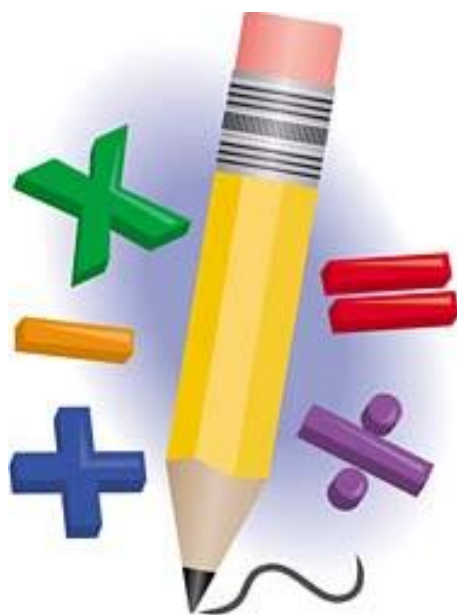


Sums & Things ..

Some help for parents

Maths Booklet 1



0 1 2 3 4 5 6 7 8 9

If you were brought up on pages of 'hard sums' you may think maths is difficult and boring. Worse than that you may think you're not very good at it!!! That's a real shame because it is a fun subject and for most people, if they are taught to understand numbers, they should be reasonably easy to grasp and use.

The foundations for recorded mathematics are developed through many practical activities. These help the children grasp concepts that are needed for later recorded work. Within this booklet you will find examples of the types of recorded work used at Key Stage 1.

If what you remember as maths is pages of sums you may sometimes feel confused when your child's maths book contains writing, pictures, diagrams, jottings or blank number lines and not many 'formal calculations'. This is because written calculations are not the ultimate aim: the aim is for children to do calculations in their heads and, if the numbers are too large, to use a way of writing them down that helps their thinking.

Here we try, as simply as possible, to help you to help your children. We take you through the ideas relating to children's number development from the earliest counting and mental skills to their recording of calculations to support thinking.

Looking at addition & subtraction

When children are in years 1 and 2 they are **not** expected to do vertical sums like $\begin{array}{r} 6 \\ +4 \\ \hline 10 \end{array}$ but that doesn't mean they won't learn that $6+4=10$.

$$\begin{array}{r} +4 \\ 6 \\ \hline 10 \end{array}$$

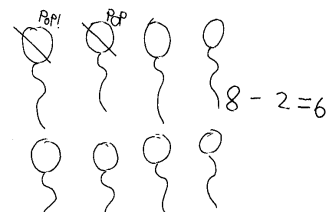
They will be doing a daily mixture of practical, mental and oral work including lots of counting, talking about numbers and using numbers in real life activities. They will begin to record what they've done with pictures and numbers. These recordings will help them to understand what is happening and to show how they've worked something out. Here are two examples of early recording.

Jane had 3 bears. She was given 2 more. How many does she have now?



3 $3 + 2 = 5$

There were 8 balloons. Two popped. How many are left?



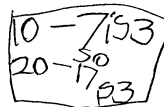
$8 - 2 = 6$

This next example shows how different children have worked out and recorded the answer to the same problem about the children in the class.

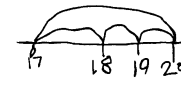
There are 20 children in our class. Three are away today. How many are here?



17 here



2 away would be 18
so 3 away must be 17



$20 - 3 = 17$

These diagrams and jottings help the children to see what is happening to the numbers and to use some facts they already know to help them work out others.

This progresses to using horizontal recording of addition and subtraction to support their mental calculations. The examples below show two ways of adding 43 and 26. The first example splits the numbers into tens and ones (units) then adds the tens followed by the ones to give 69. The second example shows using a blank number line; starting with the largest number and then adding the tens and ones from the second number.

In a school there are 43 boys and 26 girls. How many children are there altogether?

