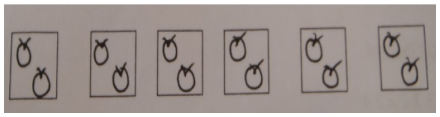
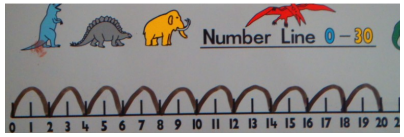
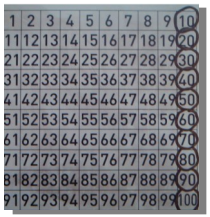
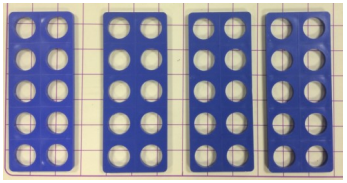
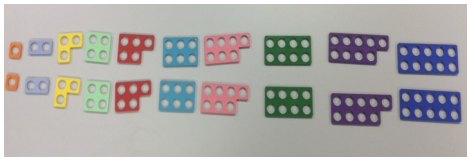
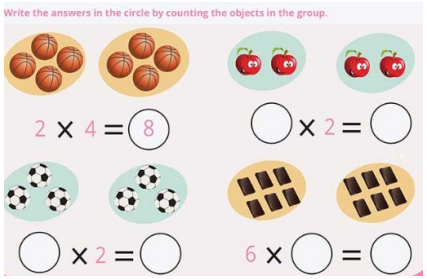
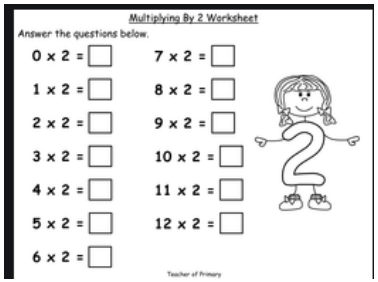
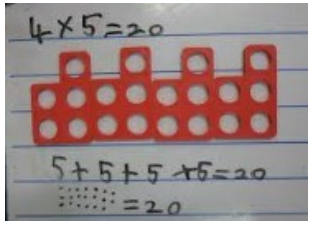
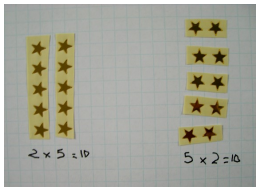
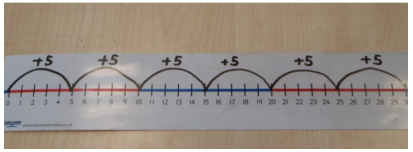
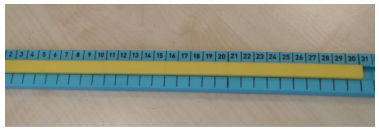
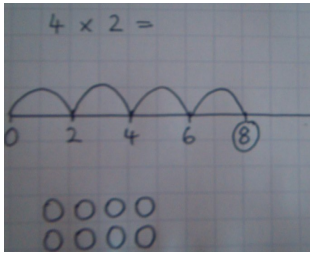
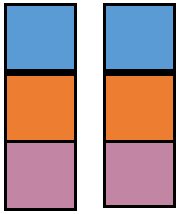
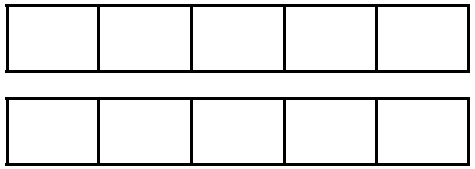
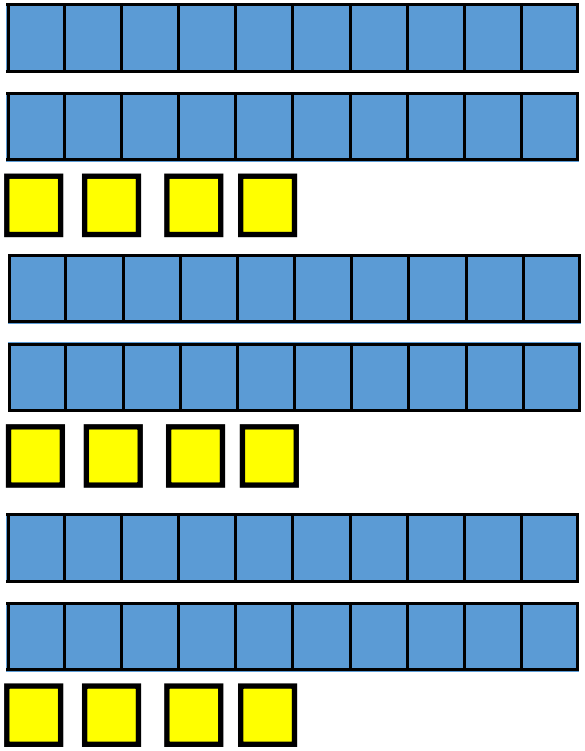
Multiplication			
Skill	Concrete	Pictorial	Abstract
Pupil can put up to 20 items into groups of 2 or 5 or into equal groups *e.g. give the pupil 5 hoops and 15 objects and ask them to share them equally between the hoops.*		 There are 2 apples in one box. How many apples are in 6 boxes?	
Count groups of the same objects (groups of 2)	How many beads altogether?		
Count in steps of 2 to at least 50, from and back to zero using a marked number line as a visual prompt.	 Use concrete objects to support counting in 2s	Counting in 2s using only number line 	Jack, Tom and John have 2 apples each, how many apples?
Count to 100 in tens using a number line/100 square/Numicon e.g.			
Count in steps of 5 least 50, from and back to zero using a marked number line as a visual prompt.			
Know 2,5 and 10 times tables			

