



Division Vocabulary: divide, divided by, share (equally), divisible by, group, remainder, quotient.

To divide successfully, children need to be able to:

- understand and use the vocabulary of division - for example in $18 \div 3 = 6$, the 18 is the dividend, the 3 is the divisor and the 6 is the quotient
- partition two-digit and three-digit numbers into multiples of 100, 10 and 1 in different ways
- recall multiplication and division facts to 10 \times 10, recognise multiples of one-digit numbers and divide multiples of 10 or 100 by a single-digit number using their knowledge of division facts and place value
- know how to find a remainder working mentally - for example, find the remainder when 48 is divided by 5
- understand and use multiplication and division as inverse operations.
- understand division as repeated subtraction
- estimate how many times one number divides into another - for example, how many sixes there are in 47, or how many 23s there are in 92
- multiply a two-digit number by a single-digit number mentally
- subtract numbers using the column method.

Written Methods for Division of Whole Numbers

Stage One: Short Division of TU by U and HTU by U

Method

Short division of two-digit number can be introduced to children who are confident with multiplication and division facts and with subtracting multiples of 10 mentally, and whose understanding of partitioning and place value is sound. For most children this will be at the end of Year 4 or the beginning of Year 5.

This method, known as the bus stop method, allows children to divide each digit of the dividend separately. Beginning from the left, the first number to be divided by 4 is the 9. The answer, or quotient, is written as an integer above the line. The remainder is written small to the left of the next digit.

A remainder at the end can be simply written as 'r2'. Alternatively, children in Upper Key Stage two will continue the procedure to produce a decimal answer, placing as many 0s as necessary to the right of a decimal point.

Example

$$950 \div 4 =$$

$$\begin{array}{r} 4 \overline{)950} \end{array} \rightarrow \begin{array}{r} 2 \\ 4 \overline{)9150} \end{array} \rightarrow \begin{array}{r} 23 \\ 4 \overline{)91530} \end{array}$$

$$\begin{array}{r} 237 \\ 4 \overline{)915302} \end{array} \rightarrow \begin{array}{r} 237.5 \\ 4 \overline{)91530.20} \end{array}$$

Stage Two: The Expanded Method of Division, or 'Chunking'

Method

The 'chunking' method of division enables children to divide larger numbers by repeated subtraction.

To calculate the result of dividing a large number by a two digit number, children take away 'chunks' from the larger number, where each 'chunk' is an easy multiples of the divisor (e.g. 100x, 10x, 5x, 2x) until the dividend has been reduced to zero, or the remainder is less than the divisor. At the same time, children keep a running total of what multiple of the small number has so far been taken away, as the sum of these will produce the final answer.

For most children, 'chunking' is taught in Year Six.

Example

$$525 \div 35 =$$

$$\begin{array}{r} 15 \\ 35 \overline{) 525} \\ \underline{- 350} \quad (35 \times 10) \\ 175 \\ \underline{- 175} \quad (35 \times 5) \\ 000 \end{array}$$

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>