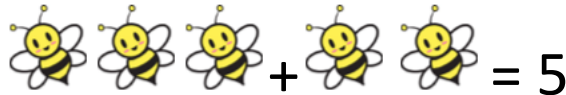


Addition

Stage 1

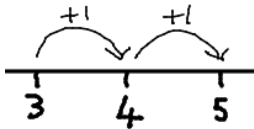
- Children understand the concept of addition as the combining of 2 or more groups.

- They count using objects starting at the largest number



- They use the + and = symbols correctly, understanding that: $2 + 3 = 5$ and $5 = 2 + 3$

- Extend to counting up in ones on a number line:



- They begin to count using **dienes equipment** (ones and tens)

Stage 4

- Children should now use column addition of 2, 3 and 4 digit numbers using this expanded method:
- Place value counters can be used to model this

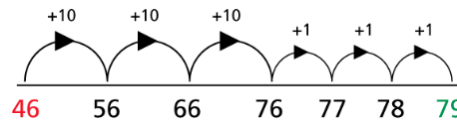
$$\begin{array}{r} 700 + 80 + 9 \\ 600 + 40 + 2 \\ \hline 1300 + 120 + 11 = 1431 \end{array}$$

Recommended by the end of year 3

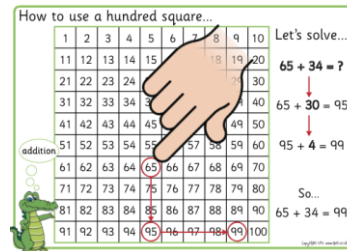
Stage 2

- Children add 2 digit numbers by counting on in tens then ones on a number line:

$$\begin{aligned} 46 + 33 \\ = 46 + 10 + 10 + 10 + 1 + 1 + 1 \\ = 79 \end{aligned}$$



- Children use a **100 square** to begin to add two digit numbers by counting on in tens then ones



Stage 5

- This leads to the short written method of addition in columns using 'carrying'

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \end{array}$$

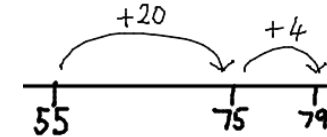
[Video](#)

Recommended by the end of year 4

Stage 3

- Children use an empty number line to extend partitioning adding the tens then the ones

$$\begin{aligned} 55 + 24 \\ = 55 + 20 + 4 \\ = 79 \end{aligned}$$



Children must have a good understanding of place value and partitioning

Recommended by the end of year 2

Stage 6

- The same method is applied to addition of decimals

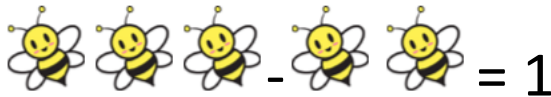
$$\begin{array}{r} 56.85 \\ + 36.85 \\ \hline 93.70 \end{array}$$

Subtraction

Stage 1

- Children understand the concept of subtraction as the taking a number away from another.

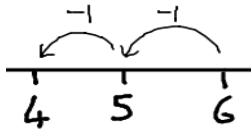
- They take away using objects



- They use the - and = symbols correctly, understanding that:

$$6 - 2 = 4 \quad \text{and} \quad 4 = 6 - 2$$

- Extend to counting backwards in ones on a number line:



- They visualise differences using **multilink**

Stage 4

- Children should now learn vertical subtraction with decomposition
- Dienes equipment can be used to model the method of exchanging

$$\begin{array}{r} \overset{8}{9} \overset{12}{3} \overset{1}{2} \\ - 457 \\ \hline 475 \end{array}$$

start here ↙

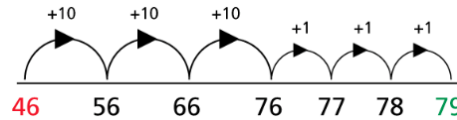
Video

Recommended by the end of year 4

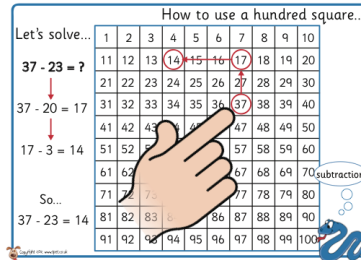
Stage 2

- Children begin to find 'the difference'

$$79 - 46 = 33$$



- Children use a **100 square** to subtract a two digit number by counting back in tens then ones



Stage 3

- Continue to encourage use of number line to find the difference by counting from smaller number to the larger one
- Progress to vertical subtraction without decomposition.
- Dienes equipment can be used to model this

$$\begin{array}{r} 156 \\ - 33 \\ \hline 123 \end{array}$$

start here ↙

Recommended by the end of year 3

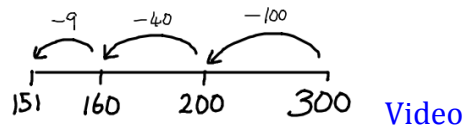
Stage 5

- Subtracting from numbers containing zeroes such as 300 can be done by subtraction with decomposition but children may find using a number line more straight forward. See both methods below:

$$\begin{array}{r} \overset{2}{3} \overset{9}{0} \overset{1}{0} \\ - 149 \\ \hline 151 \end{array}$$

start here ↙

Video




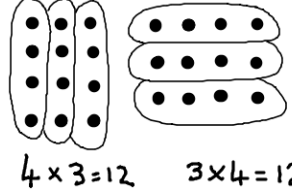
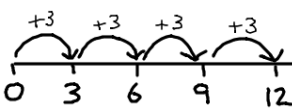
Stage 6

