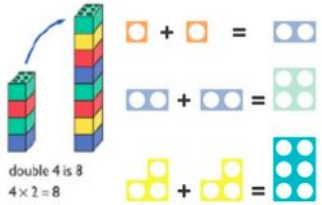
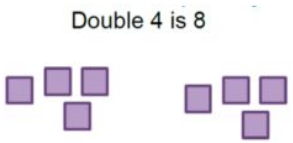
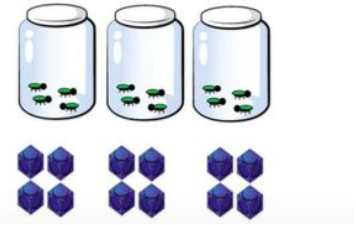
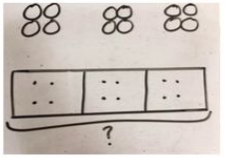
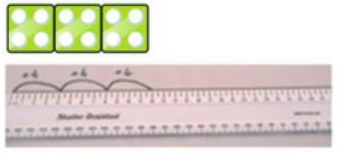
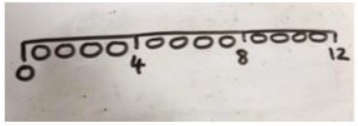
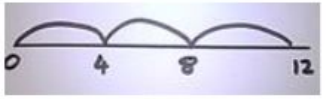
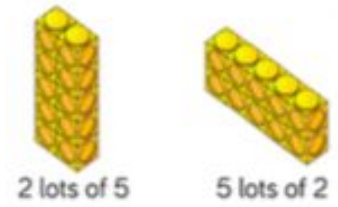
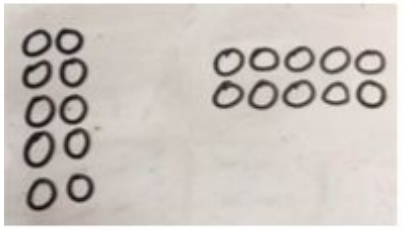
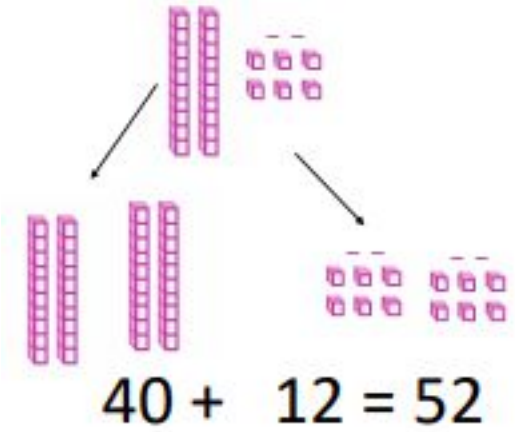
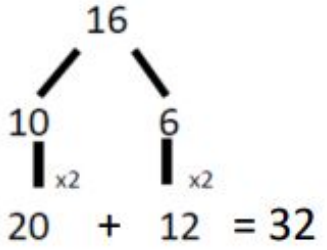
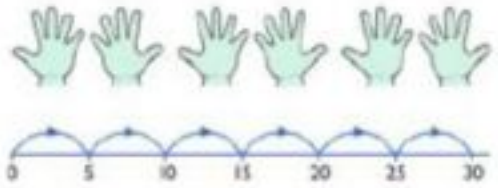
Year 1 Multiplication			
National Curriculum objective	Concrete	Pictorial	Abstract
solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	Use practical activities using manip-ultives including cubes and Numicon to demonstrate doubling  	Draw pictures to show how to double numbers  	
	Repeated grouping/repeated addition 3 × 4 4 + 4 + 4 There are 3 equal groups, with 4 in each group. 	Children to represent the practical resources in a picture and use a bar model.  	3 × 4 = 12 4 + 4 + 4 = 12
	Number lines to show repeated groups- 3 × 4  Cuisenaire rods can be used too.	Represent this pictorially alongside a number line e.g.:  	Abstract number line showing three jumps of four. 3 × 4 = 12 

