

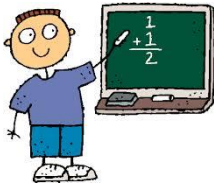


The Linden Academy

Maths Information

Booklet 1

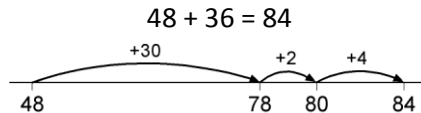
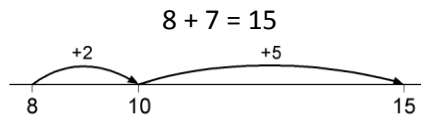
Addition



Stage 1: The empty number line

The empty number line helps to record the steps on the way to calculating the total

Steps in addition can be recorded on a number line. The steps often bridge through a multiple of 10.



or:



Stage 2: Partitioning

The next stage is to record mental methods using partitioning. Add the tens and then the units to form partial sums and then add these partial sums.

Record steps in addition using partitioning:

$$47 + 76 = 47 + 70 = 117 + 6 = 123$$

$$47 + 76 = 40 + 70 + 7 + 6 = 110 + 13 = 123$$

Partitioned numbers are then written under one another:

$$\begin{array}{r} 47 \\ + 76 \\ \hline \end{array} = \begin{array}{r} 40 + 7 \\ 70 + 6 \\ \hline 110 + 13 = 123 \end{array}$$

Stage 3: Expanded method in columns

Write the numbers in columns.

Adding the tens first:

$$\begin{array}{r} 47 \\ + 76 \\ \hline 110 \\ \quad \underline{13} \\ 123 \end{array}$$

Adding the ones first:

$$\begin{array}{r} 47 \\ + 76 \\ \hline \quad \underline{13} \\ 110 \\ 123 \end{array}$$

Discuss how adding the units first, gives the same answer as adding the tens first. Refine over time to adding the unit digits first consistently.

Stage 4: Column method

$$\begin{array}{r} 47 \\ + 76 \\ \hline 123 \\ 11 \end{array} \quad \begin{array}{r} 258 \\ + 87 \\ \hline 345 \\ 11 \end{array} \quad \begin{array}{r} 366 \\ + 458 \\ \hline 824 \\ 11 \end{array}$$

Column addition remains efficient when used with larger whole numbers and decimals. Once learned, the method is quick and reliable.

