

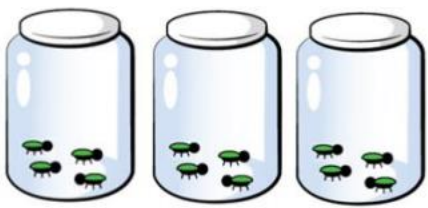
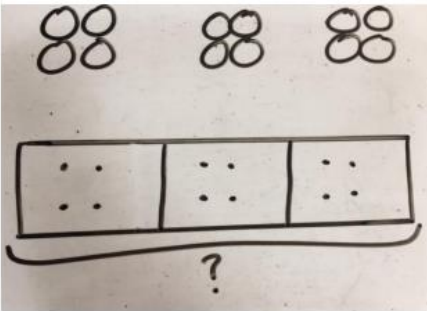


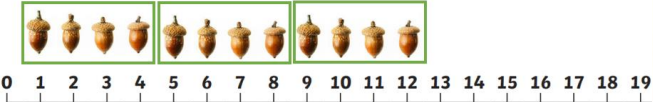
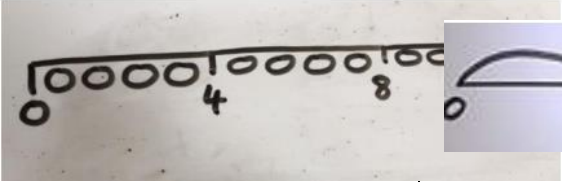
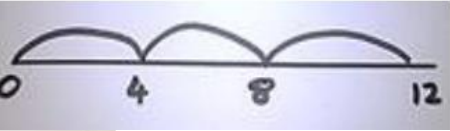
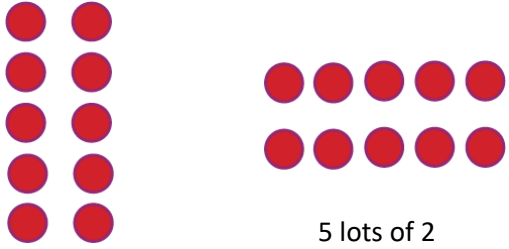
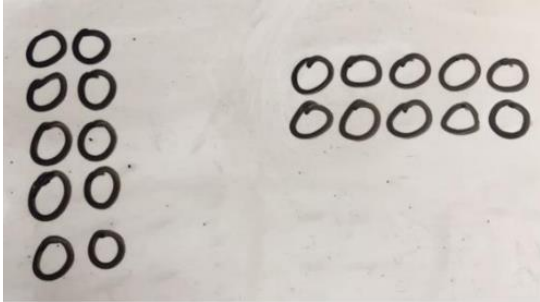
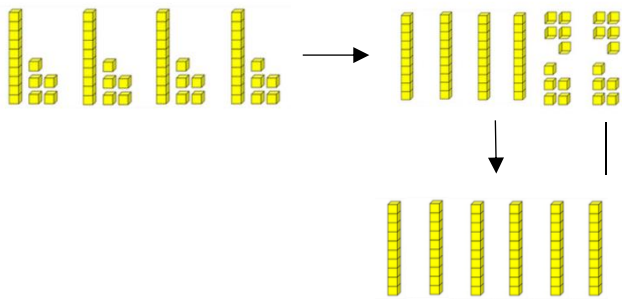
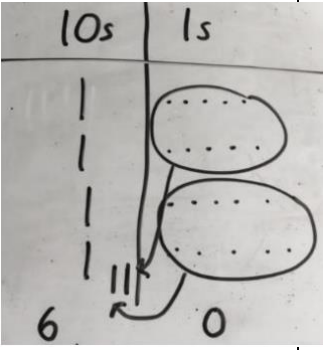


Calculation Policy: Multiplication

Key language: groups of, lots of, equal groups, double, times, multiplied by, the product of

	Concrete	Pictorial	Abstract
EYFS	<p>Making equal groups.</p> 	<p>Children represent their equal groups with marks/pictures.</p> 	$4 + 4 + 4 = 12$
Year 1	<p>Repeated grouping/repeated addition 3×4 $4 + 4 + 4$ There are 3 equal groups, with 4 in each group.</p> 	<p>Children to represent the practical resources in a picture and use a bar model.</p> 	$3 \times 4 = 12$ $4 + 4 + 4 = 12$




