
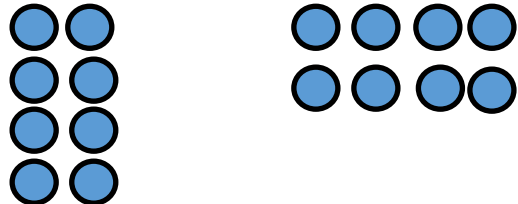
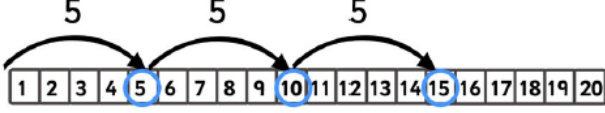


Multiplication

<u>Stages</u>	<u>Examples</u>
<p><u>Stage 1</u></p> <p>Counting practically in repeated groups/ patterns.</p> <p>Finding pairs—sets of real life objects in 2s— socks, gloves, shoes etc.</p>	
<p><u>Stage 2</u></p> <p>Grouping</p>	<p>$4 \times 2 = 8$</p> 
<p><u>Stage 3</u></p> <p>Arrays</p>	<p>$4 \times 2 = 8$ or $2 \times 4 = 8$</p> 
<p><u>Stage 4</u></p> <p>Repeated addition</p> <p>Repeated addition can be shown easily on a number line.</p> <p>For multiplication we count forward (division we jump back)</p>	<p>5×3 is $5 + 5 + 5 = 15$ or 3 lots of 5</p> 

Multiplication

Stage 5

Partitioning using practical resources such as Cuisenaire rods.

$$2 \times 12 =$$



$$\begin{aligned} 2 \times 12 \\ = 2 \times 10 + 2 \times 2 \\ = 20 + 4 = 24 \end{aligned}$$

Stage 6

Introduce Grid Method using Cuisenaire rods.



$$\begin{aligned} 2 \times 10 + 2 \times 2 = \\ 20 + 4 = 24 \end{aligned}$$

Stage 7

The grid method. Place the number with the most digits in the left hand column so that it is easier to add the answers of each part of the multiplication together.

$$37 \times 8 =$$

x	8	
30	240	
7	56	
	296	

Stage 8

Short multiplication (expanded)

Show the method of recording in a column format, but showing the working. This links to the grid method above.

Children should describe what they do by saying the actual values of the digits in the column.

Eg. The first step in 37×8 is 'thirty multiplied by eight', not 'three times eight.'

The next step involves adding 240 and 56 mentally with only the 5 and the 6 recorded.

$$\begin{array}{r} 37 \\ \times 8 \\ \hline 240 \quad (30 \times 8) \\ 56 \quad (7 \times 8) \\ \hline 296 \end{array}$$

$$\begin{array}{r} 37 \\ \times 8 \\ \hline 296 \\ \hline 5 \end{array}$$

Multiplication

Stage 9

Multiplying two, two digit numbers. This follows the same steps as the first grid method but for 2 digit numbers.

$$47 \times 23$$

x	20	3	
40	800	120	920
7	140	21	161
			1081

Stage 10

The amount of recording is reduced but children still need to follow each step of the grid method.

47 x 23 is approximately
50 x 20 is 1000

47	
x 23	40 x 20 = 800
800	40 x 3 = 120
120	20 x 7 = 140
140	3 x 7 = 21
21	
1081	

Stage 11

The amount of recording is reduced more.

47 x 23 is approximately
50 x 20 is 1000

47	
x 23	47 x 20
940	47 x 3
141	
1081	