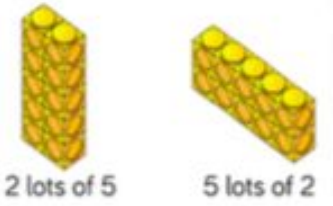
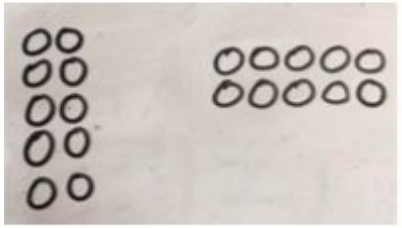
	Use arrays to illustrate commutativity counters and other objects can also be used. $2 \times 5 = 5 \times 2$  2 lots of 5 5 lots of 2	Children to represent the arrays pictorially. 	Children to be able to use an array to write a range of calculations e.g. $10 = 2 \times 5$ $5 \times 2 = 10$ $2 + 2 + 2 + 2 + 2 = 10$ $10 = 5 + 5$

Year 2 Multiplication (+ refer to previous year group expectations)			
National Curriculum objective	Concrete	Pictorial	Abstract
calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	Model doubling using dienes and PV counters.  40 + 12 = 52		Partition a number and then double each part before recombining it back together.  16 10 6 x2 x2 20 + 12 = 32

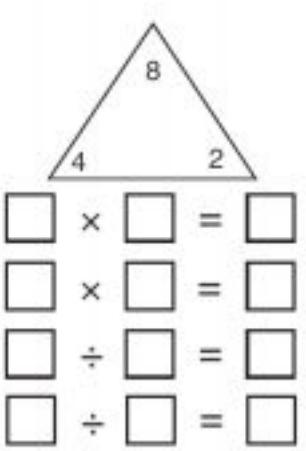
<table>
<tr>
<td rowspan="2">show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot

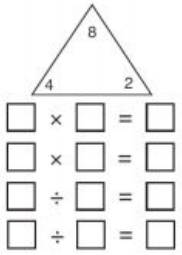
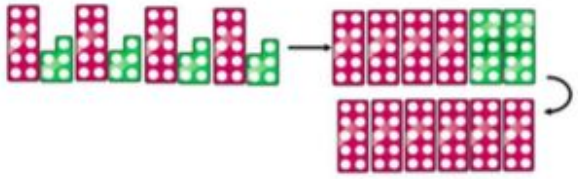
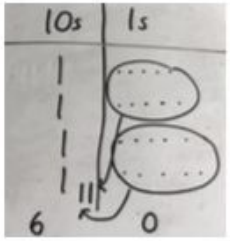
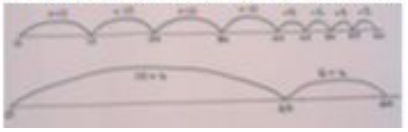
solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including</td>
<td></td>
<td>Number lines, counting sticks and bar models should be used to show representation of counting in multiples.
  </td>
<td>Count in multiples of a number aloud.

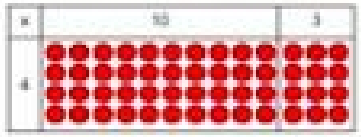
Write sequences with multiples of numbers.
0, 2, 4, 6, 8, 10
0, 3, 6, 9, 12, 15
0, 5, 10, 15, 20, 25 , 30

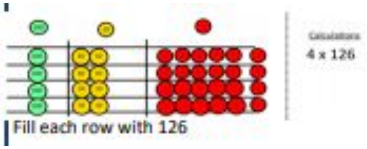
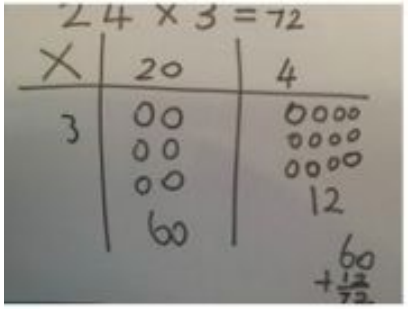
4 × 3 = □</td>
</tr>
<tr>
<td>Use arrays to illustrate commutativity counters and othe objects can also be used.
2 × 5 = 5 × 2
 
2 lots of 5 5 lots of 2</td>
<td>Children to represent the arrays pictorially.
  </td>
<td>Children to be able to use an array to write a range of calculations e.g.

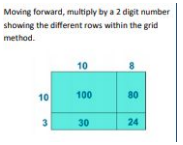
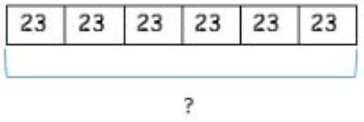
10 = 2 × 5
5 × 2 = 10
2 + 2 + 2 + 2 + 2 = 10
10 = 5 + 5</td>
</tr>
</table>

problems in contexts			2 x 4 = 8 4 x 2 = 8 8 ÷ 2 = 4 8 ÷ 4 = 2 8 = 2 x 4 8 = 4 x 2 2 = 8 ÷ 4 4 = 8÷ 2 Show all 8 related fact family sentences.

