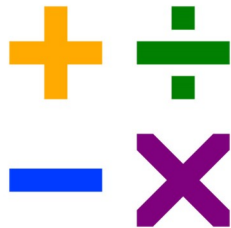


# Subtraction

If you have questions about any of the information in this booklet please contact Le Murier on 246660



Over the years, the ways of teaching maths have changed, as has the name. We now call it Numeracy, which is about using our maths skills in everyday situations.

This booklet shows the different methods that are used in the teaching of subtraction — one of the four rules of number within computation.

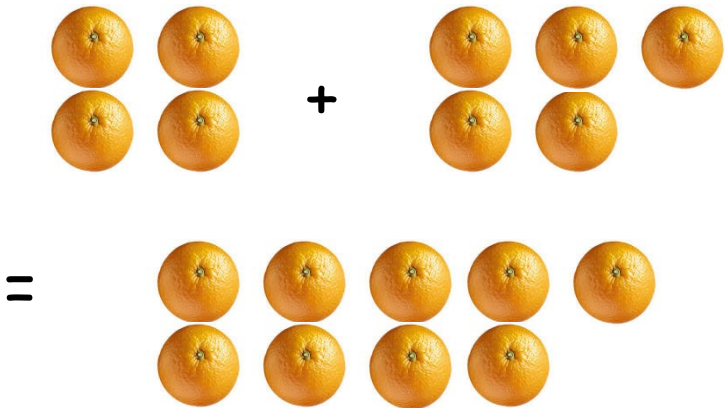
Produced by Mrs M Gillespie  
Co-ordinator of Numeracy  
Le Murier



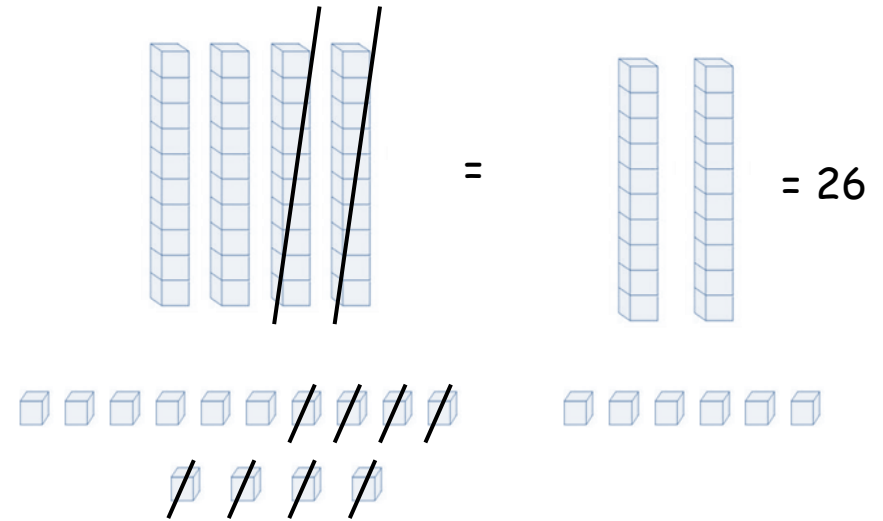
# Subtraction (taking away)

**Complementary addition** (How many more to make?)  
 {9 - 4 = 5}

When we teach subtraction we use complementary addition, as this allows us to teach it through 'counting on'. Students will have learnt 'counting on' within addition. What this means is that we ask questions such as: "I have 4 oranges, how many more do I need to make 9 oranges?" ( $4 + 5 = 9$ )



From this we can then start to use the words "take away".  
 If we have 9 oranges and we take 4 away how many do we have left?  
 If we have 9 oranges and we take 5 away how many do we have left? Examples shown on next page.



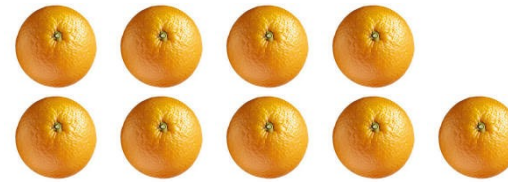
So  
 $54 - 28 = 26$

This method can then be used with even bigger numbers and with decimals. Remembering to borrow one from the next column to the left and change into 10; adding it to the column you are working on.

