

How to help your infant child with maths

Maths around us

Once children start school, they will begin to notice numbers and comment upon the sizes, weights or quantity of things more than they have done before. They may spontaneously add things up or become aware of differences - 'she has two more sweets than I do!' As school maths kicks in, your child may enjoy showing you their newly acquired skills, counting, adding or doubling. They may point out larger numbers on houses as you walk along a street or on cars while you are driving. Children will often spot shapes and be glad to compare and name these: 'That looks like a square on its point.' All these mentions of numbers, shapes and sizes are, of course, to be encouraged and built upon. The more mathematical talk your child takes part in, the better!

Counting

Counting is still one of the most important skills on which children will focus at school. They will be learning to do two things: Firstly to count by chanting the numbers in order, matching these to the written numerals as they go. Secondly, children will learn to establish how many items there are in a set, for example, how many wooden beads on a thread. To do this, they must touch each thing being counted as they say its number: one, two, three... moving each bead slightly as they go. Without this 'touching', children are not able to count the number of objects accurately. Teachers call this skill 'matching one-to-one' and understand its significance. You can help your child by encouraging them to count how many in as many different situations as possible - how many biscuits on a plate, rungs on a ladder, t-shirts in a drawer, steps up to the museum...? All this counting pays off in the end!

Recognising how many without counting!

Recognising small quantities without counting is another skill which children will now be acquiring at school. If we look at the arrangements of dots on dice or dominoes, we realise that we do not count these we simply 'know' what they are. "Oh, good!" Fred exclaims, "I've thrown a six!" He does not count the dots, he simply recognises a six when he sees one. Being able to recognise small quantities without having to count them is another of those mathematical skills which underpin children's development in this area. Children who have played games, who

recognise the dice, domino and card arrangements of numbers 1 to 6 and perhaps up to ten, are more likely to progress well in their early number work. And playing simple games with your child not only has the benefit of improving their maths, it also teaches them how to lose gracefully and win with style!

Adding by counting on

The earliest form of addition is when children learn to recognise the 'next number'. This means that if you say a number, such as seven, they can tell you the next number, eight, without having to start at one and count up. Being able to say the 'next number' to any number up to ten and beyond is a skill that is required for children to be able to add two numbers. At this age, children add two numbers by counting on from the larger of the two. So four and eight is best done by starting at eight and counting on four: nine, ten, eleven, twelve. Using four fingers and folding one down with each number counted on is a big help. Right from the start children need to understand that we do NOT need to count the larger number - we can just start with that and count on.

Adding by splitting

Adding two numbers may be achieved by counting on from the larger to the smaller. However, another way for children to find a total is when they have memorised the fact that a number can be split into two smaller numbers. So six is three and three, or four and two, or indeed five and one. We know this so well, we do not need to add three and three, we just know that it is six. Similarly a numerate person will 'just know' that six and four are ten or that seven and two are nine. 'Just knowing' or remembering these number facts is a tremendous advantage in mathematics. Children need to know the pairs of numbers which add together to make ten, and nine, and eight, etc. A truly numerate eleven-year old will certainly be a child who memorised their number facts when they were young and has never forgotten them since. The more practice we can give our infant children with learning these pairs of numbers, the better. Memory games such as pelmonism/pairs and snap are perfect!

Coins and money

Coins can be very useful in two ways. Play 'shopping' with your child - allowing them to 'pay' for things using real money and giving them

'change'. The concept of change is quite a hard one and playing is a good way to help children understand it. Such play also helps children to recognise the coins and to develop an understanding of their value - brown coins, not worth much, silver coins worth more, and gold coins worth a lot! We can also use coins to show how tens and units work. Use 10ps and 1ps to make and compare different amounts, for example, 31p and 13p - three 10ps and one 1p looks very different to a child from one 10p and three 1ps. Stress thirty and one more, or forty and two more (42p) etc. It is important that four 10ps is seen as forty and not four!

Shapes

This is the age when children really start to compare and name different shapes. The first and most important distinction is between flat shapes - two-dimensional, and solid shapes - three-dimensional. Children can compare solid shapes that roll with those that slide, for example, cubes and cuboids (shoe boxes) slide, while cylinders (baked bean tins) and spheres (balls) roll. They can look out for and spot flat shapes such as squares, oblongs, circles and triangles. It is important that children realise that a triangle is a 3-sided flat shape whichever way up it is! There is no such thing, mathematically, as an 'upside-down' triangle!

Measuring

Probably the most important and difficult measure that children need to come to understand at this stage is that of measuring time. Help your child to learn the days of the week and also, much harder, the months of the year. Make a frieze showing something special that happens in each month and put it up near their bed. Children can also recognise the different hours of the day, reading these on both digital displays and on clock faces. At school, children will also be getting to grips with how we measure how long or tall things are, as well as how heavy or light. The main things for them to understand is that all measurement involves repeating a unit - 22 centimetres are the same length as my hand, and 6 kilogram weights are the same as our baby!