

Years 5 & 6				
	Strand/concept	Small Steps	NC Objective Year 5	NC Objective Year 6
Autumn Term	Number and Place Value (2 weeks)	- Roman numerals to 1000 - Read, write, compare and order numbers to 1,000,000 (extended to 10,000,000 for year 6) - Partition numbers to 1,000,000 and use number lines to 1,000,000 (extended to 10,000,000 for year 6) - Powers of 10 10, 100, 1,000, 10,000 and 100,000 more or less - Rounding to the nearest 10, 100 or 1,000 within 1,000,000 (extended to rounding any integer for year 6) - Interpret negative numbers in context - Compare and order negative numbers - Count forwards and backwards through zero (extended to calculating intervals across zero for year 6)	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 solve number problems and practical problems that involve all of the above read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit 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.
	Addition and Subtraction (2 weeks)	- Mental strategies for addition and subtraction - Adding and subtracting whole numbers with more than 4 digits (extending to larger numbers for year 6)	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) add and subtract numbers mentally with increasingly large numbers	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

		• Checking answers through rounding, inverse etc • Multi step addition and subtraction problems including finding missing numbers	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	
	Multiplication and Division (4 weeks)	• Multiples, common multiples, factors and common factors • Prime numbers to 100 • Square and cube numbers • Multiply and divide by 10, 100 and 1000 • Rules of divisibility • Multiply up to 4 digit by 2 digit numbers • Divide a 4 digit by 1 digit number (extended to 4 digit by 2 digit for year 6) including short division, division with factors, remainders, and long division for year 6. • Solve problems with multiplication and division (extended to multi-step for year 6) Year 6 • Order of operations • Reason from known facts	identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers know and use the vocabulary of prime numbers, prime factors and composite (non prime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context multiply and divide whole numbers and those involving decimals by 10, 100 and 100 recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context 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 perform mental calculations, including with mixed operations and large numbers identify common factors, common multiples and prime numbers use their knowledge of the order of operations to carry out calculations involving the four operations solve problems involving addition, subtraction, multiplication and division use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

			solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	
	Fractions (3 weeks)	• Finding equivalent fractions • simplifying fractions • converting between mixed and improper fractions • compare and order fractions by the denominator • compare and order fractions by the numerator • Add and subtract simple fractions e.g. same denominator (< and > 1) • Add and subtract any two fractions • Subtract from a mixed number and add to a mixed number (extend to add and subtract mixed numbers for year 6) • Multiply unit and non-unit fractions by an integer • Multiply mixed numbers by integers • Calculate fractions of amounts (including finding the whole)	compare and order fractions whose denominators are all multiples of the same number identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $2/5 + 4/5 = 6/5 = 1 \frac{1}{5}$] add and subtract fractions with the same denominator and denominators that are multiples of the same number multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	use common factors to simplify fractions; use common multiples to express fractions in the same denomination compare and order fractions, including fractions > 1 add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $4 \frac{1}{2} \times 2 \frac{1}{2} = 8 \frac{1}{2}$] divide proper fractions by whole numbers [for example, $3 \frac{1}{2} \div 2 = 6 \frac{1}{2}$]

		Use fractions as operators/ mixed questions with fractions / PS		
	Decimals (2 weeks)	Year 6 - Multiply fractions by fractions - Divide fractions by integers	read and write decimal numbers as fractions [for example, $0.71 = 71/100$] recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents round decimals with two decimal places to the nearest whole number and to one decimal place read, write, order and compare numbers with up to three decimal places solve problems involving number up to three decimal places	associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $3/8$] 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 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 solve problems which require answers to be rounded to specified degrees of accuracy
	FDP (1 week)	- Understanding percentages - Convert fractions and decimals to percentages and vice versa - Find equivalent FDP	recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal	recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

		- Order and compare FDP Year 6 - Find the percentage of an amount	solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.	
Spring Term	Ratio and proportion (2 weeks)	Year 5 can use this 2 weeks to embed calculation from Autumn Term Year 6 - Use ratio language and understand the ratio symbol - Understand the link between ratio and fractions - Understand scale drawings - Use scale factors - Similar shapes - ratio problems - proportion problems - ratio and proportion in context e.g. recipes		solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison 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.
	Algebra (2 weeks)	Year 5 can use this 2 weeks to embed calculation from Autumn Term Year 6 1 and 2 step function machines - forming expressions - substitution - formular - forming equations - solving 1 and 2 step equations - finding pairs of values - solving problems with two unknowns		use simple formulae generate and describe linear number sequences express missing number problems algebraically find pairs of numbers that satisfy an equation with two unknowns enumerate possibilities of combinations of two variables.

	Area, perimeter and volume (2 weeks)	- Perimeter of rectangles, rectilinear shapes and polygons - Area of rectangles and compound shapes - Volume - estimating, comparing and counting cubes (extended to volume of a cuboid for year 6)	measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm ²) and square metres (m ²) and estimate the area of irregular shapes estimate volume [for example, using 1 cm ³ blocks to build cuboids (including cubes)] and capacity [for example, using water]	recognise that shapes with the same areas can have different perimeters and vice versa recognise when it is possible to use formulae for area and volume of shapes calculate the area of parallelograms and triangles 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, mm ³ and km ³].
	Measure (2 weeks)	Year 6 - Area of a triangle - Area of a parallelogram - Understanding metric units - Measuring with metric units - convert between metric measures - calculate with metric measures - Understanding imperial measures - convert between metric and imperial (extending to miles and km for year 6) - convert between units of time - calculate with timetables	convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints solve problems involving converting between units of time use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate 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 convert between miles and kilometres
	Shape (3 weeks)	- Understand and use degrees - classify angles - estimate angles - Measure angles up to 180° (extend to 360° for year 6) - Draw angles - Calculate angles around a point, on a straight line (including	identify 3-D shapes, including cubes and other cuboids, from 2-D representations know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles draw given angles, and measure them in degrees (o)	draw 2-D shapes using given dimensions 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 illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

		vertically opposite for year 6) - Angles in a triangle - Angles in a quadrilaterals - Angles in polygons Year 6 - Circles - draw shapes accurately - Nets of 3D shapes	identify: angles at a point and one whole turn (total 360°) angles at a point on a straight line and 1/2 a turn (total 180°) other multiples of 90° use the properties of rectangles to deduce related facts and find missing lengths and angles distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
Summer Term	Position and direction (1 week)	- Read and plot coordinates on the first quadrant (extend to all four quadrants for year 6) - problem solve with coordinates - translations on a grid - Lines of symmetry in shapes - reflection of shapes in horizontal and vertical lines (on a coordinates grid for year 6)	identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	describe positions on the full coordinate grid (all four quadrants) draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
	Statistics (1 week)	- Draw line graphs - read and interpret line graphs - read and interpret tables, two way tables and timetables (extend to dual bar charts and pie charts for year 6) Year 6 - Pie charts with percentages - draw pie charts - the mean	solve comparison, sum and difference problems using information presented in a line graph complete, read and interpret information in tables, including timetables.	interpret and construct pie charts and line graphs and use these to solve problems calculate and interpret the mean as an average.
	9 weeks for consolidation, recapping etc.			