Example 1

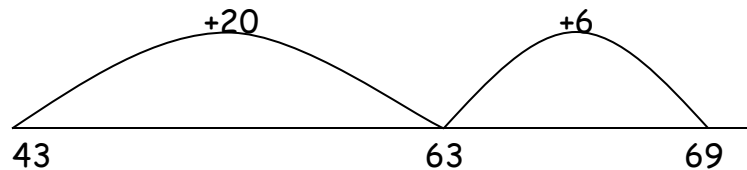
$$43 + 26 =$$

$$40 + 20 = 60$$

$$3 + 6 = 9$$

$$60 + 9 = 69$$

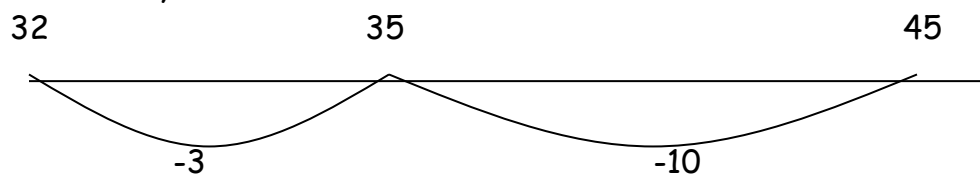
Example 2



For subtraction there are two ways of attempting a question which are often determined by the size of the numbers or the wording of a problem. In both examples you can see that children use a number line to support their thinking. The first example below shows using a blank number line to take away one number from the other, starting on the right with the larger number and counting back. The second example shows starting with the lower number and counting on to the larger number to find the difference between the two.

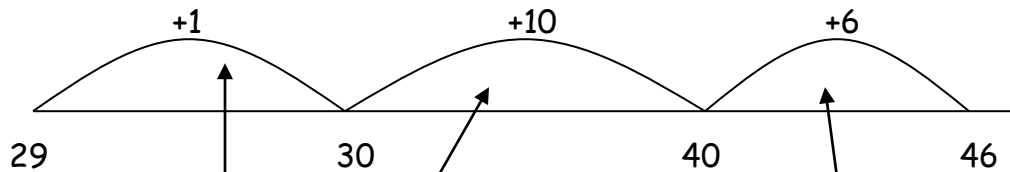
Example 1

*There are 45 sweets in a jar and 13 are eaten by the children.
How many sweets are left?*



Example 2

One piece of rope is 46 metres long and the other is 29 metres long. How much longer is the first piece of rope?



In this method the children start on the left of the number line with the smallest number. They then jump to the next multiple of ten (referred to as the next 10/next friendly number) and record above the number line what the jump is. They jump in multiples of 10 until they reach the last tens number before the final number and record above the jump. They then jump to the final number and record the ones/units of the jump. The answer to the question is then found by adding up the jumps to find the total difference between the two numbers. So the answer is 17.

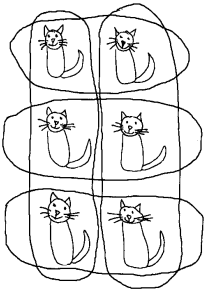
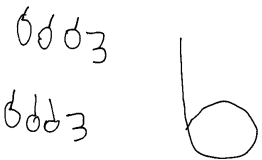
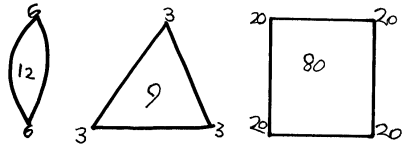
Looking at multiplication & division

Did anyone ever tell you that you only needed to learn about half of the multiplication tables in order to know them all? If they didn't it was a bit mean because if you know $3 \times 4 = 12$ you also know $4 \times 3 = 12$, so why learn it twice?