<p>Year 1</p>	<p>Number line to show repeated groups. 3×4</p> 	<p>Represent this pictorially alongside a number line.</p> 	<p>Abstract number line showing three jumps of four. $3 \times 4 = 12$</p> 
<p>Year 2 In line with Times Table policy</p>	<p>Use arrays to show commutativity. $2 \times 5 = 5 \times 2$</p>  <p>2 lots of 5</p> <p>5 lots of 2</p>	<p>Children to represent the arrays pictorially.</p> 	<p>Children to be able to use an array to write a range of calculations.</p> $10 = 2 \times 5$ $5 \times 2 = 10$ $2 + 2 + 2 + 2 + 2 = 10$ $10 = 5 + 5$
<p>Year 2 In line with Times Table policy</p>	<p>Partition to multiply using numicon or base 10. 4×15</p> 	<p>Children to represent the concrete manipulatives pictorially.</p> 	<p>Children to be encouraged to show the steps they have taken.</p> 4×15 $\begin{array}{r} 10 \quad 5 \\ \downarrow \quad \downarrow \\ 10 \quad 5 \end{array}$ $10 \times 4 = 40$ $5 \times 4 = 20$ $40 + 20 = 60$



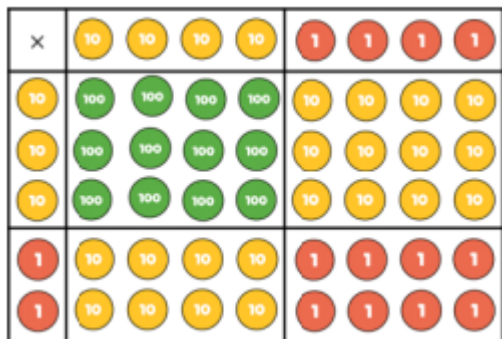
<p>Year 3 In line with Times Table policy</p>	<p>Formal column method, using base 1.</p> <p>3×23</p> <table border="1"> <thead> <tr> <th>10s</th> <th>1s</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	10s	1s							<p>Children to represent the base 10 pictorially.</p> <table border="1"> <thead> <tr> <th>10_s</th> <th>1_s</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	10 _s	1 _s							<p>Children to record what it is they are doing to show understanding.</p> <div style="display: flex; justify-content: space-around;"> <div> <p>3×23</p> <p></p> <p>$20 \quad 3$</p> <p>23</p> <p>$\times 3$</p> <p><u>69</u></p> </div> <div> <p>$3 \times 20 = 60$</p> <p>$3 \times 3 = 9$</p> <p>$60 + 9 = 69$</p> </div> </div>																									
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Year 4 In line with Times Table policy		Grid method (see below)	$\begin{array}{r} 34 \\ \times 5 \\ \hline 170 \\ \hline 12 \end{array}$ <table border="1"><thead><tr><th></th><th>H</th><th>T</th><th>O</th></tr></thead><tbody><tr><td></td><td>2</td><td>4</td><td>5</td></tr><tr><td>\times</td><td></td><td></td><td>4</td></tr><tr><td></td><td>9</td><td>8</td><td>0</td></tr><tr><td></td><td>1</td><td>2</td><td></td></tr></tbody></table>		H	T	O		2	4	5	\times			4		9	8	0		1	2	
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	2	4	5																				
\times			4																				
	9	8	0																				
	1	2																					



Year 5 and 6
In line with
Times Table policy



×	20	2
30	600	60
1	20	2

$$\begin{array}{r}
 44 \\
 \times 32 \\
 \hline
 88 \\
 880 \\
 + 1200 \\
 \hline
 1408 \\
 \hline
 1
 \end{array}$$

TTh	Th	H	T	O
	2	7	3	9
×			2	8
2	1	9	1	2
₂	₅	₃	₇	
5	4	7	8	0
₁		₁		
7	6	6	9	2

2,739 × 28 = 76,692

To teach maths in year 4 children will need place value counters. – you can introduce them in year 3 but year 4 will be a good time to do this

Year 5 – long multiplication