Skill	Concrete	Pictorial	Abstract
Begin to use the language ‘times’ and introduce the ‘x’ symbol Solve multiplication problems with practical equipment, pictures or arrays with support. Derive and recall doubles up to 20	 Recognise that 2 + 2 + 2 + 2 can be written as 4 x 2  4 x 10 = 4 lots of 10 4 groups of 10 4 times 10 		

Skill	Concrete	Pictorial	Abstract
Recognise and use **x** symbol. E.g. Solve multiplication problems (involving 2x, 5x and 10x facts) using arrays or Numicon to support understanding.		 To understand that 2 x 5 = 5 x 2 (Commutativity)	 Use a marked number line to solve multiplication problems (involving 2x, 5x and 10x facts) as repeated addition e.g. 6 x 5
Use a range of tools and resources to solve multiplication as repeated addition e.g. 5 x 3	 Use a marked number line or Cuisenaire rods	 Use an empty number line or an array to represent multiplication as repeated addition e.g. 4 x 2, 3 x 4	
Know 3 x tables			

Skill	Concrete	Pictorial	Abstract
Pupil can derive and use doubles and halves of simple two-digit numbers. They understand halving as a way of 'undoing' doubling and vice versa. *(cf. Division policy)*	*Same as counting in twos—using pairs of objects* 	Draw pairs of identical columns / rows of squares E.g. Double 3  Double 5 	*e.g.* *When I doubled a number the answer was 18. Which number did I double?* *There are 28 children in a class. Half of them are girls, how many are boys?* *Write the missing number:* *4 → double and add 5 → 13* *7 → double and add 5 →* c *Double 20, 42, 34, 53*

Skill	Concrete	Pictorial	Abstract
Pupil writes and calculates mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. Pupil derives and uses doubles of all numbers to 100 and corresponding halves.	Using Dienes rods and cubes E.g. 24 x 3 		*4 x 2 = 8 so 40 x 2 = 80* *Also 6 x 2 = 12* *So 46 x 2 = 80 + 12* *Learn 11 and 12 times tables* *11 x 8 = 88* *12 x 6 = 72* *e.g. Show me how you would work out 26 × 4, 17 x 8, 29 x 3, 52 ÷ 4, 95 ÷ 8.* *Which would you do mentally and which would you use jottings to support you?* *What is double 48? Did you record anything to help you find your answer?*

<table>
<tr><th>Skill</th><th>Concrete</th><th>Pictorial</th><th>Abstract</th></tr>
<tr>
<td>Pupil recalls and uses multiplication facts for the 3, 4 and 8 multiplication tables.