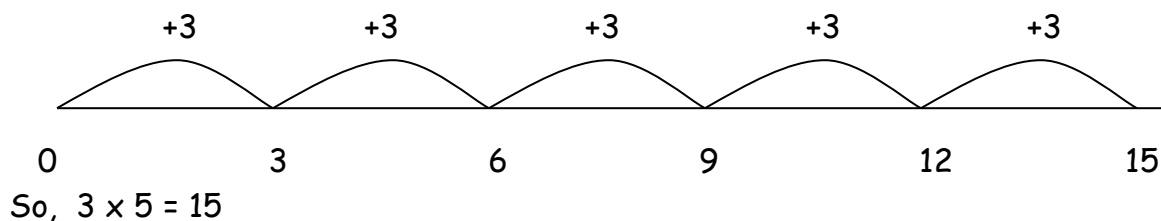
In year 2 the children begin to learn times tables and the end of year expectation is that they know from memory the multiplication facts in the 10, 2 and 5 times tables.

The early work children do in this area will introduce them to the ideas of multiplication and division. They will be counting in different patterns, helped to see how multiplication is repeated addition and shown how division is the opposite of multiplication.

In years 1 & 2 the children will be recording to demonstrate how they have done something and to show that they've understood what is happening, as below.

		 $12 = 2 \times 6$ $9 = 3 \times 3$ $80 = 4 \times 20$ $80 \div 4 = 20$ $80 \div 20 = 4$
2×3 cats = 6 cats or 3×2 cats = 6 cats	2 lots of 3 apples makes 6 apples.	

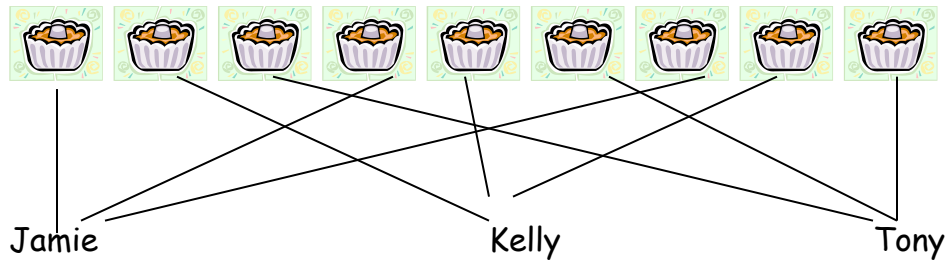
This then progresses to recording the repeated addition on a number line.
 $3 \times 5 = 3 + 3 + 3 + 3 + 3$



In year two the children are introduced to the division sign $\div$ and that it can mean sharing or grouping. The word problems below demonstrate a sharing and a grouping problem.

Sharing

The tray had 9 cakes in and they were shared out between Jamie, Kelly and Tony. Each child had the same number of cakes. How many did they have each?



So, $9 \div 3 = 3$

Grouping

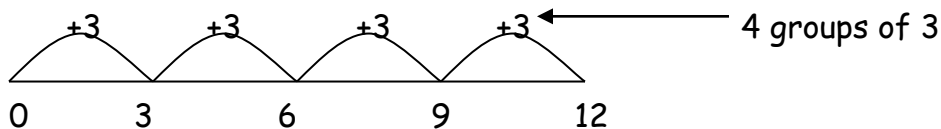
The apples need putting into bags with 5 apples in each bag. Julie has 15 apples. How many bags will she need?



So, $15 \div 5 = 3$

There is more of a focus on the grouping concept as this leads into the methods for working out division calculations later in the school and it shows how division is the inverse of multiplication. Once the children have had practical experience of grouping they will begin to work out how many groups of a number there are using a number line.

$$12 \div 3$$



So, $12 \div 3 = 4$

Hopefully reading this has made you feel a little more confident and comfortable with the way your child will be approaching number work at school and therefore better able to help your children. Remember if you have any concerns or questions it's always better to talk to your child's teacher rather than pulling the children in different directions or worrying about what's going on. Children (and adults) need to feel confident with numbers and to enjoy playing with them and using them, that's really what it's all about. It then means using them for everyday purposes becomes a doddle rather than a threat.