National Curriculum Objectives
YEAR 6

Number - number and place value

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	

Number - addition and subtraction, multiplication and division

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 (including decimal 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 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	

Number - fractions

Use common factors to simplify fractions; use common multiples to express fractions in the same	
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, ¼ x ½ = 1/8]	
Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = 1/6$]	
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	
Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	

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	
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	
Express missing number problems algebraically	
Generate and describe linear number sequences	
Find pairs of numbers that satisfy an equation with two unknowns	
Enumerate possibilities of combinations of two variables	

Measurement

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]	

Geometry - properties of shapes

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. 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)	
Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. predicting missing coordinates using the properties of shapes	

Statistics

Interpret and construct pie charts and line graphs and use these to solve problems	
Calculate and interpret the mean as an average	