

# Teaching Multiplication from Foundation to Year 6



Children are taught to understand multiplication as repeated addition.

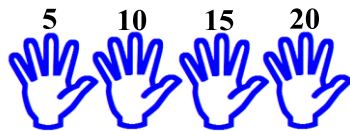
## Counting on in 2s, 5s and 10s



2            4            6            8            10

How many pairs of socks are there?

## Counting in 5s



At this early stage children are counting objects or pictures. They are also being introduced to the language of multiplication, eg. 'lots of'.

Here fingers are used to count in 5's. This is repeated addition (5 and 5 and another 5 etc)

## Adding groups of using equipment

3 lots of 5 =

1 2 3 4 5



11 12 13 14 15



6 7 8 9 10

The multiplication sign (X) will be introduced as a short way of saying 'lots of'.

Children physically make sets or groups and then add them by counting up from 1 until all the objects have been used.

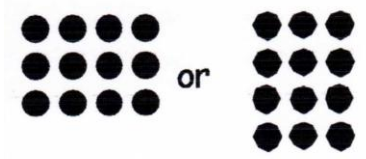
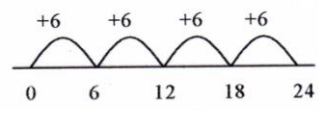
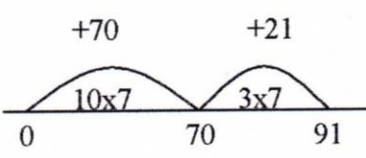
## Adding groups of

5 x 3 =

There are 5 cakes in a pack.  
How many cakes in 3 packs?



Dots or tally marks are often drawn in groups. This shows how many 'lots of' there are. These groups are then added together

<p><b>Representing multiplication by using/drawing sets</b></p> <p><math>4 \times 3 = \square</math>  A chew costs 4p. How much do 3 chews cost?</p> 	<p>Drawing sets give children an image of the answer. It also helps them to see that the numbers in multiplication are reversible (eg. <math>3 \times 4 = 12</math> and <math>4 \times 3 = 12</math>)</p>
<p><b>Using number lines</b></p> <p><math>6 \times 4 = \square</math>  There are 4 cats. Each cat has 6 kittens. How many kittens are there altogether?</p> 	<p>Children could count on in equal steps, recording each jump on an empty number line. This shows 4 jumps of 6.</p>
<p><b>Using a number line for larger numbers</b></p> <p><math>13 \times 7 = \square</math>  There are 13 biscuits in a packet. How many biscuits in 7 packets?</p> <p><math>10 \times 7</math>  <math>3 \times 7</math></p>  <p>At this point pupils should be becoming more confident at recalling multiplication facts (times tables) as this allows pupils to work out what jumps are appropriate.</p>	<p>When numbers get bigger it is inefficient to do lots of small jumps. Split 13 into parts (10 and 3). This gives you two jumps (<math>10 \times 7</math> and <math>3 \times 7</math>)</p>
<p><b>Introducing the grid method</b></p> <p><math>6 \times 124 = \square</math>  124 books were sold. Each book cost £6. How much money was taken?</p> $\begin{array}{r rrr} & 100 & 20 & 4 \\ \hline 6 & 600 & 120 & 24 \\ \hline & & & = 744 \end{array}$ <p>This method is showing that 6 lots of 124 is the same as (6 lots of 100) + (6 lots of 20) + (6 lots of 4)</p> <p><i>A useful trick to find <math>6 \times 100</math> is to think of it as <math>6 \times 1</math> (by taking off the two 0s from</i></p>	<p>124 is split into (or partitioned) into parts (100, 20, 4) and each of these is multiplied by 6. The three answers are then added together.</p> <p>This method does require good understanding of times tables. Children may find using a <math>10 \times 10</math> multiplication grid</p>

100), then just add the two 0s to your answer. (this is multiplying by 100)  
Likewise for  $6 \times 20$ , find  $6 \times 2$ , then add the 0 (this is multiplying by 10)

(available from school) a useful tool.

Using the grid method for larger numbers  
(eg. 2 digit  $\times$  2 digit)

$$72 \times 34 = \square$$

A cat is 72cm long. A tiger is 34 times longer. How long is the tiger?

30	70	2	= 2160
4	280	8	= 288
			2448

This method is an extension of the previous method. Again split up (partition) both numbers and multiply each part. Add across the rows, then add those two answers together