Mathematics in Year 6
A guide for parents

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 x (6+1) has a solution of 25, not 43 or 49.

Fractions

- 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 $\frac{1}{3} \div 2 = \frac{1}{6}$
- Use division to calculate the decimal equivalent of a fraction
- Know and use common equivalences between fractions, decimals and percentages, such as $\frac{1}{2}$ = 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

Ratio is represented using the colon symbol. For example, if £100 is shared in a ratio of 1:3 (4 total parts) between two people, then the first person receives £25 (one part), with the other person 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 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 ÷ 5 = 7

Parent Tip

Much of the knowledge in Year 6 relies on number facts being easily recalled. For example, finding common factors or to find equivalent fractions relies on good multiplication tables knowledge. Any practice you can do at home to keep these skills sharp will certainly be appreciated by your child's class teacher. Playing lots of different maths games and traditional board games will also encourage different mathematical thinking. Your child's teacher will be sending home weekly homework to help recap concepts that will come up in the SATs. make sure you are completing this weekly and supporting your child if they need help.

Times tables Rockstars and Numbots are great apps to help children improve their mental maths skills.

At Hempshill, we follow a mastery approach. This is where we aim to ensure all pupils have mastered key concepts before moving onto the next topic. We do this by breaking the learning into small steps allowing children the time to understand the concept and gain confidence.