

Mathematics

Mathematics in the Early Years Foundation Stage involves providing children with opportunities to practice and improve their skills in counting, calculating simple addition and subtraction problems. It also develops their ability to describe shapes and use measures. Mathematics in Key Stages 1 and 2 is generally taught through a daily mathematics lesson.

Children are encouraged to apply their mathematical skills in order to become fluent in using a range of appropriate strategies to solve problems, to reason mathematically, such as by asking further sensible questions, while a strong emphasis is placed on security of mental and written calculation methods. We aim to build upon and reinforce basic skills to provide solid foundations of understanding and knowledge. Where possible, we aim for pupils to be able to relate all of their mathematical skills and knowledge in the widest sense and recognise these connections independently.

The curriculum covers main topics such as calculating using the four operations, fractions, measurement and geometry. In Key Stage 1 pupils begin to develop their ability to recognise, describe, draw, compare and sort different shapes and use the related mathematical vocabulary. They also use a range of measures to describe and compare different quantities such as length, mass, capacity / volume, time and money. By the end of Year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. Pupils should begin to read and spell mathematical vocabulary consistent with their increasing word reading and spelling knowledge during the Key Stage.

The focus of mathematics teaching in lower Key Stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the 4 operations, including number facts and the concept of place value. Pupils begin to develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

Alongside this they develop their ability to solve a range of problems, including with simple fractions and decimal place value. In geometry pupils begin to draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. By the end of Year 4 pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

As pupils progress into upper Key Stage 2 they extend their understanding of the number system and place value to include larger integers. This strengthens the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils further develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures also extends knowledge developed in number. Teaching should always ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of Year 6, pupils should be fluent in written methods for all 4 operations, including long multiplication and division, and in working with fractions, decimals and percentages.