

Mathematics in Year 6

By the end of Year 6, children are expected to be confident with the use of all four standard methods for written calculations, and to have secured their knowledge of the key number facts for the four operations. Their work will focus more on fractions, ratio, proportion and the introduction of algebra.

In May of Year 6, children will take an arithmetic test of thirty minutes, and two broader mathematics tests of forty minutes each. These will be sent away for marking, with the results coming back before the end of the year. Your child's teacher will also make an assessment of whether or not your child has reached the expected standard by the end of the Key Stage.

Number and Place Value

Work with numbers to up ten million (10,000,000) including negative numbers

Round any number to any required number of digits or magnitude

Calculations

Use the standard method of long multiplication for calculations of four-digit numbers by two-digit numbers

Use the standard method of long division for calculations of four-digit numbers by two-digit numbers

Identify common factors, common multiples and prime numbers

Carry out complex calculations according to the mathematical order of operations

Solve complex problems using all four operations

The mathematical order of operations requires that where calculations are written out in long statements, first calculations in brackets are completed, then any multiplication or division calculations, and finally any addition or subtraction. So, for example, the calculation $4 + 3 \times (6 + 1)$ has a solution of 25, not 43 or 49.

Fractions and Decimals

Use common factors to simplify fractions, or to add fractions with different Denominators

Place any group of fractions into size order

Multiply pairs of fractions together

Divide fractions by whole numbers, for example $13 \div 2 = 16$

Use division to calculate the decimal equivalent of a fraction

Know and use common equivalences between fractions, decimals and percentages, such as $12 = 0.5 = 50\%$

Ratio and Proportion

Find percentages of quantities, such as 15% of £360

Use ratio to explain relationships and solve problems

Use simple scale factors for drawings, shapes or diagrams

Parent Tip

Playing traditional games, such as battleships or even draughts and chess, is great for exploring coordinates and movements across the coordinate grid.

Ratio is represented using the colon symbol. For example, if £100 is shared in a ratio of 1:3 between two people, then the first person receives £25 (one part), with the other receiving £75 (three parts).

Algebra

Use simple formulae

Describe sequences of numbers where the increase between values is the same each time

Solve missing number problems using algebra

Find possible solutions to problems with two variables, such as $a + b = 10$

Measurements

Convert between any metric units and smaller or larger units of the same measure

Convert between miles and kilometres

Use a given formula to find the area of a triangle or parallelogram

Shape and Position

Draw 2-d shapes using given sizes and angles

Use knowledge of 2-d shapes to find missing angles in triangles, quadrilaterals and other regular shapes

Name and label the radius, diameter and circumference of a circle

Find missing angles in problems where lines meet at a point or on a straight line

Use a standard grid of coordinates including negative values

Graphs and Data

Construct and understand pie charts and line graphs

Calculate the mean average of a set of data

Mean average is calculated by adding up all the values and dividing by the number of items. For example, the mean average of 3, 5, 8, 9 and 10 is 7 ($3 + 5 + 8 + 9 + 10 = 35$, then $35 \div 5 = 7$)