	Substantive content	Links to previous learning	Interleaving opportunities	Key Mathematical skills used	Vocabulary
Y7 LC1	• Describe and continue sequences in diagram and number forms, both linear and not linear. • Using single function machines • Using a series of two function machines. • Forming and substituting into expression, including generating sequences. • Representing functions graphically • Understand equality and fact families • Forming and solving one-step equations • Understanding equivalence • Collecting like terms • 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	Y7LC1 Decimal place value, working out and using number lines, comparing and ordering	Area and volume (square and cube numbers) Tables of values/straight line graphs Tables of values/straight line graphs Forming expressions for area and perimeter of shapes Conversion graphs and real-life graphs eg. Taxi fares Area using different units Balance and equilibrium FDP, ratio, best buys, currency conversions, unit conversions Forming expressions for perimeter	Pattern recognition Equivalence Equivalence Equivalence Equivalence Equivalence Problem solving Equivalence Concept of size Concept of size Pictorial representation Concept of size Concept of size Concept of size	Sequence Term Position Rule Term-to-term Table Graph Axes Linear Non-linear Difference Constant Difference Ascending Descending Arithmetic Geometric Second difference Fibonacci Function Input Output Estimate Operation Square Inverse Variable Coefficient Commutative Expression Evaluate Substitute Bracket Order Constant Curve Scale Rule

	positive powers of ten and to on significant figure	numbers Y7LC2, Y8LC3 Addition,	Ordering, addition, subtraction, division		Position-to-term Equality Equals Equation Fact family Solve Solution Unknown Inverse Term Like Unlike Collect Coefficient Index Equivalent Simplify Place value Digit Integer Placeholder Interval Scale Approximate Round Equal Not equal Less than More than Order Ascending Descending Range Median Average Tenth Hundredth Decimal Significant figure

					Power Index Standard form
Y7 LC2	• Representing tenths and hundredths on diagrams and number lines • Interchanging between fractions, decimals and percentage for multiples of tenths and quarters • Interpreting pie charts • Equivalent fractions • Converting between any fraction, decimal and percentage • Use formal methods of addition with integers and decimals • Solve problems in the context of perimeter, money and frequency trees and tables • Multiplying by 10, 100 and 1000; unit conversions • Formal methods of multiplication and division • HCF and LCM • Areas of triangles, rectangles and parallelograms • Finding the mean	Decimal place value to 1 hundredth (Y7 LC1) Y7LC2 Fraction and percentages of the amount Decimal place value (y7 LC1) Decimal place value (Y7 LC1) Multiplication/Division	Exploring and using standard index form Exploring fractions greater than one Fractions, percentages Perimeter Simple timetables Use of decimal lengths in perimeter problems. Use of algebraic expressions for perimeter to form and solve one step equations Four rules	Pictorial representation/equivalence Equivalence Pictorial Representation Equivalence Equivalence Equivalence Pictorial Representation Concept of size Equivalence Problem solving Concept of size, problem solving, pictorial representation Interpretation of data	Equivalent Percent Convert Pie chart Sector Fraction Numerator Denominator Quotient Improper Mixed number Rational Recurring Total Sum Difference Commutative Associative Inverse Column method Carry Exchange Equation Polygon Perimeter Length Edges Units Row Column Frequency Frequency tree Axis Exponent Product

	• Finding fractions and percentages of amounts • Solving two-step equations (with and without a calculator) • Introduction to the order of operations	Solving one step equations/function machines (Y7 LC1)	Roots and indices	Problem solving	Multiply Odd Even Factor Array Venn diagram Multiple LCM Metric Milli- Centi- Kilo- Divisor Quotient Dividend Order Operation Base Perpendicular height Parallel Parallelogram
Y7 LC3	• Ordering directed numbers with and without context • Revisit four operations to include directed numbers • Using a calculator with directed numbers • Representing tenths and hundredths on diagrams and number lines • Adding/subtracting fraction with a common denominator, including	Using number lines (Y7 LC1) Comparing and ordering numbers (Y7 LC1) Using formal methods (y7 LC2) Representing tenths and hundredths on diagrams (Y7 LC2) Equivalent fractions (Y7 LC2)	Revisit sequences Substitution in equations		Positive Negative Symmetric Increase Decrease Add Subtract Minus $\pm$ Substitute Expression Equation Solve Solution Balance Function machine