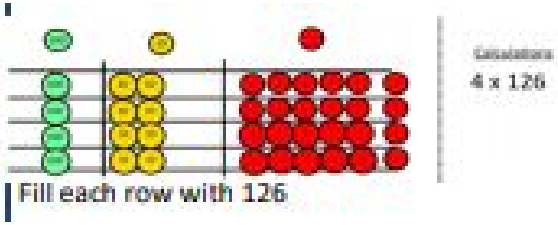
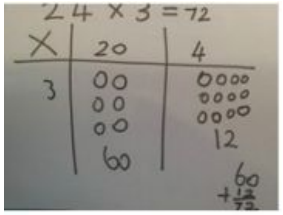
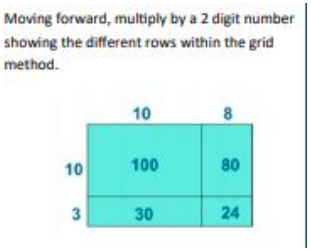
Year 3 Multiplication (+ refer to previous year group expectations)			
National Curriculum objective	Concrete	Pictorial	Abstract
recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables ♣ write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods			2 x 4 = 8 4 x 2 = 8 8 ÷ 2 = 4 8 ÷ 4 = 2 8 = 2 x 4 8 = 4 x 2 2 = 8 ÷ 4 4 = 8 ÷ 2 Show all 8 related fact family sentences.
	Partition to multiply using Numicon, base 10 or Cuisenaire rods. 4 x 15 	Children to represent the concrete manipulatives pictorially. 	Children to be encouraged to show the steps they have taken. 4 x 15 10 5 10 x 4 = 40 5 x 4 = 20 40 + 20 = 60 A number line can also be used 

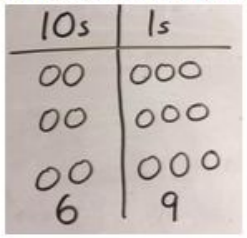
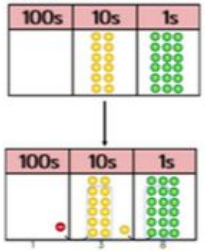
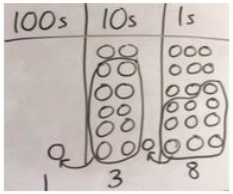
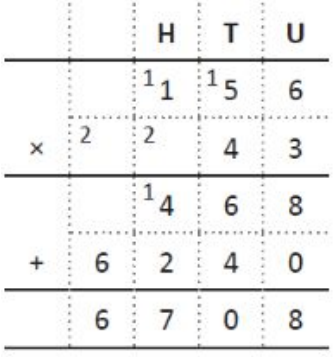
<table>
<tr>
<td></td>
<td> 


</td>
<td> 
</td>
<td> 

210 + 35 = 245

</td>
</tr>
<tr>
<td></td>
<td> 
</td>
<td></td>
<td>Mai had to swim 23 lengths, 6 times a week.
How many lengths did she swim in one week?

With the counters, prove that 6 x 23 = 138</td>
</tr>
</table>

Year 4- 6 Multiplication (+ refer to previous year group expectations)			
National Curriculum objective	Concrete	Pictorial	Abstract
♣ multiply two-digit and three-digit numbers by a one-digit number using formal written layout ♣ solve problems involving multiplying and adding, including			

<table>
<tr>
<td rowspan="3">using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects</td>
<td>Formal column method with place value counters (base 10 can also be used.) 3 × 23
 
</td>
<td>Children to represent the counters pictorially.
 
</td>
<td>Children to record what it is they are doing to show understanding.
3 × 23 = 3 × 20 = 60
3 × 3 = 9
20 3 60 + 9 = 69
23
× 3
69</td>
</tr>
<tr>
<td>Formal column method with place value counters.
6 x 23
 
</td>
<td>Children to represent the counters/base 10, pictorially e.g. the image below.
 
</td>
<td> 
</td>
</tr>
<tr>
<td></td>
<td>When children start to multiply 3d × 3d and 4d × 2d etc., they should be confident with the abstract:To get 744 children have solved 6 × 124. To get 2480 they have solved 20 × 124</td>
<td> 

When we multiply by two digits, we multiply by the units first. Then we multiply by the tens, placing a zero in the units column to show there are no units.
We add the 2 lines together.
It's important not to confuse the carried units and the carried tens – keep them separate.</td>
</tr>
</table>