

Year 6 programme of study Statutory requirements

Number – number and place value

- read, write, order and compare numbers up to 10 000 000 determining the value of each digit;
- round whole numbers to nearest 10/100/1000, etc;
- use negative numbers in contexts;
- solve problems involving all the above.

Number – addition, subtraction, multiplication and division

- multiply 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/rounding 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 with mixed operations and large numbers;
- identify common factors, common multiples and prime numbers;
- carry out calculations involving the four operations including brackets;
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why;
- solve problems involving +, -, x and ÷, estimating and checking.

Number – fractions (including decimals and percentages)

- simplify fractions; use common multiples to express fractions in the same denomination;
- compare and order fractions, including fractions > 1;
- + and - 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, $\frac{1}{3} \div 2 = \frac{1}{6}$]
- associate fraction equivalents for example, 0.375 as a simple fraction $\frac{3}{8}$
- identify the value of each digit to three decimal places and x and ÷ 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;
- equivalences between simple fractions, decimals and percentages.

Ratio and proportion

- solve problems involving the relative sizes of two quantities;
- solve problems involving the calculation of percentages [for example 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 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.

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 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 given dimensions and angles;
- recognise, describe and build simple 3-D shapes, including 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: 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.

Geometry – position and direction

- describe positions on all four quadrants;
- draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

Statistics

- interpret and construct pie charts and line graphs and use these to solve problems;
- calculate and interpret the mean as an average.