

## CALCULATIONS

### Pupils should be taught to:

Develop and refine written methods for subtraction, building on mental methods

### As outcomes, Year 4 pupils should, for example:

#### Informal written methods

Use pencil and paper methods to support, record or explain calculations, achieving consistent accuracy. Discuss, explain and compare methods.

Where calculations are set out in columns, know that units should line up under units, tens under tens, and so on...

#### *HTU – TU, then HTU – HTU*

Do this crossing the tens or the hundreds boundary, or both.

#### A: counting up (complementary addition)

$$\begin{array}{r}
 754 \\
 - \quad 86 \\
 \hline
 4 \quad \text{to make } 90 \\
 10 \quad \text{to make } 100 \\
 600 \quad \text{to make } 700 \\
 50 \quad \text{to make } 750 \\
 \hline
 4 \quad \text{to make } 754 \\
 \hline
 668
 \end{array}$$

#### B: compensation (take too much, add back)

$$\begin{array}{r}
 754 \\
 - \quad 86 \\
 \hline
 654 \quad (754 - 100) \\
 +14 \quad (\text{since } 100 - 86 = 14) \\
 \hline
 668
 \end{array}$$

#### Standard written methods

Develop an efficient standard method that can be applied generally. For example:

#### C: decomposition

leading to

$$\begin{array}{r}
 754 \\
 - \quad 86 \\
 \hline
 \end{array}
 = \begin{array}{r}
 700 + 50 + 4 \\
 - \quad 80 + 6 \\
 \hline
 \end{array}$$

$$= \begin{array}{r}
 700 + 40 + 14 \quad \text{adjust from T to U} \\
 - \quad 80 + 6 \\
 \hline
 \end{array}
 \begin{array}{r}
 744 \\
 - \quad 86 \\
 \hline
 \end{array}$$

$$= \begin{array}{r}
 600 + 140 + 14 \quad \text{adjust from H to T} \\
 - \quad 80 + 6 \\
 \hline
 \end{array}
 \begin{array}{r}
 644 \\
 - \quad 86 \\
 \hline
 \end{array}$$

$$600 + 60 + 8 = 668$$

Subtract numbers with different numbers of digits. For example, find the difference between:

671 and 58, 46 and 518.

#### Extend to decimals

Using methods similar to those above, begin to find the difference between two three-digit sums of money, with or without 'adjustment' from the pence to the pounds. Know that decimal points should line up under each other. For example:

$$\begin{array}{r}
 \pounds 8.95 - \pounds 4.38 \\
 \pounds 7.50 - \pounds 2.84
 \end{array}$$