Year 5 and 6				
	Strand/concept	**Small Steps**	**NC Objective Year 3**	**NC Objective Year 4**
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) • Checking answers through rounding, inverse etc • Multi step addition and subtraction problems including finding missing numbers	• 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 • 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.	• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
	Multiplication and Division (4 weeks)	Year 5 • Multiples, common multiples, factors and common factors	• Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers	• Multiply multi-digit numbers up to 4 digits by a two-digit whole number

		• 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	• 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 • 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.	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.
	Fractions (3 weeks)	Year 5 • Finding equivalent fractions • Simplifying fractions • Converting between mixed and improper fractions • Compare and order fractions by the denominator	• 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	• 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

		• 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) • Use fractions as operators/ mixed questions with fractions / PS Year 6 • Multiply fractions by fractions • Divide fractions by integers	the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5= 1 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	numbers, using the concept of equivalent fractions • Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 4 1 × 2 1 = 8 1] • Divide proper fractions by whole numbers [for example, 3 1 ÷ 2 = 6 1]
	Decimals (2 weeks)	Year 5 • Place value within 1 • Understand place value up to 3dp • Order and compare any decimal up to 3dp • Round decimals to the nearest whole, the nearest 1dp and 2dp • Add and subtract decimals (including formal method) • Multiply and divide by 10, 100 and 1000 • tenths, hundredths and thousandths as fractions • Decimal and fraction equivalents Year 6 • Multiply and divide decimals by integers (formal methods included) • Multiply and divide decimals in context	• 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)	Year 5 • Understanding percentages • Convert fractions and decimals to percentages and vice versa • Find equivalent FDP • Order and compare FDP Year 6 • Find the percentage of an amount	• 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 • Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.	• Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
Spring term	**Ratio and proportion** (2 weeks)	Year 5 to 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 to use this 2-weeks to embed calculation from Autumn Term		• Use simple formulae • Generate and describe linear number sequences

		Year 6 • 1 and 2 step function machines • Forming expressions • Substitution • Formulas • Forming equations • Solving 1 and 2 step equations • Finding pairs of values • Solving problems with two unknowns		• 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)	Year 5 • 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) Year 6 • Area of a triangle • Area of a parallelogram	• 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 (cm2) and square metres (m2) and estimate the area of irregular shapes • Estimate volume [for example, using 1 cm3 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 (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3].
	Measure (2 weeks)	• 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 & 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)	Year 5 • 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 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 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) • 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.	• 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 • 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)	Year 5 • 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.
	Consolidation			