

# How we teach Maths at Ellingham

## Year 4



A helpful guide for  
parents

# Addition

Addition is taught in the following stages:

Column addition (up to 4 digits) - add picture with detail of how to

When their place value is secure, children move on to formal written column addition. They recognise that when adding, it can change more than one column. They start by adding numbers where there is one exchange needed before learning to exchange in multiple columns.

Children start by adding the ones column, then tens, then hundreds. If the sum of the digits in a column is greater than 9, exchange into the 'tens' column.

$$\begin{array}{r} \text{T O} \\ 67 \\ + 49 \\ \hline 116 \end{array}$$

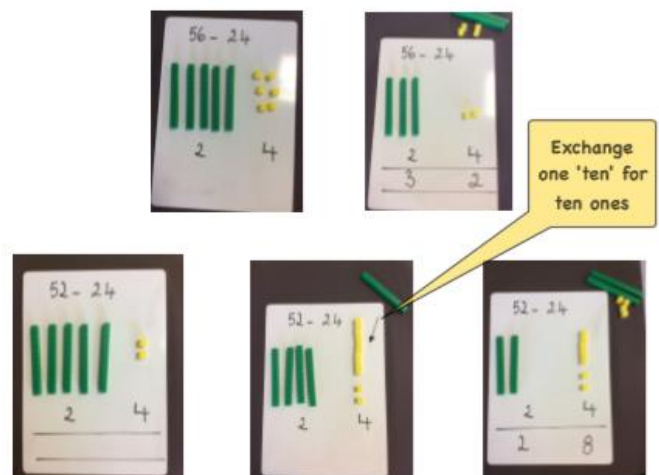
$$\begin{array}{r} \text{H T O} \\ 223 \\ + 197 \\ \hline 420 \end{array}$$

# Subtraction

Subtraction is taught in the following stages:

Vertical partitioning (using Base 10)

Arranging the tens and ones in columns prepares the children for formal column subtraction. Children may use the concrete resources or may prefer drawing the tens and ones.



## Column subtraction

When their place value is secure, children move on to formal written column subtraction. They start by subtracting numbers where there is one exchange needed before learning to exchange in two different columns.

Children start by subtracting the ones column, then tens, then hundreds. If the upper digit is smaller than the lower digit, exchange from the column to the left.

$$\begin{array}{r} 925 - 61 \\ \hline 864 \end{array}$$

$$\begin{array}{r} 83 - 25 \\ \hline 58 \end{array}$$

# Multiplication

Multiplication is taught in the following stages:

## Using known facts

Children are expected to recall all of the multiplication facts up to  $12 \times 12$ .

## Related facts

Children use known multiplication facts to solve other problems. They understand that because one of the numbers in the calculation is ten times bigger, then the answer will also be ten times bigger. They associate this language with meaning 'multiply by 10'. Children then build on this by multiplying by 100.

$$\begin{array}{l} 4 \times 67 = 268 \\ 40 \times 67 = 2680 \end{array}$$

## Short multiplication

Children use the formal method of column multiplication alongside concrete representations. They use their knowledge of exchanging and apply this to multiplication, including exchanging groups of tens. They explore multiplication with no exchange, then move on to multiplication with an exchange, then multiple exchanges.

$$\begin{array}{r} 72 \times 5 \\ \hline 10 \text{ (5} \times 2\text{)} \\ + 350 \text{ (5} \times 70\text{)} \\ \hline 360 \end{array}$$

$$\begin{array}{r} 72 \times 5 \\ \hline 360 \end{array}$$

Children recap using the expanded method where each step of the multiplication is outlined before moving onto normal short multiplication. Start by multiplying the ones digit of the top number with the multiplier. If the total is larger than 9, exchange into the 'tens' column.

# Division

Division is taught in the following stages:

## Using known facts

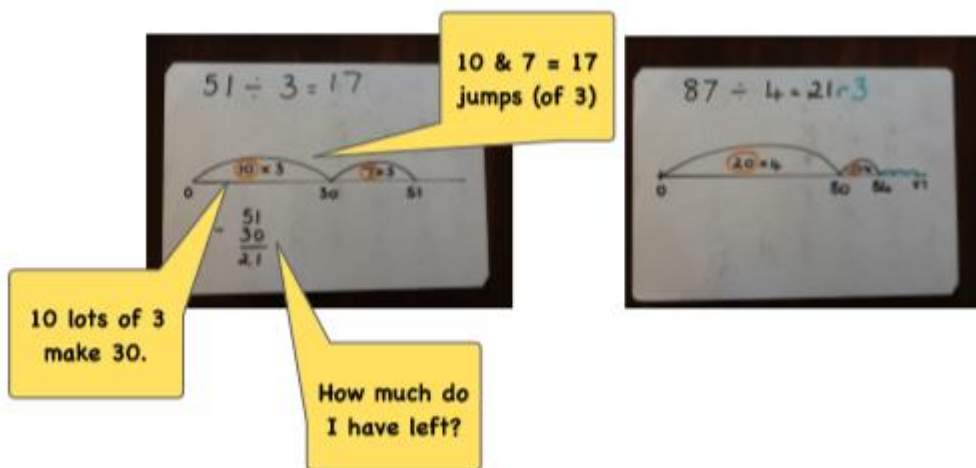
Children are expected to recall all the multiplication facts for times tables up to  $12 \times 12$  and will use their understanding of the relationship between multiplication and division to recall the division facts. If I know that  $6 \times 3 = 18$ , I also know that  $18 \div 3 = 6$  and  $18 \div 6 = 3$

## Related facts

Children use known division facts to solve other problems. They understand that because one of the numbers in the calculation is ten times bigger, then the answer will also be ten times bigger.

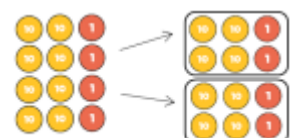
## Using a number line

Children understand division as 'how many ... in ...?' The number line is a pictorial representation to work this out. They will move on to using larger jumps.



## Partitioning

Children move on to dividing by partitioning numbers into tens and ones and sharing into equal groups. They start by dividing numbers that do not involve exchanges or remainders. They then move on to dividing numbers where they are required to exchange between the tens and ones. It is important that children divide the tens first, then the ones.



### Short division

Children move on to the formal written method of short division, sometimes called the bus stop method. The number to be divided (the dividend) is placed inside the division symbol (the bus stop), with the number dividing it (the divisor) written outside.

Divide each digit in turn by the divisor, starting with the largest digit, working left to right. Record a remainder by writing it next to the digit in the column to the right. Repeat the process for all remaining digits.

Handwritten short division of 75 by 5 on a grid. The dividend 75 is written inside a vertical bar, and the divisor 5 is written to the left. The quotient 15 is written above the bar.

$$\begin{array}{r} 15 \\ 5 \overline{) 75} \end{array}$$

Handwritten short division of 115 by 5 on a grid. The dividend 115 is written inside a vertical bar, and the divisor 5 is written to the left. The quotient 23 is written above the bar.

$$\begin{array}{r} 23 \\ 5 \overline{) 115} \end{array}$$

### Short division with remainders

If there are still digits to exchange at the end of a calculation, they are recorded as a remainder (r) at the end of the answer.

Handwritten short division of 97 by 4 on a grid. The dividend 97 is written inside a vertical bar, and the divisor 4 is written to the left. The quotient 24 is written above the bar, and a remainder of 1 (r1) is written to the right of the bar.

$$\begin{array}{r} 24 \text{ r } 1 \\ 4 \overline{) 97} \end{array}$$