



Subtraction Vocabulary: Take away, subtract, difference between, fewer than, minus, decrease.

To subtract successfully, children need to be able to:

- recall all addition and subtraction facts to 20
- subtract multiples of 10 (such as $160 - 70$) using the related subtraction fact, $16 - 7$, and their knowledge of place value
- partition two-digit and three-digit numbers into multiples of one hundred, ten and one in different ways (e.g. partition 74 into $70+4$ or $60+14$).

Written Methods for Subtraction of Whole Numbers

Stage One: The Empty Number Line

Method

The empty number line helps to record or explain the steps in mental subtraction. A calculation like $74 - 27$ can be recorded by counting back 27 from 74 to reach 47. The empty number line is also a useful way of modelling processes such as bridging through a multiple of ten.

The steps can also be recorded by counting up from the smaller to the larger number to find the difference, for example by counting up from 27 to 74 in steps totalling 47.

With practice, children will need to record less information and decide whether to count back or forward. It is useful to ask children whether counting up or back is the more efficient for calculations such as $57 - 12$, $86 - 77$ or $43 - 28$.

Example

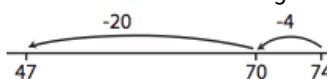
Steps in subtraction can be recorded on a number line. The steps often bridge through a multiple of 10.

Example :

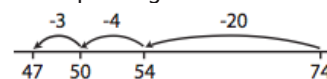
$$15 - 7 = 8$$



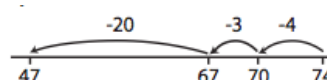
$74 - 27 = 47$ worked by counting back



The steps may be recorded in a different order :



or combined :



Stage Two: Partitioning

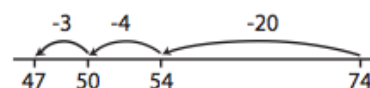
Subtraction can be recorded using partitioning to write equivalent calculations that can be carried out mentally. For $74 - 27$ this involves partitioning the 27 into 20 and 7, and then subtracting from 74 the 20 and the 4 in turn. Some children may need to partition the 74 into $70 + 4$ or $60 + 14$ to help them carry out the subtraction.

This requires children to subtract a single-digit number or a 47 multiple of 10 from a two-digit number mentally. The method of recording links to counting back on the number line.

Subtraction can be recorded by partitioning:

$$74 - 27 = 74 - 20 - 7 = 54 - 7 = 47$$

$$74 - 27 = 70 + 4 - 20 - 7 = 60 + 14 - 20 - 7 = 40 + 7$$



Stage Three: The Column Method

Method

In this method, recording is reduced further. Children are encouraged to align all digits in their correct place value column, with the largest number on top.

Beginning with the least significant digit (from the right), subtract each the units, tens and hundreds (extending to thousands) in turn, writing the response on the answer line below.

In the event a larger number cannot be subtracted from a smaller number, it is necessary to 'borrow' from the column to the left. The number borrowed from then decreases by 'one'.

$$4428 - 2165 = 2263$$

$$\begin{array}{r} 312 \\ 4\cancel{4}28 \\ - 2165 \\ \hline 2263 \end{array}$$

Example

Revision Sites

The following websites can be used to revise the four operations.

<http://uk.ixl.com/>

<http://www.woodlands-junior.kent.sch.uk/maths/>

<http://www.bbc.co.uk/schools/ks2bitesize/maths/>

<http://www.crickweb.co.uk/ks2numeracy.html>

<http://www.compare4kids.co.uk/maths.php>