

Maths Progression Summary

Early Years	Key Stage 1	Lower Key Stage Two	Upper Key Stage Two
<p>During the Reception year, children focus on developing a deep understanding of numbers to 10 through investigating the composition of numbers, e.g. how many different ways can I make 5? This knowledge supports them in understanding the structure of numbers e.g. what is 3? How can I make 3 in different ways? Their fluency knowledge is focused on accurate counting in 1s to 20 forwards and backwards. Other key mathematical concepts include pattern spotting and knowledge of shapes and early measures.</p>	<p>At the end of KS1 (year 2), we want our children to have extended their knowledge of numbers to numbers beyond 100, demonstrating understanding of how to partition 2 digit numbers in different ways including into 10s and 1s. This aids them in adding and subtracting using an efficient strategy. Their fluency knowledge extends to recalling number bonds within and to 10 and using these to calculate bonds to and within 20 (e.g. If $7 + 3 = 10$, then $17 + 3 = 20$; if $7 - 3 = 4$, then $17 - 3 = 14$; leading to if $14 + 3 = 17$, then $3 + 14 = 17$, $17 - 14 = 3$ and $17 - 3 = 14$).</p> <p>Multiplication and division is introduced, which in turn supports introducing fractions of a shape and number as a concept e.g. halves, quarters and thirds. The expectation of fluency knowledge extends to children knowing their 2,5, and 10 times table facts to support their calculations.</p> <p>Other mathematical knowledge that children are expected to have is to read the time on an analogue clock and manipulate coins to make the same amount. Helping your children little and often with this at home greatly supports them in securing this knowledge.</p>	<p>By the end of year 4, children will be able to recognise the place value (1000s, 100s, 10s, 1s) in 4 digit numbers and have knowledge of negative numbers. This will allow them to estimate with increasing accuracy, compare numbers and use their knowledge of numbers and the four operations (+-x ÷) to develop efficient written and mental methods with whole numbers.</p> <p>Fraction knowledge extends to manipulating fractions: finding equivalents; adding and subtracting and finding fractions of amounts.</p> <p>Pupils' deepen their mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them and make connections between measure and scales on measuring implements and number.</p> <p>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. They are required to undertake a multiplication check in June which identifies strengths and areas for development. Knowledge of times table facts is integral to accessing the Upper Key Stage Two mathematics curriculum.</p>	<p>By the end of year 6, children will be able to read, write, order and compare numbers and determine the value of each digit in numbers up to at least 10 000 000 and / or up to 3 decimal places. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. Their number knowledge includes identifying common factors, common multiples and prime numbers.</p> <p>By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. E.g. solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison; multiply simple pairs of proper fractions, writing the answer in its simplest form.</p> <p>Pupils are introduced to the language of algebra as a means for solving a variety of problems, learning to use simple formulae, describe linear number sequences and express missing number problems. Teaching in geometry and measures extends to investigating dimensions and angles and translating simple shapes in the co-ordinate plane.</p>