- The same method is applied to subtraction of decimals


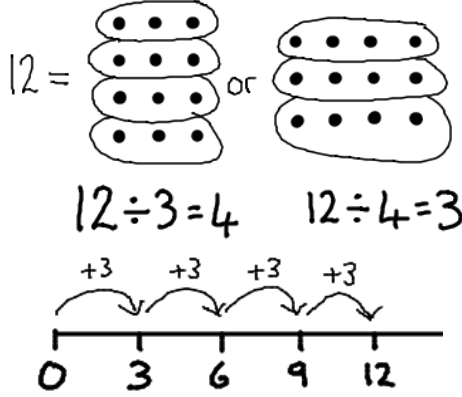

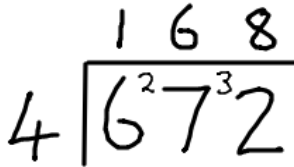
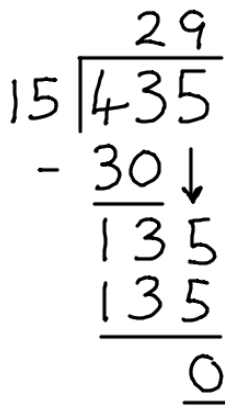
$$\begin{array}{r} \overset{5}{2} \overset{12}{6} \overset{1}{3} \overset{1}{5} \\ - 59.8 \\ \hline 203.7 \end{array}$$

start here ↙

Multiplication

<p style="text-align: center;">Stage 1</p> <ul style="list-style-type: none"> Children begin to understand the concept of multiplication as grouping and 'lots of' and recognise the X symbol  <ul style="list-style-type: none"> They group objects and begin to understand 3 lots of 2 $3 \times 2 = 6$ They use X and = symbols and understand that $3 \times 2 = 6$ $6 = 3 \times 2$ $2 \times 3 = 6$ $6 = 2 \times 3$ 	<p style="text-align: center;">Stage 2</p> <ul style="list-style-type: none"> Children describe multiplication as an array and understand that it can be worked out in any order:   <ul style="list-style-type: none"> They use repeated addition on a number line <p style="text-align: center;">Recommended by the end of year 2</p>	<p style="text-align: center;">Stage 3</p> <ul style="list-style-type: none"> Children partition a number in order to multiply each part by a single digit: 54×6 $4 \times 6 = 24$ $50 \times 6 = 300$ $+ \underline{300}$ $\underline{324}$ <p style="text-align: center; color: red;">Children must be mastering their knowledge and use of 2x 3x 4x 5x 8x 10x table facts</p> <p style="text-align: center;">Recommended by the end of year 3</p>
<p style="text-align: center;">Stage 4</p> <ul style="list-style-type: none"> Children should know all tables to 12x12 Children use a formal written method of short multiplication 354×6 which condenses to: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: left;"> $\begin{array}{r} 354 \\ \times \quad 6 \\ \hline 2124 \end{array}$ </div> <div style="text-align: left;"> $\begin{array}{r} 354 \\ \times \quad 6 \\ \hline 2124 \end{array}$ </div> </div> <p style="text-align: right;">Video</p> <p style="text-align: center;">Recommended by the end of year 4</p>	<p style="text-align: center;">Stage 5</p> <ul style="list-style-type: none"> Children progress to using formal long multiplication to multiply by a 2 digit number 124×26 $\begin{array}{r} 124 \\ \times 26 \\ \hline 744 \\ + 2480 \\ \hline 3224 \end{array}$ <p style="text-align: right;">Video</p> <p style="text-align: center;">Recommended by the end of year 5</p>	<p style="text-align: center;">Stage 6</p> <ul style="list-style-type: none"> Children practice and master written methods continuing to decimals: $\begin{array}{r} 73.15 \\ \times \quad 4 \\ \hline 292.60 \end{array}$

Division

<p style="text-align: center;">Stage 1</p> <ul style="list-style-type: none"> Children begin to understand the concept of division as sharing and grouping and recognise the \div symbol  <ul style="list-style-type: none"> They group objects and begin to understand 6 shared equally by $3 = 2$ $6 \div 3 = 2$ <ul style="list-style-type: none"> They use the \div and $=$ symbols 	<p style="text-align: center;">Stage 2</p> <ul style="list-style-type: none"> Children use arrays to group or divide numbers  <ul style="list-style-type: none"> They use repeated addition on a number line to reach the number <p style="text-align: center;">Recommended by the end of year 2</p>	<p style="text-align: center;">Stage 3</p> <ul style="list-style-type: none"> Children use short division to divide numbers Place Value counters can be used to model this method initially  <p style="text-align: center;">Recommended by the end of year 3</p>
<p style="text-align: center;">Stage 4</p> <ul style="list-style-type: none"> Children use a formal written method of short division to divide 3 digit numbers by 1 digit $672 \div 4$  <p style="text-align: right;">Video</p> <ul style="list-style-type: none"> They then move on to finding remainders <p style="text-align: center;">Recommended by the end of year 4</p>	<p style="text-align: center;">Stage 5</p> <ul style="list-style-type: none"> Children progress to using formal long division to divide by a 2 digit number $435 \div 15$  <p style="text-align: right;">Video</p>	<p style="text-align: center;">Stage 6</p> <ul style="list-style-type: none"> Children practice and master written methods continuing to decimals: $365 \div 4$ 