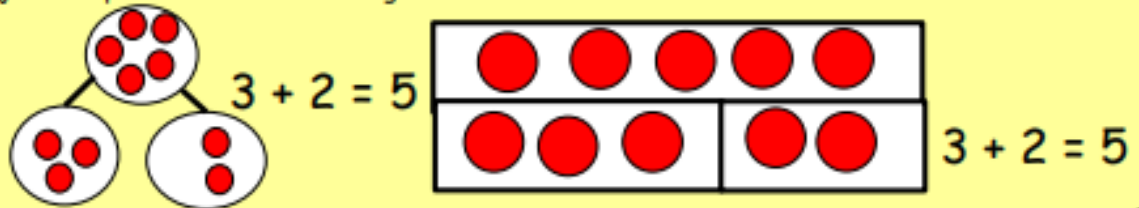


ADDITION +

EYFS

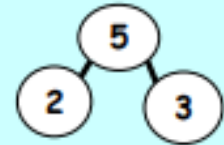
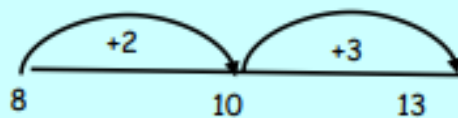
Counting a variety of concrete resources including everyday objects. Combine groups of objects or pictures and count altogether to find the total.



YEAR 1

Jumps on a number line by partitioning a 1 digit number using a part-part-whole to support, e.g $8 + 5 = 13$ or $27 + 7 = 34$.

Ensure children receive a diet of concrete, pictorial and abstract stimuli.



YEAR 2

Expanded column method
e.g $33 + 8 = 41$

Moving on to adding 2 digit numbers, e.g $26 + 32 = 58$

See webinar for supporting pedagogy.

$$\begin{array}{r} 33 \\ + 8 \\ \hline 41 \end{array}$$

$3 + 8 = 11$
 $30 + 0 = 30$

YEAR 3

Compact column method. See webinar for supporting pedagogy.

$$\begin{array}{r} 1 \\ 56 \\ + 65 \\ \hline 121 \end{array}$$

YEAR 4

Compact column method for whole numbers.
Expanded column method for decimals.

$356 + 465 = 821$

$$\begin{array}{r} 1 \quad 1 \\ 356 \\ + 465 \\ \hline 821 \end{array}$$

$72.8 + 54.6 = 127.4$

$$\begin{array}{r} 72.8 \\ + 54.6 \\ \hline 127.4 \end{array}$$

YEAR 5

Compact column method for whole numbers.
Compact column method for decimals.

$3259 + 7698 = 10,857$

$$\begin{array}{r} 3259 \\ + 7698 \\ \hline 10857 \end{array}$$

$72.8 + 54.6 = 127.4$

$$\begin{array}{r} 72.8 \\ + 54.6 \\ \hline 127.4 \end{array}$$

YEAR 6

Compact column method. Compact method used with decimals of increasing difficulty, e.g

$72.8 + 54.6 = 127.4$

$$\begin{array}{r} 72.8 \\ + 54.6 \\ \hline 127.4 \end{array}$$

then...

$13.86 + 9.481 = 23.341$

$$\begin{array}{r} 13.86 \\ + 9.481 \\ \hline 23.341 \end{array}$$

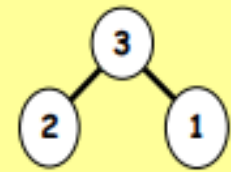
SUBTRACTION -

EYFS

Taking away everyday objects and count how many are left.

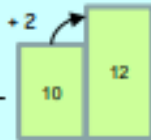
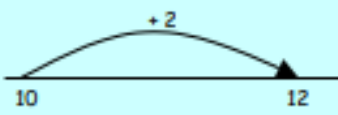


$$3 - 2 = 1$$

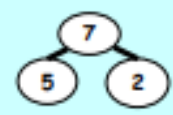
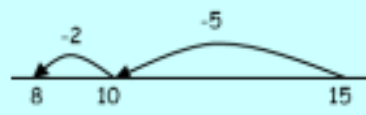


YEAR 1

Using a number line to find a small difference, e.g. $12 - 10 = 2$



Use a number line and partition numbers to subtract, counting backwards, e.g. $15 - 7 = 8$



YEAR 2

Expanded column including exchange e.g. $38 - 19 = 19$.

$$\begin{array}{r} \cancel{30} \\ - 10 \\ \hline 10 \end{array}$$

YEAR 3

Expanded column then compact column method. See webinar for supporting pedagogy.

$$238 - 119 = 119$$

$$\begin{array}{r} \cancel{200} \\ - 100 \\ \hline 100 \end{array}$$

$$\begin{array}{r} 874 \\ - 523 \\ \hline 351 \end{array}$$

$$\begin{array}{r} \cancel{9} \cancel{5} \\ - 537 \\ \hline 415 \end{array}$$

YEAR 4

Compact column for whole numbers. Expanded leading to compact for decimals.

$$\begin{array}{r} \cancel{9} \cancel{9} \\ - 7537 \\ \hline 2415 \end{array}$$

$$6.3 - 2.1 = 4.2$$

$$\begin{array}{r} 6.0 \\ - 2.0 \\ \hline 4.0 \end{array}$$

$$6.1 - 2.4 = 3.7$$

$$\begin{array}{r} \cancel{6} \\ - 2.4 \\ \hline 3.7 \end{array}$$

YEAR 5

Compact column method for whole numbers. Compact column method for decimals.