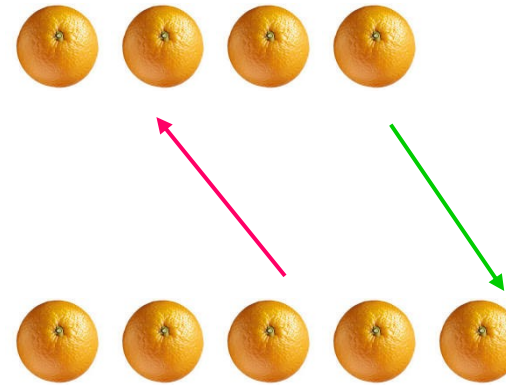
$$54 - 28$$

$$\begin{array}{r} 4 \ 1 \\ 54 \\ - 28 \\ \hline 26 \end{array} =$$

$$\begin{array}{r} \text{TU} \\ 40 \\ 50 \ 14 \\ - 20 \ 8 \\ \hline 20 \ 6 \end{array}$$

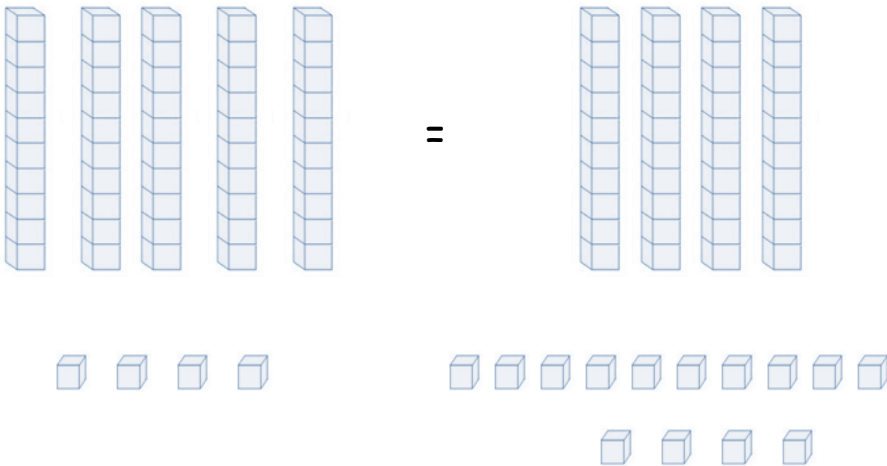


$$\begin{aligned} 9 - 4 &= 5 \\ 9 - 5 &= 4 \end{aligned}$$



$$\begin{aligned} 5 + ? &= 9 \\ \text{So } 9 - 5 &= 4 \end{aligned}$$

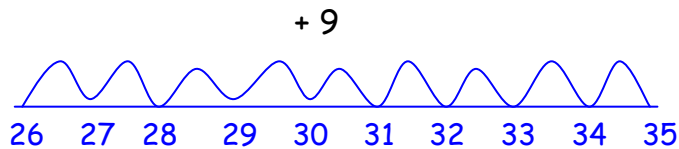
5 tens and 4 units is the same as 4 tens and 14 units



The students need to be confident with subtraction, using equipment as shown above, and confident in the relationship between addition and subtraction before moving on to 'Complementary Addition' {counting on}.

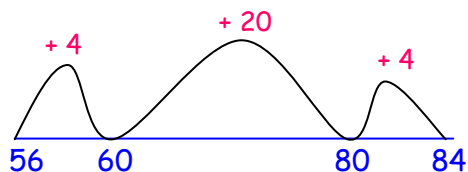
## Complementary addition

As the students now know that  $9 - 5 = 4$  is the same as  $5 + ? = 9$ , this can be continued to be used with bigger numbers in the method of complementary addition. For example  $35 - 26 = ?$  is the same as  $26 + ? = 35$ . The students put the **smallest number** (in the subtraction sum) on the number line and count on to the biggest number. This gives the number of steps done and therefore the answer, so  $35 - 26 = 9$



When the students are confident in counting on in 'ones/ units' they then move on to counting on in tens and units and then groups of tens and units, as shown in the example below

$$84 - 56 = ? \quad \text{is the same as} \quad 56 + ? = 84$$
$$56 + 4 = 60 + 20 = 80 + 4 = 84$$



This method is also used with money, e.g. giving change.

