

## Pencil and paper procedures (addition)

As outcomes, Year 2 pupils should, for example:

As outcomes, Year 3 pupils should, for example:

Use informal pencil and paper methods (jottings) to support, record and explain partial mental methods, building on existing mental strategies. Discuss and compare methods and explain orally how they work.

*TU + TU, developing to HTU + TU or HTU + HTU*

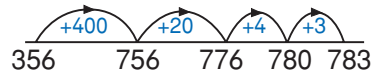
Do this first not crossing the tens or hundreds boundary, then crossing either the tens or the hundreds boundary. For example:

A: counting on in multiples of 100, 10 or 1

$$86 + 57 = 86 + 50 + 7 = 136 + 7 = 143$$



$$\begin{aligned} 356 + 427 &= 356 + (400 + 20 + 7) \\ &= 756 + 20 + 7 \\ &= 776 + 7 \\ &= 783 \end{aligned}$$



Begin to record calculations in preparation for an efficient standard method. Know that units line up under units, tens under tens, and so on.

B: adding the most (or least) significant digits first

$$67 + 24 = (60 + 20) + (7 + 4) = 80 + 11 = 91$$

or:

$$67 + 24 = (7 + 4) + (60 + 20) = 11 + 80 = 91$$

$$\begin{array}{r} 67 \\ + 24 \\ \hline 80 \\ \underline{11} \\ 91 \end{array} \qquad \begin{array}{r} 83 \\ + 42 \\ \hline 120 \\ \underline{5} \\ 125 \end{array} \qquad \begin{array}{l} ] \text{ add mentally from top} \\ ] \text{ or bottom} \end{array}$$

$$\begin{array}{r} 75 \\ + 48 \\ \hline 13 \\ \underline{110} \\ 123 \end{array} \qquad \begin{array}{r} 267 \\ + 85 \\ \hline 12 \\ \underline{140} \\ 200 \\ 352 \end{array} \qquad \begin{array}{l} ] \text{ add mentally from top} \\ ] \text{ or bottom} \\ ] \end{array}$$