	with answers above one • Revisit equivalent fractions • Adding and subtracting fractions with simple different denominators e.g quarters/eighths, thirds/sixths • Mixed questions e.g ¾ + 0.2 • 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 tringles given #SSS, SAS, ASA • Drawing and interpreting pie charts	Equivalent fractions (Y7 LC2) Converting between decimals and fractions (Y7 LC2) Represent tenths and hundredths on diagrams and number lines (Y7, LC2) Unit conversions (Y7, LC2) Y7LC2 Fraction and percentages of the amount Y7LC3 Drawing and measuring angles	Use of a protractor, angles, proportion, fraction	Concept of size, equivalence Pictorial representation	Brackets Square Square root Exponent Congruent Unit fraction LCM Common denominator Simplify Like term Collect Line Line segment Polygon Height Width Length Rotation Angle Degrees Acute Obtuse Reflex Right angle Interior Exterior Protractor Construct Triangle Equilateral Isosceles Scalene Square Rectangle Kite Rhombus Trapezium Edges

					Vertex Vertices Quadrilateral Pentagon Hexagon Heptagon Octagon Nonagon Decagon Pair of compasses Compound Diagonal Proportion
Y7 LC4	• Calculating using angles at a point, angles on a straight line and vertically opposite angles • Calculating missing angles in triangles and quadrilaterals • Mental arithmetic strategies • Using known facts to derive other facts, including algebraic expressions • Understanding and using set notation • Venn diagrams • Probability of a single event • Types of number, including prime factorisation • Powers and root	Measured and drawn angles and understood angle notation (Y7, LC3) Written method for addition and subtraction (Y7, LC2) Properties of triangles and quadrilaterals (Y7, LC3) Four rules (Y7 LC3) Algebraic notation (Y7 LC1) Y7LC1 Decimal place value, working out and using number lines, comparing and ordering numbers Y7LC2, Y8LC3 FDP equivalence Y7LC4 Types of number	Naming types of triangles and quadrilaterals based on their angles. Set up and solve one and two step equations. Revisiting FDP Angles, area, perimeter, related calculations Types of number, categorisation Logical representation of data Fractions, percentages, decimals	Concept of size, proof, problem solving. Equivalence Interpretation of data	Adjacent Intersect Vertically opposite Convex Concave Transversal Conjecture Alternate Corresponding Co-interior Proof Demonstration Overestimate Underestimate Equality Efficient Probability Set Event Outcome Union Intersection Prime Triangular number Counter-exampl

	• Using counter examples				
Y8 LC1	• Understanding ratio and its link to multiplication • Circumference of a circle • Use ration notation • Reduce ratios to simplest form • Solve ratio problems • Use scale factors, linking to ratio, to solve simple direct proportion problems • Scale diagrams and maps	Formal methods of multiplication and division (Y& LC2) Substitution into expressions and formulae (Y7, LC1) Unit conversions (Y7, LC2) Solving one step equations (Y7, LC1) Decimal place value (Y7, LC1), representing tenths	Links to fractions of an amount Solving equations to find radius or diameter given circumference. Using mixed units within questions Use of decimals, use of unit conversions from	Concept of size, problem solving. Pictorial representation, concept of size, equivalence.	

