

Stage 1

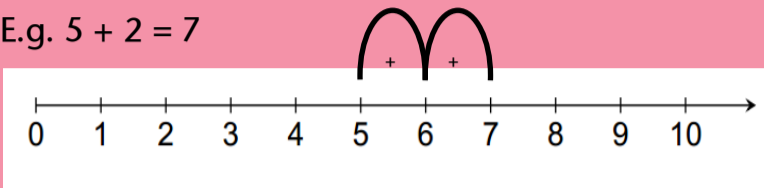
Use pictures, objects and fingers to add 2 groups in practical ways. Touch and align each object counting on from a number to find a total.



Stage 2

Using number lines to count on in units

E.g. $5 + 2 = 7$



Stage 3

E.g. $23 + 12 = 35$

Partition into tens and ones and recombine on an empty number line



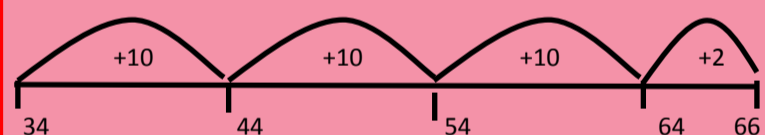
Partition and recombine

$$\begin{array}{r} \text{E.g. } 42 + 36 = 78 \\ \swarrow \quad \downarrow \quad \swarrow \quad \downarrow \\ 40 + 2 + 30 + 6 \end{array}$$

$$\begin{array}{l} 40 + 30 = 70 \\ 2 + 6 = 8 \\ 70 + 8 = 78 \end{array}$$

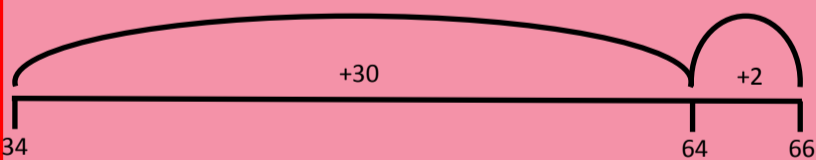
Partition one number on empty number line

E.g. $34 + 32 = 66$



Addition with chunking

E.g. $34 + 32 = 66$

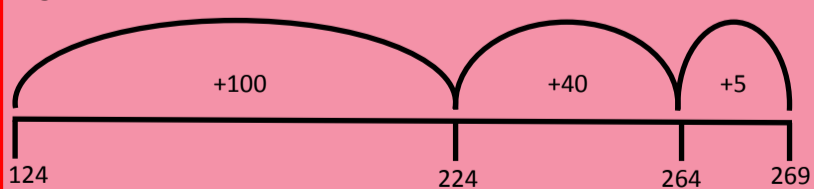


Stage 4

E.g. $124 + 145 = 269$

Partition one number on a number line

E.g. $124 + 145 = 124 + 100 + 40 + 5$



Partition and recombine

$$\begin{array}{r} \text{E.g. } 133 + 158 = 291 \\ 100 + 30 + 3 + 100 + 50 + 8 \\ 200 + 80 + 11 \\ = 291 \end{array}$$

Addition

Stage 5

Stage 1 of column method:

Add tens first then units up to 1000

(building on mental calculation strategies that add biggest number first)

$$\begin{array}{r} \text{TU} \\ 54 \\ + 43 \\ \hline 7 \\ \underline{90} \\ 97 \end{array}$$

Stage 2 of column method:

Expanded addition

Add units first, then tens, then hundreds

$$\begin{array}{r} \text{HTU} \\ 358 \\ + 33 \\ \hline 11 \\ 80 \\ + 300 \\ \hline 391 \end{array}$$

Stage 3 of column method:

Compact method

Add units first, then tens, then hundreds

$$\begin{array}{r} \text{HTU} \\ 1 \\ 358 \\ + 33 \\ \hline 391 \end{array}$$

Stage 6

Stage 3 of column method:

Compact method/ formal written method

Extend to addition of 4 digit numbers

$$\begin{array}{r} 111 \\ 3587 \\ + 675 \\ \hline 4262 \end{array}$$

Extend to addition of more than 2 numbers

$$\begin{array}{r} 21 \\ 671 \\ 98 \\ + 468 \\ \hline 1237 \end{array}$$

Stage 7

Extend to addition of 1 place decimals

$$\begin{array}{r} 72.5 \\ + 54.6 \\ \hline 127.1 \end{array}$$

Extend to addition of 2 place decimals and use with money

$$\begin{array}{r} \pounds 73.42 \\ + \pounds 84.73 \\ \hline \pounds 158.15 \end{array}$$

Extend further to addition of mixed decimals and fractions. Show addition of time on a number line.