

Mathematics at Tweseldown

At Tweseldown Infant School we believe that Maths should equip children to be lifelong problem solvers; using and applying the skills acquired in their mathematical learning to help them solve problematic situations they may come across in everyday life. A variety of approaches are used to teach Maths including practical activities, different methods of calculation, mental and problem solving strategies. Within the teaching of Maths we provide opportunities to ensure children apply their knowledge of problem solving to different situations and gain a range of experiences. Children are given the opportunity to build on their mathematical skills in other areas of the curriculum; such as measuring in DT, questioning in Science, and sequencing in History.

Organisation

The Mathematics curriculum for Key Stage One (Year 1 and Year 2) follows the requirements of the 2014 National Curriculum for Mathematics. In Year R (Reception Year) the mathematics curriculum taught is the Mathematics area of learning and development within the EYFS (Early Years Foundation Stage) which focuses on numbers, shape, space and measure. Throughout the school teaching is matched to the children's learning needs to ensure every child makes good progress from their starting points.

Mathematics curriculum

Tweseldown's Maths Curriculum aims to develop in each child:

- a broad understanding of mathematical concepts, alongside specific mathematical skills and knowledge
- mental fluency so they can solve problems quickly and accurately without the use of practical resources
- an ability to explain their mathematical thinking through; diagrams, the written word the use of practical resources and spoken word
- an ability to investigate and solve mathematical problems with increasing confidence
- an enjoyment of mathematics through stimulating and challenging work, enabling them to reach their full potential in the subject

Reception Year

Throughout the year the essential skill of counting is developed through child initiated play and adult led learning. Children are taught to recite and recognise numerals zero to twenty in order to compare numbers and solve practical problems. Through first hand experiences the children explore 2D and 3D shapes and compare measures in a variety of contexts. The children are taught the use of mathematical vocabulary in order to help them explain their thinking.

Year 1

As children move into Year 1 they build upon the knowledge they gained in Year R and broaden their knowledge of maths.

Number and place value – Children are taught to count to and across 100, forwards and backwards, beginning from any given number. They also learn the more complex skill of counting in multiples of twos, fives and tens. Children are taught to read and write numbers to 100 in numerals. They represent numbers using objects and pictorial representations, and explain the value of a number using mathematical language. When given a number the children identify one more and one less.

Addition and subtraction – When solving addition and subtraction problems the children use the addition (+), subtraction (–) and equals (=) signs. Children learn the pairs of numbers which total 20, eg. $18 + 2 = 20$, and the related subtraction facts eg. $20 - 18 = 2$. The children develop their problem solving skills through solving one-step problems involving addition and subtraction. When solving problems children use practical equipment and pictorial representations.

Multiplication and division – With the support of the teacher the children use pictures, practical resources and arrays to solve one step problems. Through practical experiences they begin to understand multiplication and division, as well as doubling. The children are introduced to how to find fractions of objects, numbers and quantities. As part of the development of their mathematical thinking they begin to make connections between arrays, number patterns and counting in twos, fives and tens.

Fractions – Children are taught a half and quarter as fractions of a shape, a number and a quantity and how to apply this knowledge to solve a problem.

Measurement - Year 1 children will use and compare different types of quantities and measures using non-standard units and start to use common standard measures such as metres, litres and grams. Children begin to tell the time to the hour and half past the hour. They recognise and use language relating to dates, including days of the week, months of the year and years. Children are taught the value of coins and notes.

Geometry – Children build upon their knowledge gained in Year R, recognizing and naming common 2D and 3D shapes. They use positional and directional language to describe the position of objects and the turns they make.

Year 2

Year 2 children continue to develop their mental fluency and apply their mathematical knowledge to solving a range of problems both mentally and using a range of written methods.

Number and place value – Children are taught to count in steps of 2, 3, and 5 from 0 and in 10s from any number, forwards and backwards. They also learn to recognise the place value of each digit in a two digit number (tens and ones) and use this knowledge to solve problems. Children are taught to read and write numbers to at least 100 in numerals and words. They identify, represent and estimate numbers using different representations, such as a number line, and compare and order numbers from 0 – 100 using the signs $<$, $>$ and $=$.

Addition and subtraction – When solving addition and subtraction problems the children use concrete objects and pictorial representations. They apply their increasing knowledge of mental and written methods. Children recall and use their knowledge of the pairs of numbers which total 20, eg. $18 + 2 = 20$, and the related subtraction facts eg. $20 - 18 = 2$. They build on this knowledge by learning the addition and subtraction facts for numbers up to 100. The children develop their understanding of the relationship between addition and subtraction, using the inverse relationship to check calculations and solve problems.

Multiplication and division – Children are taught to recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables. They solve problems involving multiplication and division, showing their working in a variety of ways, and understand that multiplication can be done in any order but division of one number by another cannot.

Fractions – Children are taught a third, quarter, two-quarters and three quarters of a shape, a set of objects and a quantity. They write simple fractions eg $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$

Measurement - Year 2 children will use and compare different types of quantities and measures using standard units such as metres/centimetres, litres/millilitres, centigrade and kilograms/grams. Children tell the time to five minutes, including quarter past/to the hour. They compare and sequence intervals of time and know the number of minutes in an hour and the number of hours in a day. Children use the symbols for pound and pence and combine amounts to make a particular value. They solve money problems; subtracting, adding and giving change.

Geometry – Children build upon their knowledge gained in Year 1, identifying and describing the properties of 2D and 3D shapes using mathematical vocabulary. They compare and sort 2D and 3D shapes. The children learn to order and arrange combinations of objects in patterns and sequences. They use mathematical vocabulary to describe the position of objects and the turns they make.

Statistics – Year 2 children learn to interpret and construct simple pictograms, tally charts, block diagrams and tables. They ask and answer questions by counting the number of objects in each category on a block diagram.