Pupil understands that division is the inverse of multiplication and vice versa.
(c.f. Division policy)

Pupil solves problems, including missing number problems, involving multiplication</td>
<td></td>
<td>Use multiplication table

<table>
<tr><th>×</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th></tr>
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<tr><th>2</th><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td><td>12</td><td>14</td><td>16</td><td>18</td><td>20</td></tr>
<tr><th>3</th><td>3</td><td>6</td><td>9</td><td>12</td><td>15</td><td>18</td><td>21</td><td>24</td><td>27</td><td>30</td></tr>
<tr><th>4</th><td>4</td><td>8</td><td>12</td><td>16</td><td>20</td><td>24</td><td>28</td><td>32</td><td>36</td><td>40</td></tr>
<tr><th>5</th><td>5</td><td>10</td><td>15</td><td>20</td><td>25</td><td>30</td><td>35</td><td>40</td><td>45</td><td>50</td></tr>
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<tr><th>7</th><td>7</td><td>14</td><td>21</td><td>28</td><td>35</td><td>42</td><td>49</td><td>56</td><td>63</td><td>70</td></tr>
<tr><th>8</th><td>8</td><td>16</td><td>24</td><td>32</td><td>40</td><td>48</td><td>56</td><td>64</td><td>72</td><td>80</td></tr>
<tr><th>9</th><td>9</td><td>18</td><td>27</td><td>36</td><td>45</td><td>54</td><td>63</td><td>72</td><td>81</td><td>90</td></tr>
<tr><th>10</th><td>10</td><td>20</td><td>30</td><td>40</td><td>50</td><td>60</td><td>70</td><td>80</td><td>90</td><td>100</td></tr>
</table>
</td>
<td>Know and use the fact that 4x table is double 2x table

Know and use the fact that 8x table is double 4x table

e.g. Write the missing number in the empty box to make these calculations correct:
e.g.
[ ] x 3 = 36
8 x [ ] = 24
5 x 8 = [ ] x 10
[ ] = 8 x 7
[ ] x [ ] = 24</td>
</tr>
</table>

<table>
<tr><th>Skill</th><th>Concrete</th><th>Pictorial</th><th>Abstract</th></tr>
<tr>
<td>Pupil recalls multiplication and division facts for multiplication tables up to 12 x 12.

Pupil solves problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit and integer scaling problems.

Pupil can multiply two-digit and three-digit numbers by a one-digit number using a formal written layout.</td>
<td>Use finger methods of multiplication

9x method
https://
www.youtube.com/
watch?v=vab1EbN5eTc

6x to 10x method
https://
www.youtube.com/
watch?v=x2Nr-f02AUY</td>
<td>Use multiplication table

<table>
<tr><th>×</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th></tr>
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</table>
</td>
<td>e.g. Write the missing number in the empty box to make these calculations correct:
8 x [] = 56
6 x 8 = [] x 2
[ ] x ( ) = 84
28 x 7 = [ ]
14 x 6 = [ ]
If you multiply me by 7 and add 4 you will get 46. What number am I?

E.g. 263 x 4
<table>
<tr><td>2</td><td>6</td><td>3</td></tr>
<tr><td>x</td><td></td><td>4</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td></td><td></td><td></td></tr>
</table>
[Common error—incorrect handling of the carried digit]

200 x 4 = 800
60 x 4 = 240
3 x 4 = 12 +
1052</td>
</tr>
</table>

Skill	Concrete	Pictorial	Abstract
Pupil can use partitioning to double any number, including decimals to one decimal place.			*e.g.* *Double 264:* • *Double 200 = 400* • *Double 60 = 120* • *Double 4 = 8* • *528* *Double 6.9* • *Double 6 = 12* • *Double 0.9 = 1.8* • *13.8*