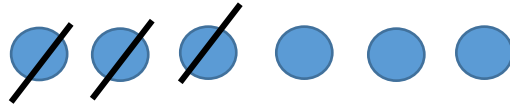


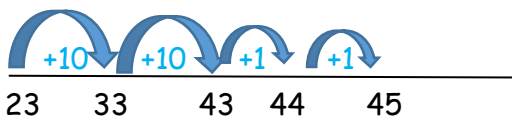
Year 2 Calculation Booklet

ADDITION

When counting pictures on a page encourage children to cross off the picture they have counted to ensure these are not counted twice.

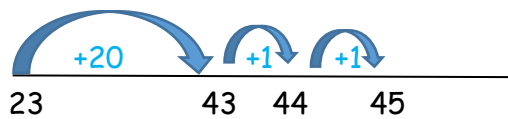


$$23 + 22 = 45$$



Reducing jumps further when confident

$$23 + 22 = 45$$



Partitioning

$$\begin{array}{cc}
 35 & 23 \\
 \swarrow \searrow & \swarrow \searrow \\
 30 & 5 & 20 & 3 \\
 30 + 20 + 5 + 3 = 58
 \end{array}$$

Expanded Method - Formal column addition

Script: The addition of the tens in the calculation $60 + 80$ is described in the words as 'sixty plus eighty equals one hundred and forty,' not 'six plus eight equals fourteen.'

This could be taught practically first.

The compact column method:

Different colours could be used to distinguish between the units, tens etc. if children are struggling to understand this abstract concept. It helps with visual learners.

Children will carry below the line and use their place value to place it in the correct column.

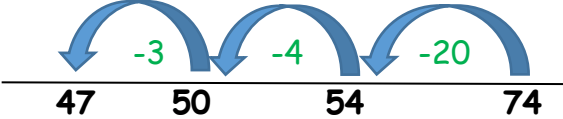
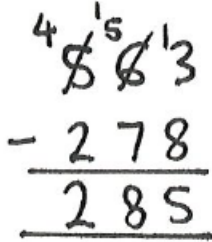
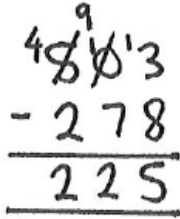
$$\begin{array}{r}
 267 \\
 + 85 \\
 \hline
 12 \text{ (7+5)} \\
 140 \text{ (60+80)} \\
 200 \text{ (200+0)} \\
 \hline
 352
 \end{array}$$

$$\begin{array}{r}
 9768 \\
 + 4153 \\
 \hline
 13921 \\
 \hline
 11
 \end{array}$$

or

$$\begin{array}{r}
 9768 \\
 + 4153 \\
 \hline
 13921
 \end{array}$$

Addition with decimals	$\begin{array}{r} \pounds 2.67 \\ + \pounds 0.85 \\ \hline 12 \text{ (7p + 5p)} \\ 140 \text{ (60p + 80p)} \\ \underline{200} \text{ (\pounds 2 + \pounds 0)} \\ \pounds 3.52 \end{array}$
------------------------	--

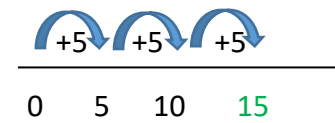
SUBTRACTION	
<p>Counting Back</p> <p>N.B. Children start on previously created number lines, but can move on blank number lines drawn with only relevant numbers recorded.</p>	$74 - 27 = 47$ 
<p>Moving to shorter more efficient methods to the formal compact method.</p> <p>Expanded method:</p> <p>Example 1 : $563 - 241$ (Estimation: $550 - 250 = 300$)</p>	$\begin{array}{r} 563 \\ \underline{241} \\ 2 \text{ (3 - 1)} \\ 20 \text{ (60 - 40)} \\ \underline{300} \text{ (500 - 200)} \\ 322 \end{array}$
<p>Example: $563 - 278$, adjustment from the hundreds to the tens and the tens to the ones.</p> <p>(Estimation: $550 - 250 = 300$)</p> <p>Script: Using the inverse to support checking answers. You can also check the final answer by adding it to the smaller number. If it adds up to the larger number, it is correct.</p>	
<p>Compact method</p> <p>Example: $503 - 278$</p> <p>(Estimation: $500 - 300 = 200$)</p>	

MULTIPLICATION

Number lines

Counting up in 3 groups of 5

$$3 \times 5 = 15$$



Multiplication arrays

This can be used by sharing out apparatus practically, such as fruits, teddies, cubes etc.

$$3 \times 5 =$$



$$5 \times 3 =$$



Grid method

$$73 \times 3 =$$

x	70	3
3	210	9

$$\begin{array}{r}
 210 \\
 + 9 \\
 \hline
 219
 \end{array}$$

$$35 \times 73 =$$

x	70	3
30	2100	90
5	350	15

$$\begin{array}{r}
 2100 \\
 + 350 \\
 + 90 \\
 + 15 \\
 \hline
 2555 \\
 \hline
 1
 \end{array}$$

DIVISION

Repeated subtraction

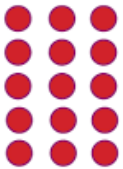
$$21 \div 7 = 3$$

$$21 - 7 - 7 - 7 = 3$$

This could be recorded in the form of arrays:

This can be used by sharing out apparatus practically, such as fruits, teddies, cubes etc.

$$15 \div 3 =$$



Number lines

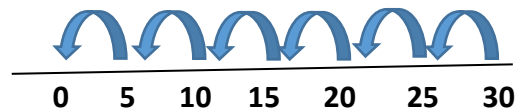
As children gain confidence with their times tables they will recognise how many steps to take.

There are 30 cakes.

There are five children.

How many will they get each?

$$30 \div 5 =$$



NB: I took away 6 lots of 5

How many fives go into 54?

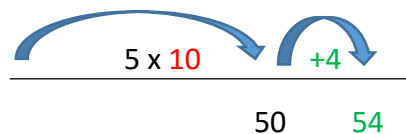
$5 \times 10 = 50$ or 10 lots of five are 50.

4 left over

Answer is 10 r 4

There are 54 children in the year group. They sit in rows of 5 in the hall. How many rows are needed?

$$54 \div 5 = 5 \text{ r } 4$$



Formal division will use the bus stop/compact format $HTU \div U$.

$$4 \overline{) 22730} \begin{matrix} 067 \text{ r } 2 \end{matrix}$$