

Number- Number and Place Value

Our pupils will be taught to:

- ✓ 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, Subtraction, Multiplication and Division

Our pupils will be taught to:

- ✓ 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 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 including decimals and percentages

Our pupils will be taught 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 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 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

Ratio and Proportion

Our pupils will be taught to:

- ✓ 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

Our pupils will be taught to:

- ✓ 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

Our pupils will be taught to:

- ✓ 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 (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³]

Geometry-Properties of Shapes

Our pupils will be taught to:

- ✓ 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.

Geometry-Position and Direction

Our pupils will be taught to:

- ✓ 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

Our pupils will be taught to:

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