

Number		Algebra	Ratio & Proportion	Geometry & Measures	Probability	Statistics	
Block Number	NC Objectives					Our Objectives	NC Ref
BLOCK1	understand and use place value for decimals, measures and integers of any size					A: Label the value of any digit of an integer	N1
						B: Explain the need for zeros for place value	
						C: Label the value of any decimal digit	
	order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, <, >, ≤, ≥					A: Use place value to order integers, and decimals, of any size	N2
						B: Understand how fractions can be ordered by the use of diagrams	
						C: Correctly use inequality symbols	
	use the 4 operations, including formal written methods, applied to integers, decimals					A: Add and subtract integers using column method	Split N4
						B: Use an appropriate method to multiply and divide integers	
						C: Adjust your methods to work with decimals	
	use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals					A: Understand what Indices represent	N5
						B: Recite, and understand, BIDMAS	
						C: Solve multi-step 'sums'	
	derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies					A: Recognise, and name, 2D shapes	GM7
						B: Describe the properties of each type of triangle	
						C: Use shape properties to differentiate between quadrilaterals	
	apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, <b>including Pythagoras' Theorem</b> , and use known results to obtain simple proofs					A: Know the basic angle facts (straight line/point)	GM13
						B: Prove the angle sum for a triangle and quadrilateral	
						C: Understand, and apply, the terms congruence and similarity	
use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3-D					A: Understand the terms face, edge and vertex	GM15	
					B: Discover the number of FEV for 3D shapes		
					C: Discover FEV of compound shapes		
construct and interpret appropriate tables, charts, and diagrams, including frequency tables and bar charts for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data					A: Use a frequency table to draw a bar chart	Split S2	
					B: Draw a line graph to represent ungrouped data		
					C: Draw a line graph to represent grouped data		

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Block Number	NC Objectives				Our Objectives	NC Ref
BLOCK2	use the 4 operations, including formal written methods, applied to proper and improper fractions, and mixed numbers, all both positive and negative				A: Multiply and divide proper fractions	Split N4
					B: Add and subtract proper fractions	
					C: Apply the four operations to improper fractions	
	recognise and use relationships between operations including inverse operations				A: Demonstrate that addition and subtraction are inverse operations	N6
					B: Demonstrate that multiplication and division are inverse operations	
					C: Use related operations to solve problems	
	use and interpret algebraic notation, including: (see PoS)				A: Represent repeated addition with algebra	A1
					B: Represent multiplication and division with algebra	
					C: Represent algebraic coefficients as fractions	
	understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors				A: Identify the differences between: terms, factors and expressions	A3
					B: Describe the difference between an expression and an equation	
					C: Demonstrate how inequality symbols are used	
	express 1 quantity as a fraction of another, where the fraction is less than 1 and greater than 1				A: Understand that a fraction represents part of a whole	RP3
					B: Represent diagrams, and worded expressions, as fractions	
					C: Demonstrate how a fraction can be greater than 1	
derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders)				A: Find the area of a triangle, and a rectangle	GM1	
				B: Find the area, and perimeter, of quadrilaterals		
				C: Calculate the volume of any prism		
calculate and solve problems involving: perimeters of 2-D shapes (including circles), areas of circles and composite shapes				A: Calculate the circumference of a circle	GM2	
				B: Calculate the area of a circle		
				C: Find the area, and circumference, of composite shapes		

	describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data; and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers)	A: Find the mode and range for a set of data	S1
		B: Find the median for a set of data with any number of values	
		C: Calculate the mean for a data set, and show an understanding of the effect of outliers	
	construct and interpret appropriate tables, charts, and diagrams, including pie charts and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data	A: Read from, and draw, a pictogram	Split S2
		B: Calculate angles to draw a pie chart	
		C: Use the angles in a pie chart to extract data	

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Block Number	NC Objectives					Our Objectives	NC Ref	
BLOCK3	define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively,					A: Understand that % means 'out of 100'	Split N10	
						B: Translate %'s into fractions and decimals		
						C: Multiply whole numbers by FDP		
	interpret fractions and percentages as operators						A: Find a fraction of a given quantity	N11
							B: Find a % of a given quantity	
							C: Increase, or decrease, a quantity by a given fraction or %	
	simplify and manipulate algebraic expressions to maintain equivalence by: (see PoS)						A: Simplify by collecting like terms	A4
							B: Expand a single bracket	
							C: Factorise into a single bracket	
	use ratio notation, including reduction to simplest form						A: Understand what a ratio represents	RP4
							B: Simplify a ratio	
							C: Write a ratio in simplest form (and 1:n or n:1)	
	divide a given quantity into 2 parts in a given part:part or part:whole ratio; express the division of a quantity into 2 parts as a ratio						A: Represent a quantity being split up as a ratio	RP5
							B: Divide any quantity using a ratio	
							C: Solve problems with part:whole ratios	
	describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric						A: Sketch, and describe, parallel and perpendicular lines	GM5
							B: Understand what makes a shape 'regular'	
							C: Accurately draw regular polygons	
	record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale						A: Conduct a simple survey and discuss how this affects probabilities	P1
							B: Convert probability 'language' into numerical values	
							C: Assign numerical values to known outcomes	
	understand that the probabilities of all possible outcomes sum to 1						A: List all outcomes for a given event	P2
							B: Calculate the probabilities of all outcomes	
							C: Demonstrate that the sum of all probabilities equals 1, for any event	