	• Multiplying and dividing a fraction by an integer • Multiplying and dividing a fraction by a fraction • Plotting and interpreting straight line graphs • Equations of lines parallel to the axes • Model situations by translating them into expressions, formulae and graphs	and hundredths on number lines (Y7, LC2), multiply by powers of 10 and unit conversions (Y7, LC2), measuring lines (Y7, LC3) Finding fractions and percentages of an amount (Y7 LC2) Representing functions graphically/substitution (Y7 LC1) Number patterns (Y7 LC1) Forming expressions and 1 step equations (Y7 LC1)	map scales (eg give answer in Km) Sequences Distance-time graphs Real-life straight line graphs e.g. mobile phone tariffs	Pictorial representation' Pattern recognition Problem solving	
Y8 LC2	• Scatter graphs and correlation • Designing and using one and two-way tables • Listing outcomes • Using sample space diagrams • Using tables • Multiplying out single brackets • Forming and using expressions, formulae and identities	Y8LC1 Plotting and interpreting straight line graphs Y7LC1 Describe and continue sequences Multiplying terms (Y7 LC1) Forming expressions (Y7 LC1)	Coordinates, straight line graphs Logical sequencing Area Algebraic manipulation, area, perimeter, angles	Pictorial representation, concept of size Equivalence Equivalence Pictorial representation	

	• Forming and solving equations and inequalities with and without brackets • Using more complex rules e.g with brackets and squared terms • Writing expressions with powers	Solving 2 step equations (Y7 LC2) Forming expressions (Y7 LC1) Forming expressions (Y7 LC1)	Area, perimeter, angles		
Y8 LC3	• Revisit fraction, decimal and percentage equivalence • One number as a percentage of another • Conversion between numbers in ordinary and standard form • Comparing numbers in standard form • Developing mental strategies • Measures and units	Equivalent fractions (Y7 LC2) Multiplying by 10, 100 and 1000 (Y7 LC2)	Revisit formal methods of calculation Use of decimals and fractions	Concept of size, equivalence, problem solving.	

	• Estimation, including rounding to a given number of decimal places • Revisit order of operations • Review Y7 angles rules • Parallel lines and angles • Revisit geometric notation • Angles in special quadrilaterals • Angles in a polygon	Multiplying by powers of 10 (Y7, LC2), area of rectangles (Y7, LC2) Rounding to positive powers of 10 and 1 Sig. Fig. (Y7 LC1) Recognition of parallel and perpendicular lines from graphs (Y7, LC3) Angles on a straight line, at a point, vertically opposite and in triangles and quadrilaterals (Y7, LC4)	Triangles and quadrilaterals formed within parallel lines. Use of properties of quadrilaterals to recognise allied angles. Use of protractor in investigation phase	Concept of size, equivalence, problem solving, proof	
Y8 LC4	• Review area of shapes covered in Y7 • Area of a trapezium • Area of a circle and parts of a circle • Using significant figures	Circumference of a circle (Y8, LC1) Finding mean (Y7, LC2) Fractions of amounts (Y7, LC2) Drawing pie charts (Y7, LC3) Estimating including rounding to a given number of decimal places (Y8 LC3)	Use of circumference to derive area formula	Concept of size Problem solving	

	• Area of compound shapes • Line symmetry in polygons and other shapes • Reflections of shapes on horizontal, vertical and diagonal lines • Collecting data • Interpreting statistical diagrams • Dual bar charts • Constructing and interpreting pie charts • Median and mean revisited, including finding the total • Mean for grouped data • The mode • Choosing the appropriate average • Revisit finding the range • Comparing distributions	Area of triangles, parallelograms and rectangles (Y7, LC2) Names of polygons (Y7, LC3) Y7LC3 Y7LC1 Decimal place value, working out and using number lines, comparing and ordering numbers Y7LC2 Addition, Subtraction, Multiplication, Division with integers and decimals. Order of operations. Y7LC2 Fraction and percentages of the amount	Four rules, angles, proportion, fraction, real-life examples	Problem solving	
Y9 LC1	• Interpreting straight line graphs • Finding the equation of a straight line	Equations of lines parallel to the axes (Y8 LC1)	Conversion graphs, kinematic graphs Sequences, pattern spotting	Pictorial representation	

	• Compare to linear sequences and finding the rule for the nth term • Using all previous contexts: angles, probability, area • Conjectures about odd and even number, primes • Is a given term in a sequence? • Are these lines parallel? • What would happen if…? • 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	Sequences (Y7 LC1), forming expressions (Y8 LC2) Types of numbers including primes (Y7 LC4) Substitution, solving equations (Y8 LC2) $y = mx + c$ (this LC) Area of triangles, rectangles and parallelograms (Y7 LC2) Recognise types of triangle, quadrilateral and other polygons (Y7 LC3) Area of trapezium (Y8 LC4) Area of circle and parts of circle (Y8 LC4) Unit Conversions (Y7, LC2)	Picture patterns, investigation opportunities Conversion graphs, kinematic graphs Fractional and decimal lengths Multiplying algebraic expressions Set up and solve equations	Pictorial representation Equivalence Problem solving Problem solving Concept of size	

