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Strand	Statutory Objectives	Non Statutory
Number – number and place value	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit	Pupils use the whole number system, including saying, reading and writing numbers accurately.
	Round any whole number to a required degree of accuracy	
	Use negative numbers in context, and calculate intervals across zero	
	Solve number and practical problems that involve all of the above.	
	Solve number problems and practical problems that involve all of the above.	
Number – addition and subtraction, multiplication, divisions	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	Practise addition, subtraction, multiplication and division for larger numbers, using:- • formal written methods of columnar addition and subtraction, • short and long multiplication • short and long division

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	Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context	They undertake mental calculations with increasingly large numbers and more complex calculations.
	Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context	Continue to use all the multiplication tables to calculate mathematical statements
	Perform mental calculations, including with mixed operations and large numbers	
	Identify common factors, common multiples and prime numbers	Pupils round answers to a specified degree of accuracy, for example, to the nearest 10, 20, 50 etc., but not to a specified number of significant figures.
	Use their knowledge of the order of operations to carry out calculations involving the four operations	Pupils explore the order of operations using brackets; for example, 2 + 1 x 3 = 5 and (2 + 1) x 3 = 9.
	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	Common factors can be related to finding equivalent fractions.
	Solve problems involving addition, subtraction, multiplication and division	
	Use estimation to check answers to calculations and	

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	determine, in the context of a problem, an appropriate degree of accuracy	Pupils use and explain the equals sign to indicate equivalence, including in missing number problems (for example, 13 + 24 = 12 + 25; 33 = 5 x ?).
Number – fractions	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination	Practise, use and understand the addition and subtraction of fractions with different denominators by identifying equivalent fractions with the same denominator. They should start with fractions where the denominator of one fraction is a multiple of the other and progress to varied and increasingly complex problems.
	Compare and order fractions, including fractions > 1	Use a variety of images to support their understanding of multiplication with fractions. This follows earlier work about fractions as operators (fractions of), as numbers, and as equal parts of objects, for example as parts of a rectangle.
	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	Pupils use their understanding of the relationship between unit fractions and division to work backwards by multiplying a quantity that represents a unit fraction to find the whole quantity (for example, if ¼ of a length is 36cm, then the whole length is 36 × 4 = 144cm).
	Multiply simple pairs of proper fractions, writing the answer in its simplest form	
	Divide proper fractions by whole numbers	Practise calculations with simple fractions and decimal fraction equivalents, including listing equivalent fractions to identify fractions with common denominators.
	Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction [for example,	

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	0.375 = 3/8]	
	Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places	Pupils can explore and make conjectures about converting a simple fraction to a decimal fraction (for example, 3 ÷ 8 = 0.375). For simple fractions with recurring decimal equivalents, pupils learn about rounding the decimal to three decimal places, or other appropriate approximations depending on the context. Pupils multiply and divide numbers with up to two decimal places by one-digit and two-digit whole numbers. Pupils multiply decimals by whole numbers, starting with the simplest cases, such as 0.4 × 2 = 0.8, and in practical contexts, such as measures and money.
	Multiply one-digit numbers with up to two decimal places by whole numbers	
	Use written division methods in cases where the answer has up to two decimal places	Pupils are introduced to the division of decimal numbers by one-digit whole number, initially, in practical contexts involving measures and money. They recognise division calculations as the inverse of multiplication.
	Solve problems which require answers to be rounded to specified degrees of accuracy	Pupils also develop their skills of rounding and estimating as a means of predicting and checking the order of magnitude of their answers to decimal calculations. This includes rounding answers to a specified degree of accuracy and checking the reasonableness of their answers.
	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	

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Ratio and proportion	Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts	Pupils recognise proportionality in contexts when the relations between quantities are in the same ratio (for example, similar shapes and recipes).
		Pupils link percentages or 360° to calculating angles of pie charts
	Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison	Pupils solve problems involving unequal quantities, for example, 'for every egg you need three spoonfuls of flour.' ' 3/5 of the class are boys'.
	Solve problems involving similar shapes where the scale factor is known or can be found	
	Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples	Pupils use all four operations in problems involving time and money, including conversions (for example, days to weeks, expressing the answer as weeks and days).

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Algebra	Use simple formulae	Introduce the use of symbols and letters to represent variables and unknowns in mathematical situations that they already understand, such as: • missing numbers, lengths, coordinates and angles • formulae in mathematics and science • equivalent expressions (for example, a + b = b + a) • generalisations of number patterns • number puzzles (for example, what two numbers can add up to).
	Generate and describe linear number sequences	
	express missing number problems algebraically	
	find pairs of numbers that satisfy an equation with two unknowns	
Measurement	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate	Pupils connect conversion (for example, from kilometres to miles) to a graphical representation as preparation for understanding linear/proportional graphs
	Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places	They know approximate conversions and are able to tell if an answer is sensible.
	Convert between miles and kilometres	
	Recognise that shapes with the same areas can have different perimeters and vice /versa	They relate the area of rectangles to parallelograms and triangles, for example, by dissection, and calculate their areas, understanding and using the formulae (in words or symbols) to do this.
	Recognise when it is possible to use formulae for area and volume of shapes	Pupils could be introduced to compound units for speed, such as miles per hour, and apply their knowledge in

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	calculate the area of parallelograms and triangles	science or other subjects as appropriate.
	calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units (for example, mm3 and km3)	
Geometry - Shape	Draw 2-D shapes using given dimensions and angles.	Pupils draw shapes and nets accurately, using measuring tools and conventional markings and labels for lines and angles.
	Recognise, describe and build simple 3-D shapes, including making nets	
	Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons	Pupils describe the properties of shapes and explain how unknown angles and lengths can be derived from known measurements.
	Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	These relationships might be expressed algebraically for example, $d = 2 \times r$; $a = 180 - (b + c)$.
	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	
Geometry – position and direction	Describe positions on the full coordinate grid (all four quadrants)	Pupils draw and label a pair of axes in all four quadrants with equal scaling. This extends their knowledge of one quadrant to all four quadrants, including the use of negative numbers
	Draw and translate simple shapes on the coordinate plane, and reflect them in the axes	Pupils draw and label rectangles (including squares), parallelograms and rhombuses, specified by coordinates in the four quadrants, predicting missing coordinates using the properties of shapes.

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		These might be expressed algebraically for example, translating vertex (a, b) to (a – 2, b + 3): (a, b) and (a + d, b + d) being opposite vertices of a square of side d.
Statistics	Interpret and construct pie charts and line graphs and use these to solve problems	Pupils connect their work on angles, fractions and percentages to the interpretation of pie charts
	Calculate and interpret the mean as an average.	Pupils both encounter and draw graphs relating two variables, arising from their own enquiry and in other subjects.
		They should connect conversion from kilometres to miles in measurement to its graphical representation.
		Pupils know when it is appropriate to find the mean of a data set.