

Upper Key Stage 2: Year 5 & Year 6	
Number:	Place Value, Addition, Subtraction, Multiplication, Division, Fractions including decimals and percentages, Ratio and proportion, Algebra
Measure:	Length, Mass, Capacity, Scaling, Perimeter, Time, Imperial Units
Geometry:	Properties of shape, Angles, Co-ordinate, Translation, Reflection
Statistics:	Graphs

Objectives for Number Upper KS2 : Y5 Autumn	
Number	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, 1,000, 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.
	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.
	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 and divide whole numbers and those involving decimals by 10, 100 and 1000.
	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.
Measure	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.
Statistics	Solve comparison, sum and difference problems using information presented in a line graph.
	Complete, read and interpret information in tables, including timetables.

Objectives for Number Upper KS2 : Y5 Spring	
Number	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- or two-digit number using formal method of short division and interpret remainders appropriately for the context

	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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$)
	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
	Read and write decimal numbers as fractions (for example, $0.71 = \frac{71}{100}$)
	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.
	Recognise the per cent (%) symbol and understand that per cent relate 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 $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25

Objectives for Number Upper KS2 : Y5 Summer	
Number	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
	Read, write, order and compare numbers with up to three decimal places.

Measure	Convert between different units of metric measure
	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
	Estimate volume
	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.
Geometry	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 (°)
	Identify: <ul style="list-style-type: none"> angles at a point and one whole turn angles at a point on a straight line and $\frac{1}{2}$ a turn other multiples of 90°
	Use the properties of rectangles to deduce related facts and find missing lengths and angles
Statistics	Distinguish between regular and irregular polygons based on reasoning about equal sides and angles
	Solve comparison, sum and difference problems using information presented in a line graph
	Complete, read and interpret information in tables, including timetables.

Objectives for Number Upper KS2 : Y6 Autumn	
Number	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.

	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 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, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$).
	Divide proper fractions by whole numbers (for example, $\frac{1}{3} \div 2 = \frac{1}{6}$).
	Use written division methods in cases where the answer has up to two decimal places.
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.
Geometry	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.

Objectives for Number Upper KS2 : Y6 Spring

Number	Compare and order fractions, including fractions > 1 .
	Multiply simple pairs of proper fractions, writing the answer in its simplest form (for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$).
	Associate a fraction with division and calculate decimal fraction equivalents (for example, 0.375) for a simple fraction (for example $\frac{3}{8}$).
	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.
	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
	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	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.
Measure	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.
	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).

Objectives for Number Upper KS2 : Y6 Summer	
Number	Use their knowledge of the order of operations to carry out calculations involving the four operations
	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
	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

	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
Ratio and proportion	Solve problems involving the calculation of percentages and the use of percentages for comparison
	Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
Measure	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 up to three decimal places
Geometry	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.
	Describe positions of the full co-ordinate grid
Statistics	Interpret and construct pie charts and line graphs and use these to solve problems
	Calculate and interpret the mean as an average