Y9 LC2	• Nets • Scale drawing • Constructing perpendiculars and bisectors • Exploring congruency via construction • Types of number • HCF and LCM • Revisit standard form • Percentage increase and decrease • Percentages over 100% • Finding percentage change • Using multipliers • Wages and taxes • Bills and bank statements • Interest • Unit pricing (best buys)	Maps and scales (Y8, LC1) Drawing triangles given SSS, SAS, ASA (Y7, LC3) Use of protractor to measure angles (Y7, LC3) Notation for lines and angles (Y7, LC3) HCF LCM (Y7 LC2) Standard form (Y8 LC3) Find fraction and percentage of amounts (Y7 LC2) Equivalent fractions (Y7 LC3) Converting between fractions and decimals (Y7 LC2) Using ratio notation (Y8 LC1)	Area of rectangles Unit conversions Venn diagrams FDP equivalence Ratio	Concept of size Proof Equivalence	

Y9 LC3	• Revisit angles rules, including within special quadrilaterals and algebraic situations • Identifying the order of rotational symmetry • Rotating shapes • Translating points and shapes • Identifying the hypotenuse of a right-angled triangles • Determining whether a triangle is right-angled • Calculating missing sides in right-angled triangles • Enlarge shapes by a positive scale factor, including from a given point • Calculate the lengths of missing sides in similar shapes • Direct proportion problems and graphs • Conversion graphs • Solving ratio problems given the whole or a part	Use of coordinates (Y7, LC1, Y9,LC1) Types of triangle (Y7, LC3) Squares and square roots (Y7, LC4) Solving two step equations (Y7, LC2) Scale diagrams (Yr8, LC1) Understanding ratio and its link to multiplication (Yr8, LC1) Use scale factors (Yr8, LC1) Using ratio notations (Y8 LC1)	Link to congruence Finding the area of a triangle Pythagoras Multiplying and dividing by fractions and decimals Scale factor of 1 for congruency	Concept of size Concept of size, Proof Problem solving	

Y9 LC4	• Speed, distance, time • Density • Working with compound units • 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 interval • Misleading graphs • Representing word problems in a variety of forms (graphs, tables, expressions…)	Solving Equations (Yr7, LC3) Substituting into expression (Y7, LC1) Measures and units (Y8, LC3) Interpreting straight line graphs (Y9, LC1) Y8LC1, Y9LC1 Plotting and interpreting straight line graphs Y8LC3 Measures and units nth terms (Y9 LC1), graphs of functions (Y9 LC1) Y7LC2 problem solving with frequency trees Unit conversion (Y7, LC2) Designing and using 1 and 2 way tables (Y8, LC2) Y8LC1, Y9LC1 Plotting and interpreting straight line graphs Y7LC1 Working out and using number lines, comparing and ordering numbers Y7LC2, Y8LC3 FDP equivalence	Converting compound units Coordinates, straight line graphs Units Problem solving e.g. 1 step, 2 step (nrich) e.g.2. Frog hopping investigation HCF and LCM Pie charts, line graphs, bar charts Fractions, percentages	Equivalence Problem solving Concept of size Equivalence Problem solving Concept of size Pictorial representation Pattern recognition Pictorial representation Problem solving	

	• Interpreting graphs of • Any form (exponential, piecewise…) • probability	Y7LC2 Addition, Subtraction, Multiplication, Division with integers and decimals. Y7LC3 Adding and subtracting fractions Forming expressions and equations (Y8 LC2), plotting straight line graphs (Y9 LC1), tables of values (Y9 LC1) Substitution into expressions including indices (Y8 LC2).	Area, volume, perimeter, angles, conversions Modelling	Pictorial representation Problem solving	