$$9952 - 7537 = 2415$$

$$\begin{array}{r} \cancel{9} \cancel{9} \\ - 7537 \\ \hline 2415 \end{array}$$

$$72.8 - 54.6 = 18.2$$

$$\begin{array}{r} \cancel{7} \\ - 54.6 \\ \hline 18.2 \end{array}$$

YEAR 6

Compact column method. Compact method used with decimals of increasing difficulty

$$2325 - 1568 = 757$$

$$\begin{array}{r} \\ \cancel{2} \cancel{3} \cancel{2} \\ - 1568 \\ \hline 757 \end{array}$$

DIVISION ÷

YEAR 1 /EYFS

Sharing. 6 sweets are shared between two people. How many do they each have?

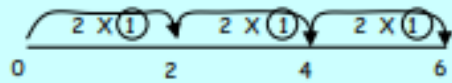


Grouping. Children sort objects into 2s, 3s, 4s, etc. For example, how many pairs of socks are there?



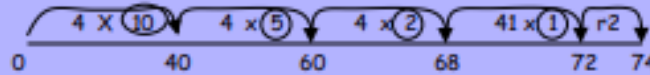
YEAR 2

Grouping / chunking using a number line, e.g $6 \div 2 = 3$



YEAR 3

Grouping / chunking using multiplication facts (x10, x5, x2) with & without remainders. $74 \div 4 = 18 \text{ r}2$



YEAR 4

Vertical chunking.

$$222 \div 6 = 37$$

Number facts:

$$6 \times 20 = 120$$

$$6 \times 10 = 60$$

$$6 \times 5 = 30$$

$$6 \times 2 = 12$$

$$\begin{array}{r} 222 \\ - 120 \\ \hline 102 \\ - 60 \\ \hline 42 \\ - 30 \\ \hline 12 \\ - 12 \\ \hline 0 \end{array}$$

$$6 \times 20$$

$$6 \times 10$$

$$6 \times 5$$

$$6 \times 2$$

Short Division

$$98 \div 7 = 14$$

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

$$432 \div 5 = 86 \text{ r}2$$

$$\begin{array}{r} 86 \text{ r}2 \\ 5 \overline{) 432} \end{array}$$

YEAR 5

Short division. Vertical chunking method (see Year 4) transitioning into long division when children are conceptually secure with chunking. Chunking for decimals.

$$496 \div 11 = 45 \text{ r}1$$

$$\begin{array}{r} 45 \text{ r}1 \\ 11 \overline{) 496} \end{array}$$

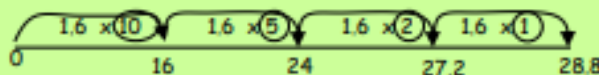
$$965 \div 5 = 193$$

$$\begin{array}{r} 193 \\ 5 \overline{) 965} \\ - 95 \\ \hline 15 \\ - 15 \\ \hline 0 \end{array}$$

$$432 \div 15 = 28 \text{ r}12$$

$$\begin{array}{r} 28 \text{ r}12 \\ 15 \overline{) 432} \\ - 30 \\ \hline 132 \\ - 120 \\ \hline 12 \end{array}$$

$$28.8 \div 1.6 = 18$$



YEAR 6

Short and long division with numbers of increasing complexity. Methods as Year 5.

Introduce showing the remainder as a decimal.

MULTIPLICATION X

YEAR 1

Counting groups of the same size.



Rows:
 $3 + 3$
 3 multiplied by 2
 3×2

Columns:
 $2 + 2 + 2$
 2 multiplied by 3
 $2 \times 3 = 6$

There are 3 sweets in one bag. How many sweets are there in 5 bags? $3 \times 5 = 15$



YEAR 2

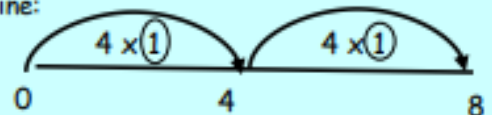
Children use arrays, repeated addition and the number line:



Rows:
 $4 + 4 = 8$
 $4 \times 2 = 8$

Columns

$2 + 2 + 2 + 2 = 8$ or
 $2 \times 4 = 8$



Then move on to the grid method multiplying a 2 digit number, e.g. $15 \times 2 = 30$

x	10	5	=	30
2	20	10		

YEAR 3

Grid method. E.g. $84 \times 4 = 336$

x	80	4	=	336
4	320	16		

YEAR 4

Short multiplication (i.e. multiplying by a single digit) for whole numbers. Continue to use grid method for decimals.

$24 \times 6 = 144$

24
x 6
144
2

$342 \times 7 = 2394$

342
x 7
2394
21

$7.3 \times 6 = 43.8$

x	7	0.3
6	42	1.8

Encourage pattern spotting with your child, e.g. $6 \times 3 = 18$ so $6 \times 0.3 = 1.8$

YEAR 5

Long multiplication (i.e. multiplying by more than 1 digit) for whole numbers and short multiplication for decimals.

$124 \times 26 = 3224$

124
x 26
744
2480
3224
11

3.24
x 6
19.44
12

YEAR 6

Long multiplication of whole numbers and decimals.

3.24
x 26
19.44
64.80
84.24
11

1324
x 26
7944
26480
34424
111