

The Year 6 Learner

Number

Counting and understanding number

Children will read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. They will round any whole number to a required degree of accuracy. Children will use negative numbers in context, and calculate intervals across zero. They will solve number and practical problems that involve all of the above.

Calculating

Children will perform mental calculations, including with mixed operations and large numbers. They will use their knowledge of the order of operations to carry out calculations involving the four operations. Children will solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. They will solve problems involving addition and subtraction, use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. Children will multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. They will 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. Children will 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. They will perform mental calculations, including with mixed operations and large numbers. Children will identify common factors, common multiples and prime numbers. They will use their knowledge of the order of operations to carry out calculations involving the four operations. Children will solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. They will solve problems involving addition, subtraction, multiplication and division. Children will use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Fractions

Children will use common factors to simplify fractions; use common multiples to express fractions in the same denomination. They will compare and order fractions, including fractions >1 . Children will add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. They will multiply simple pairs of proper fractions, writing the answer in its simplest form (for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$). Children will divide proper fractions by whole numbers (for example, $\frac{1}{3} \div 2 = \frac{1}{6}$). They will associate a fraction with division and calculate decimal fraction equivalents (for example, 0.375) for a simple fraction (for example, $\frac{3}{8}$). Children will 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. They will multiply one-digit numbers with up to two decimal places by whole numbers. Children will use written division methods in cases where the answer has up to two decimal places. They will solve problems which require answers to be rounded to specified degrees of accuracy. Children will recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Geometry

Position and direction

Children will describe positions on the full coordinate grid (all four quadrants). They will draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

Geometry

Properties of shape

Children will draw 2-D shapes using given dimensions and angles. They will recognise, describe and build simple 3-D shapes, including making nets. Children will compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. They will illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Children will recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

Measurement

Children will solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. They will 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. Children will convert between miles and kilometres. They will recognise that shapes with the same areas can have different perimeters and vice versa. Children will recognise when it is possible to use formulae for area and volume of shapes. They will calculate the area of parallelograms and triangles. Children will calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3]

Statistics

Children will interpret and construct pie charts and line graphs and use these to solve problems. They will calculate and interpret the mean as an average.