



Maths: What we cover & when – a very simple overview . . .

In Key Stages 1 and 2, our children follow the National Curriculum. We have extensive planning to ensure coverage across our mixed year group classes and this enables us to revisit the fundamentals in a planned and progressive way. We also have a Calculation Policy that gives greater detail about how areas in Maths are covered in different year groups.

Curriculum Overview: Maths

- **Maths develops numeracy, it supports skills such as problem solving, understanding and using shapes and measure, and improves children's spatial awareness.**
- **In Maths our children have to slow down, analyse a problem, and devise a logical solution. It also encourages children to think outside the box and consider different approaches to a problem.**
- **Maths helps children make sense of the numbers, patterns and shapes they see in the world around them, offers ways of handling data in an increasingly digital world and makes a crucial contribution to their development as successful learners.**

Curriculum Overview: Maths

Addition, Subtraction, Multiplication and Division

As outlined in the [National Curriculum](#), children develop their understanding of the fundamentals of maths and build their knowledge of addition, subtraction, multiplication and division throughout KS1 and KS2.

This begins in the Foundation Stage with practical hands-on activities and puts in the foundations of number recognition through the development of skills such as subitising.

When observing our youngest children, you would expect to see them engaging in a wide variety of songs and rhymes, games and activities. Children begin to relate addition to combining two groups of objects, first by counting all and then by counting on from the largest number. They will find one more than a given number. In practical activities and through discussion children will begin to use the vocabulary involved in addition. Similarly for subtraction, our youngest children will engage in practical activities and will begin to use the vocabulary associated with subtraction. They will find one less than a given number. They will begin to relate subtraction to 'taking away' using objects to count 'how many are left' after some have been taken away.

Multiplication and the concept of division are introduced in a completely practical and understandable way 'Three apples for you and three apples for me' - 'Half of the apples for you and half of the apples for me.'

Children will count repeated groups of the same size in practical contexts or share the apples between two people. This symbiosis between practical, real-life examples continues throughout KS1 and into lower KS2, and enables our children to have a real understanding of the written methods they learn when there are simply too many apples and too many people to make this a practical option anymore!

In Upper Key Stage 2 our aim is that children use mental methods (with jottings) when appropriate, but for calculations that they cannot do in their heads, they use an efficient formal written method accurately and with confidence. This applies to addition, subtraction, multiplication, and division.

For a breakdown of formal methods used – please do see our Calculation Policy. Our Year 4 children sit their statutory MTC (Multiplication Tables Check) in June of their Yr 4 year – this ensures that they know their times tables up to 12x12 instantly and enables the success of the mental methods used in Upper Key Stage 2.

Curriculum Overview: Maths

Mathematical Methods and Number Forms

In Reception and Years 1 and 2, children use visual aids to help them build their understanding of mathematical methods. As they move up through the school, they'll begin to use more complex written methods to calculate solutions, while building their confidence in using mental arithmetic. It is vitally important that children gain understanding of what they are doing practically before they move onto an abstract number – this is why we have a real focus on concrete, pictorial and only then abstract.

As the children progress into Key Stage 2, they look at the various forms numbers can take, such as whole numbers, positive numbers and negative numbers. By the end of Year 6, they are able to round numbers to a given degree of accuracy and work confidently with negative numbers.

Again if you want further detail about what our children learn and when/how – please do look at our Calculation Policy.

Multiplication, Division and Measurements

As previously stated, children begin to understand multiplication and division as early as their Reception year (perhaps even nursery), where they share items, group items and begin to understand the concept of multiple groups of things.

By the end of Year 4, the majority of children will be able to instantly recall multiplications up to the 12 times table, and perhaps more importantly, be able to use this knowledge to solve questions.

In Upper Key Stage 2 the children use this instant recall to help them solve complex mathematical questions/problems, including algebra.

Children also build their understanding of measurements, including time, money and distance throughout their school life, starting with very practical activities in the Early Years such as shopping and using egg timers, moving onto Upper Key Stage 2, when the children will be able to read, simplify and convert between these measures as required.

Curriculum Overview: Maths

Data and Shape

Data is a very simple task in key Stage 1, and often perhaps overlooked by the children as an actual mathematical concept – they are simply finding out about class pets, favourite ice cream flavours and birthday months, then representing those findings with a simple representation such as a bar chart.

The children soon move on though and quickly discover the many ways in which data can be represented, from basic bar charts to axis on a grid, they learn how to read and record data from an array of charts and diagrams. This culminates in Year 5 & 6 when the children are able to confidently solve comparison, sum and difference problems using information presented in a line graph, and complete, read and interpret information in tables, including timetables. Then confidently interpret and construct pie charts and line graphs, and use these to solve problems, whilst also calculating and interpreting the mean as an average.

Shape is also an important skill that develops simply from being able to recognise and name simple shapes such as square, circle, oval, triangle etc to building their knowledge of 2D and 3D shapes, lines and angles.

As the children make progress through school, they are able to name more complex shapes, draw 2-D shapes using given dimensions and angles, recognise, describe and build simple 3-D shapes, including making nets, and compare and classify geometric shapes based on their properties and sizes.

In Upper Key Stage 2 children learn to find unknown angles in any triangles, quadrilaterals, and regular polygons, recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.