

WRITTEN METHODS:

By the end of year 6, children will have a **range** of mental calculation methods and the **one** reliable written method shown in this progression.

Selection will depend on the numbers involved.

Children should not be made to go on to the next stage if:

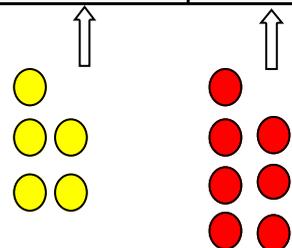
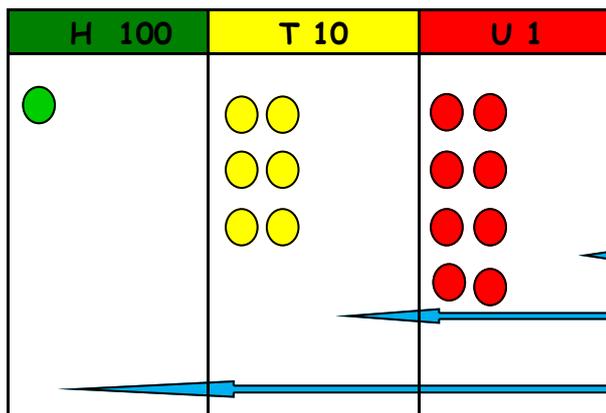
- 1) they are not ready
 - 2) they are not confident
- Children should be encouraged to approximate their answers before calculating.
 - Children should be encouraged to check their answers after the calculation using an appropriate strategy.
 - Children should be encouraged to consider if a mental calculation would be appropriate before using written methods.

EXPANDED WRITTEN METHOD

$$\begin{array}{r}
 168 \\
 + 57 \\
 \hline
 15 \text{ (8+7)} \\
 110 \text{ (60+50)} \\
 100 \\
 \hline
 225
 \end{array}$$

Bracket recording
not expected of
children.

The amount of time that should be spent teaching and practising the expanded method will depend on how secure the children are in their recall of number facts and with partitioning.



$$\begin{array}{r}
 168 \\
 + 57 \\
 \hline
 15 \text{ (8+7)} \\
 110 \text{ (60+50)} \\
 100 \\
 \hline
 225
 \end{array}$$

NOTE: PV (Place Value) counters and boards MUST be used whilst recording in order to develop understanding and efficiency.

Notes **Progression for Written Addition**

STANDARD WRITTEN METHOD/ COMPACT METHOD

The method doesn't change but the recording is reduced.

Only the children who can calculate independently and efficiently with the expanded method should be introduced to the compact method.

Children should practise this method with no 'carrying' first.

'Carry' digits are recorded below the line using the words 'carry' ten or 'carry' hundred.

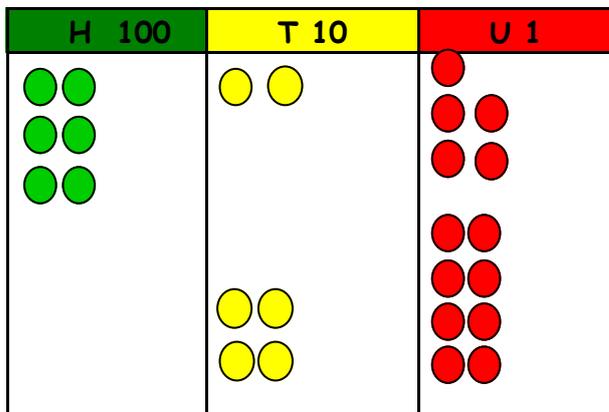
No 'Carrying'

$$\begin{array}{r} 134 \\ + 25 \\ \hline 159 \end{array}$$

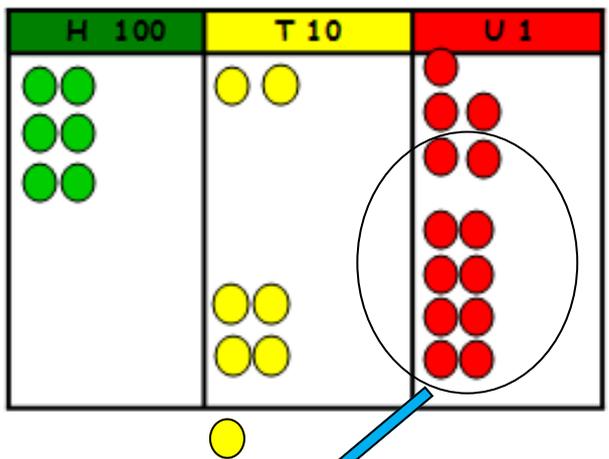
625 + 48 =

One 'Carry' (Units to tens)

$$\begin{array}{r} 625 \\ + 48 \\ \hline 673 \\ 1 \end{array}$$



$$\begin{array}{r} 625 \\ + 48 \\ \hline 673 \\ 1 \end{array}$$



Swap 10 units for one ten and carry it below the line.

Answer equals 673.

Progression for Written Addition

- Tens to hundreds

$$\begin{array}{r} 541 \\ + 293 \\ \hline 834 \\ \hline 1 \end{array}$$

- Two 'Carries' - 'ones to tens' and 'tens to hundreds'

$$\begin{array}{r} 376 \\ + 485 \\ \hline 861 \\ \hline 11 \end{array}$$

- Extend method to numbers with at least four digits.

$$\begin{array}{r} 1587 \\ + 275 \\ \hline 1862 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 3587 \\ + 1675 \\ \hline 5262 \\ \hline 111 \end{array}$$

- Use the compact method extending to numbers with any number of digits.
- Use the compact method to add two or more decimal fractions with at least 4 digits and 2 or 3 decimal places for money/measures e.g. time to thousandths of a second e.g.

Mo Farrah ran the first lap of his 10Km race in 47.142 seconds and the second in 49.295 seconds. How long did it take him to run the first two laps?

$$\begin{array}{r} 47.142 \\ 49.295 \\ \hline + 96.437 \text{ seconds} \\ \hline 11 \end{array}$$

- Know that the decimal points should line up under each other, particularly when adding or subtracting mixed amounts e.g. 43.2m + 2900cm.