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Block Number	NC Objectives					Our Objectives	NC Ref	
BLOCK4	express 1 quantity as a percentage of another, compare 2 quantities using percentages, and work with percentages greater than 100%					A: Convert a 'test score' into a %	Split N10	
						B: Make comparisons by calculating %'s		
						C: Find, and use, %'s that are over 100		
	use algebraic methods to solve linear equations in 1 variable (including all forms that require rearrangement)						A: Solve a 1-step linear equation	A7
							B: Solve a 2-step linear equation	
							C: Solve equations with fractions and brackets	
	understand that a multiplicative relationship between 2 quantities can be expressed as a ratio or a fraction						A: Represent a multiplication relationship in ratio form	RP6
							B: Represent a multiplication relationship as a fraction	
	relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions						C: Convert between ratios and fractions	RP7
	use the standard conventions for labelling the sides and angles of triangle ABC, and know and use the criteria for congruence of triangles						A: Understand how to correctly label the sides/angles of a triangle	GM6
							B: Use SSS and RHS criteria to identify congruent triangles	
						C: Use ASA and SAS criteria to identify congruent triangles		

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Block Number	NC Objectives				Our Objectives	NC Ref
BLOCK5	use the 4 operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative				A:	Recap N4
					B:	
					C:	
	work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and $7/2$ or 0.375 and $3/8$ )				A: Match up unit fractions with their decimal equivalents	N9
					B: Represent proper fractions as terminating decimals	
					C: Represent improper fractions as terminating decimals	
	solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics				A: Calculate % change to solve problems	RP8
					B: Calculate reverse % to solve problems	
					C: Calculate simple interest	
	apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles				A: Recall basic angle facts	GM10
					B: Calculate angles by using basic angle facts	
					C: Solve problems in context that involve the use of basic angle facts	
understand and use the relationship between parallel lines and alternate and corresponding angles				A: Recognise equal angles created by parallel lines	GM11	
				B: Identify alternate and corresponding angles created by parallel lines		
				C: Solve problems that involve the use of parallel lines		

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Block Number	NC Objectives				Our Objectives	NC Ref
BLOCK6	use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property				A: List factors, multiples and prime numbers	N3
					B: Find the HCF and LCM for 2/3 numbers	
					C: Show the prime factorisation of any number, in index form	
	substitute numerical values into formulae and expressions, including scientific formulae				A: Rewrite a basic expression by substituting values	A2
					B: Find the value of expressions by substituting values	
					C: Substitute values into real formulae to obtain values	
	understand and use standard mathematical formulae; rearrange formulae to change the subject				A: Use inverse operations with algebraic expressions	A5
					B: Change the subject of a formula	
					C: Find the value of an unknown by rearranging a formula	
	derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons				A: Prove that the angles in a triangle add up to 180°	GM12
					B: Deduce the angle sum for any polygon	
					C: Derive angle properties of regular polygons	

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Block Number	NC Objectives				Our Objectives	NC Ref
BLOCK7	understand and use place value for decimals, measures and integers of any size				A:	Recap N1
					B:	
					C:	
	order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, <, >, ≤, ≥				A:	Recap N2
					B:	
					C:	
	use the 4 operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative				A:	Recap N4
					B:	
					C:	
	use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals				A:	Recap N5
					B:	
					C:	
	generate terms of a sequence from either a term-to-term or a position-to-term rule				A: Describe a pattern in a sequence of numbers	A14
					B: Continue any sequence by following a pattern	
					C: Follow instructions to generate a sequence	
	recognise arithmetic sequences and find the nth term				A: Recognise the similarity between a sequence and times tables	A15
			B: Describe a sequence using the nth term			
			C: Generate terms in a sequence from the nth term			
recognise geometric sequences and appreciate other sequences that arise				A: Recognise a sequence where each term has been multiplied by a constant	A16	
				B: Create a rule to describe a geometric sequence		
				C: Understand that other sequences exist		
enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams				A: Use a Carroll diagram to represent a set of data	P3	
				B: Use a Venn diagram to represent a set of data		
				C: Describe the intersections and unions from a Venn diagram		



	describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data; and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers)	A:	Recap S1
		B:	
		C:	
	construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data	A:	Recap S2
		B:	
		C:	