Carry on with horizontal complementary addition ThHTU—ThHTU, ThHTU—HTU etc.

Introduce vertical subtraction (traditional) without decomposition (carrying) and using equipment.

e.g.  $54 - 28$

$$\begin{array}{r} 4 \quad 1 \\ 54 \\ - \cancel{2}8 \\ \hline 26 \end{array}$$

=

$$\begin{array}{r} \text{TU} \\ 40 \\ 50 \quad 14 \\ - \cancel{2}0 \quad 8 \\ \hline 20 \quad 6 \end{array}$$

We start with the units first but we can't take 8 units away from 4 units. We then have to take one of the ten sticks and change it into ten units. We then add the units together = 14 units. We can now take away the 8 units from the 14 units.

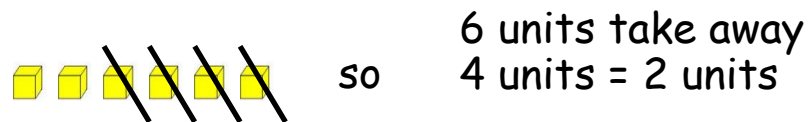
Students will also continue to use complementary addition HTU—HTU or TU

Introduce vertical subtraction (traditional) without decomposition (carrying) and using equipment

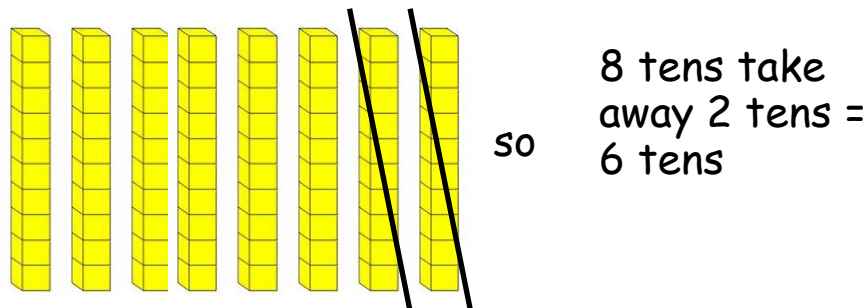
e.g.  $86 - 24$

$$\begin{array}{r} 86 \\ - 24 \\ \hline 62 \end{array} = \begin{array}{r} \text{TU} \\ 80 \quad 6 \\ - 20 \quad 4 \\ \hline 60 \quad 2 \end{array}$$

We start with the units



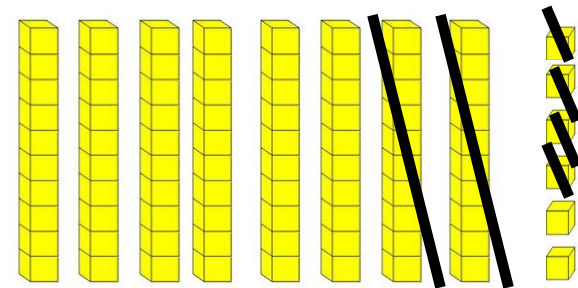
Then we take away the tens



Introduce vertical subtraction (traditional) without decomposition (carrying) and using equipment

When the student is confident in complementary addition with larger numbers (HTU—HTU or TU e.g.  $365 - 217$ ) then Traditional Subtraction is introduced.

$$\begin{array}{r} \text{TU} \\ 86 \\ - 24 \\ \hline 62 \end{array}$$



This is done in the first instance using equipment as shown above. When the student understands the concept of subtracting and how it is written down in the traditional method, then it is practised without equipment. Equipment is re-introduced when subtraction with decomposition (carrying) starts.