

Key Stage 2 Maths information for parents

Place Value

It is important that children understand what each digit in a number means, (3 digits in year 3 and 4 digits in year 4)

$356 = 300 + 50 + 6$ because the number has 3 hundreds, 5 tens and 6 ones. Knowing this will enable children to complete the more formal calculation methods of Key Stage 2 with mathematical understanding.

Addition

Initially the children are taught to record addition using the expanded column addition method

$$567 + 189 =$$

Sometimes each number sentence can be written out

$$7 + 9 = 16$$

$$60 + 80 = 140$$

$$500 + 100 = 600$$

$$600 + 140 + 16 = 756$$

Then...

$$567 +$$

$$189$$

$$16$$

$$140$$

$$600$$

$$756$$

This moves onto column addition:

$$\begin{array}{r} 567 + \\ 189 \\ \hline 756 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 1354 + \\ 6587 \\ \hline 7941 \\ \hline 11 \end{array}$$

Subtraction

Children are taught to subtract by partitioning and recombining numbers in year 2.

Initially they are taught the expanded column method.

$$\begin{array}{r} 56 - \\ 24 \\ \hline 2 \\ 30 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 367 - \\ 135 \\ \hline 2 \\ 30 \\ 200 \\ \hline 232 \end{array}$$

This can be transferred to a simple column method.

$$\begin{array}{r} 56 - \\ 24 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 367 - \\ 135 \\ \hline 232 \end{array}$$

Substitution is then introduced:

$$\begin{array}{r} \overset{5}{\cancel{6}} \overset{1}{3} - \\ 28 \\ \hline 35 \end{array}$$

$$\begin{array}{r} \overset{4}{\cancel{5}} \overset{15}{\cancel{6}} \overset{1}{7} - \\ 189 \\ \hline 378 \end{array}$$

$$\begin{array}{r} \overset{1}{\cancel{2}} \overset{15}{\cancel{6}} \overset{14}{\cancel{5}} \overset{1}{\cancel{2}} - \\ 1876 \\ \hline 776 \end{array}$$

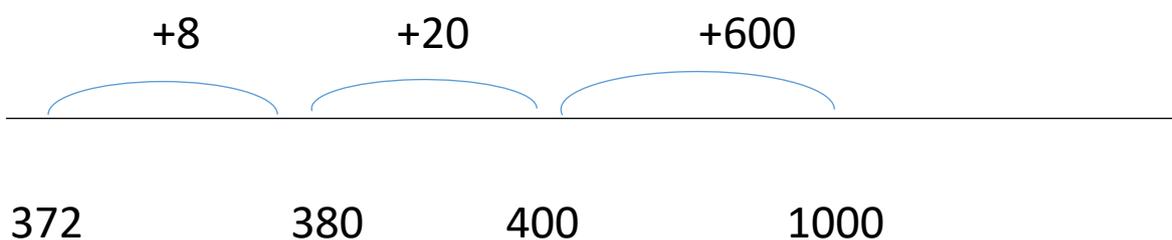
Finding the difference

Children should understand that they can find the difference either by completing a subtraction sum or by counting on from the smaller number to the bigger number. Eventually the children should be able to decide for themselves which is the best strategy to use depending on what they are being asked to do. This is particularly useful when finding change or finding the missing number in a word problem or number sentence. When counting on a number line is still a useful tool to aid mental calculation.

I buy a hat that costs £3.72. How much change will I get from £10?

Firstly convert both amounts of money to pence so we are finding the difference between 372p and 1000p.

Use known number facts to 'jump along the number line until you have got all the way from the smaller amount to the bigger amount. Then add up the numbers you have added each time.



So $600 + 20 + 8 = 628\text{p}$ or £6.28

Multiplication

Children are introduced to multiplication in younger years by using visual arrays and by counting in different steps. By the end of year 4 children are expected to know the times table facts up to 12×12 .

They are also taught more formal written methods

The grid method:

$$\begin{array}{r|rr} \times & 10 & 2 \\ \hline 6 & 60 & 12 \end{array} \quad 60 + 12 = 72$$

The column method:

$$\begin{array}{r} 12 \times \\ 6 \\ \hline 72 \\ 1 \end{array}$$

This can be extended to larger numbers

$$\begin{array}{r} 126 \times \\ 9 \\ \hline 1134 \\ 25 \end{array}$$

Division

It is important for children to recognise and understand the link between multiplication and division and to think of division as being 'grouping' For example, 30 divided by 5 means how many 5s can we fit into 30. Therefore the children can count in 5s until they get to 30, giving them the answer of 6.

The children are taught the 'bus stop' method for division.

$$\begin{array}{r} 14 \\ 7 \overline{) 98} \end{array}$$

How many 7s are in 9? 1 with 2 left, the extra '2' is then placed beside the next number meaning the second part of the question is how many 7s are there in 28? Each time an answer is calculated, it is written on top of the bus shelter line.

$$\begin{array}{r} 142 \\ 7 \overline{) 9294} \end{array}$$

How many 7s are in 9? 1 with 2 left, the extra '2' is then placed beside the next number (in this case 9,) meaning the second part of the question becomes how many 7s are in 29? There are 4 with 1 left. The extra '1' is then placed beside the third digit (4) meaning that the last part of the question is how many 7s are there in 14? Each time an answer is calculated it is written on top of the bus stop line. For some children it may be helpful to jot down the multiples of 7 at the side to make an 'I know' list (this is further developed in long division in years 5 and 6)

Beth Ambler 2021