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BLOCK8	use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations				A: Calculate square numbers	N7
					B: Calculate powers above 2	
					C: Calculate square roots, and show estimates for non-square numbers	
	work with coordinates in all 4 quadrants				A: Plot, and read, coordinates in one quadrant	A8
					B: Plot, and read, coordinates in all four quadrants	
					C: Draw shapes that are constructed by coordinates	
	recognise, sketch and produce graphs of linear <b>and quadratic functions of 1 variable with appropriate scaling, using equations in x and y and the Cartesian plane</b>				A: plot coordinates that join up to create a straight line	A9
					B: Describe a linear graph, using gradient and intercept	
					C: Draw any graph with the function $y = mx + c$	
	model situations or procedures by translating them into algebraic expressions or formulae and by using graphs				A: Represent a worded situation in the form of an expression	A6
					B: Use a formula to represent variables in real-world situations	
					C: Draw, and use, a conversion graph	
generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities				A: Create an exhaustive list of outcomes for any event	P4	
				B: Organise a sample space diagram for 2 events		
				C: Use a sample space diagram to calculate probabilities		

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Block Number	NC Objectives					Our Objectives	NC Ref
BLOCK9	use standard units of mass, length, time, money and other measures, including with decimal quantities			A: Recognise metric and imperial measurements, and use appropriately			N12
				B: Read an analogue clock face, and answer related questions			
				C: Solve problems involving calculations with money			
	use a calculator and other technologies to calculate results accurately and then interpret them appropriately			A: Use a calculator to find the answer to basic sums			N15
				B: Utilise a scientific calculator to solve two step calculations			
				C: Utilise a scientific calculator to input fraction calculations			
	change freely between related standard units [for example time, length, area, volume/capacity, mass]			A: Recognise similar units for measurement			RP1
				B: Order all units of measurement			
				C: Convert values between different units			
	use scale factors, scale diagrams and maps			A: Calculate 'real' distances on a map			RP2
				B: Draw shapes from a scale diagram			
	draw and measure line segments and angles in geometric figures, including interpreting scale drawings			C: Create accurate routes on a map (including the use of angles/bearings)			GM3

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Block Number	NC Objectives				Our Objectives	NC Ref
BLOCK10	round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures]				A: Round decimals to 1 or 2 d.p.	N13
					B: Round all decimals to any given d.p.	
					C: Round all numbers to any given s.f.	
	use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation $a < x \leq b$				A: Round values to 'simplify' calculations	N14
					B: Calculate approximate answers	
					C: Understand the 'accuracy' of an approximated answer	
reduce a given linear equation in 2 variables to the standard form $y = mx + c$ ; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically				A: Re-arrange equations in to $y = mx + c$	A11	
				B: Discover the gradient from an equation		
				C: Create the equation of a line between any 2 points		
	identify properties of, and describe the results of, translations, rotations and reflections applied to given figures				A: Use vectors to translate shapes, and read translations	GM8
					B: Reflect a 2D shape in any given mirror line	
					C: Rotate a shape around any point	
	identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids				A: Use the appropriate mathematical equipment to construct a congruent triangle	GM9
					B: Enlarge a 2D shape on a grid	
					C: Use 'rays' to enlarge a 2D shape	

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Block Number	NC Objectives				Our Objectives	NC Ref	
BLOCK11	interpret and compare numbers in standard form $A \times 10^n$ $1 \leq A < 10$ , where n is a positive or negative integer or 0				A: Write large, and small, numbers in order	N8	
				B: Write large, and small, numbers in standard form			
				C: Compare numbers that are written in standard form			
	use linear <b>and quadratic</b> graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations				A: Read coordinates (or values) from a straight-line graph	A12	
				B: Predict coordinates (or values) that would appear on an extension of the line			
				C: Find coordinates (or values) that satisfy two straight-line graphs at the same time			
find approximate solutions to contextual problems from given graphs of a variety of functions, including piece-wise linear, <b>exponential and reciprocal graphs</b>				A: Connect a context with a straight-line graph	A13		
			B: Solve problems that require values being taken from a straight-line graph				
solve problems involving direct and <b>inverse</b> proportion, including graphical and algebraic representations				C: Show, and use, an algebraic formula that represents a straight-line graph	RP9		
	derive and use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line			A: Use compasses effectively (to draw arcs and circles)	GM4		
				B: Bisect a line, and an angle			
				C: Create a perpendicular bisector to a line			

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Block Number	NC Objectives			Our Objectives		NC Ref
BLOCK12	appreciate the infinite nature of the sets of integers, real and rational numbers			A:		N16
				B:		
				C:		
	interpret mathematical relationships both algebraically and geometrically			A:		GM16
				B:		
				C:		