equivalence. Ratio. 			Additional Higher Content <ul style="list-style-type: none"> Reverse percentages. Repeated percentage change. 			Notes/Links/Interleaving <ul style="list-style-type: none"> Revisit fractions and directed number in context of rotation. Compare and contrast with line symmetry. Identifying 2D and 3D shapes. Revisit constructions. 			Additional Higher Content <ul style="list-style-type: none"> Angles proofs. Combined transformations. Exploring proofs of Pythagoras' theorem. Using Pythagoras' theorem in 3D shapes. 		
Summer	Reasoning with Proportion						Representations					
	Enlargement and Similarity <ul style="list-style-type: none"> Enlarge shapes by a positive scale factor, including from a given point. Calculate the lengths of missing sides in similar shapes. 		Solving Ratio and Proportion <ul style="list-style-type: none"> Direct proportion problems and graphs. Conversion graphs. Solving ratio problems given the whole or a part. 		Rates <ul style="list-style-type: none"> Speed, distance, time. Density. Working with compound units. 		Solving Problems using Graphs, Tables and Algebra <ul style="list-style-type: none"> Revisit data charts and graphs including bivariate data. Revisiting sequences. Revisiting frequency trees. Revisiting standard form. Tables and timetables. Inequalities on number lines, including error intervals. Misleading graphs. Representing word problems in a variety of forms (graphs, tables, expressions...) Interpreting graphs of any form (exponential, piecewise...) Probability. 					
	Notes/Links/Interleaving <ul style="list-style-type: none"> Links to ratio notation. Revisit circumference. Revisit $y = mx$ Revisit unit pricing. 			Additional Higher Content <ul style="list-style-type: none"> Enlarge shapes by a negative scale factor. Similar triangles. Inverse proportion graphs. Converting compound measures. 			Notes/Links/Interleaving <ul style="list-style-type: none"> Throughout - see above. 			Additional Higher Content <ul style="list-style-type: none"> Forming and solving linear simultaneous equations. 		