



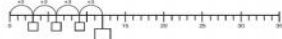










Year 2 Multiplication

<u>Strategy and guidance</u>	<u>CPA</u>																																																																																				
<p><u>Skip counting in multiples of 2, 3, 4, 5, 10 from zero</u></p> <p>Pupils can use their fingers as they are skip counting, to develop an understanding of 'groups of'. Dot arrays can be used to create a visual representation for the different multiplication facts. Bead strings, groups of cubes (or unifix / multilink towers) provide useful concrete representations.</p>	<div style="text-align: center;"> <table border="1" style="margin: 0 auto;"> <tr><th></th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr> <tr><th>0</th><td></td><td></td><td></td><td></td><td></td></tr> <tr><th>1</th><td>●</td><td>●●</td><td>●●●</td><td>●●●●</td><td>●●●●●</td></tr> <tr><th>2</th><td>●●</td><td>●●●●</td><td>●●●●●●</td><td>●●●●●●●</td><td>●●●●●●●●</td></tr> <tr><th>3</th><td>●●●</td><td>●●●●●</td><td>●●●●●●●</td><td>●●●●●●●●</td><td>●●●●●●●●●</td></tr> <tr><th>4</th><td>●●●●</td><td>●●●●●●</td><td>●●●●●●●●</td><td>●●●●●●●●●</td><td>●●●●●●●●●●</td></tr> <tr><th>5</th><td>●●●●●</td><td>●●●●●●●</td><td>●●●●●●●●</td><td>●●●●●●●●●</td><td>●●●●●●●●●●</td></tr> <tr><th>6</th><td>●●●●●●</td><td>●●●●●●●●</td><td>●●●●●●●●●</td><td>●●●●●●●●●●</td><td>●●●●●●●●●●●</td></tr> <tr><th>7</th><td>●●●●●●●</td><td>●●●●●●●●●</td><td>●●●●●●●●●●</td><td>●●●●●●●●●●●</td><td>●●●●●●●●●●●●</td></tr> <tr><th>8</th><td>●●●●●●●●</td><td>●●●●●●●●●●</td><td>●●●●●●●●●●●</td><td>●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●</td></tr> <tr><th>9</th><td>●●●●●●●●●</td><td>●●●●●●●●●●●</td><td>●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●●</td></tr> <tr><th>10</th><td>●●●●●●●●●●</td><td>●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●●●</td></tr> <tr><th>11</th><td>●●●●●●●●●●●</td><td>●●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●●●●</td></tr> <tr><th>12</th><td>●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●●●●</td><td>●●●●●●●●●●●●●●●●●</td></tr> </table> </div> 		1	2	3	4	5	0						1	●	●●	●●●	●●●●	●●●●●	2	●●	●●●●	●●●●●●	●●●●●●●	●●●●●●●●	3	●●●	●●●●●	●●●●●●●	●●●●●●●●	●●●●●●●●●	4	●●●●	●●●●●●	●●●●●●●●	●●●●●●●●●	●●●●●●●●●●	5	●●●●●	●●●●●●●	●●●●●●●●	●●●●●●●●●	●●●●●●●●●●	6	●●●●●●	●●●●●●●●	●●●●●●●●●	●●●●●●●●●●	●●●●●●●●●●●	7	●●●●●●●	●●●●●●●●●	●●●●●●●●●●	●●●●●●●●●●●	●●●●●●●●●●●●	8	●●●●●●●●	●●●●●●●●●●	●●●●●●●●●●●	●●●●●●●●●●●●	●●●●●●●●●●●●●	9	●●●●●●●●●	●●●●●●●●●●●	●●●●●●●●●●●●	●●●●●●●●●●●●●	●●●●●●●●●●●●●●	10	●●●●●●●●●●	●●●●●●●●●●●●	●●●●●●●●●●●●●	●●●●●●●●●●●●●●	●●●●●●●●●●●●●●●	11	●●●●●●●●●●●	●●●●●●●●●●●●●	●●●●●●●●●●●●●●	●●●●●●●●●●●●●●●	●●●●●●●●●●●●●●●●	12	●●●●●●●●●●●●	●●●●●●●●●●●●●●	●●●●●●●●●●●●●●●	●●●●●●●●●●●●●●●●	●●●●●●●●●●●●●●●●●
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<p><u>Multiplication as repeated addition</u></p> <p>Pupils apply skip counting to help find the totals of repeated additions.</p>	 <p style="text-align: center;">$5 + 5 + 5 + 5 + 5 + 5 + 5 = \square$</p>    <p style="text-align: center;">$4 \times 3 = \square$</p> 																																																																																				
<p><u>Arrays to represent multiplication equations</u></p> <p>Concrete manipulatives and images of familiar objects begin to be organised into arrays and, later, are shown alongside dot arrays. It is important to discuss with pupils how arrays can be useful. Pupils begin to understand multiplication in a more abstract fashion, applying their skip counting skills to identify the multiples of the 2x, 5x and 10x tables. The relationship between multiplication and division also begins to be demonstrated.</p>	<div style="text-align: center;">  </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div>																																																																																				

Multiplication is commutative

Pupils should understand that an array and, later, bar models can represent different equations and that, as multiplication is commutative, the order of the multiplication does not affect the answer.

Use of part-part whole model to establish the inverse relationship between multiplication and division

This link should be made explicit from early on, using the language of the part-part-whole model, so that pupils develop an early understanding of the relationship between multiplication and division. Bar models (with Cuisenaire rods) should be used to identify the whole, the value of the parts and the number of parts. It is important to highlight that with multiplication, the parts are of equal value as this is different to how this model is used for addition and subtraction.

There are three equal parts. Each part has a value of three. What is the whole?

What multiplication and division equations can you write for each bar model?
Prove that the equations are correct using a bead string.

Doubling to derive new multiplication facts

Pupils learn that known facts from easier multiplication tables can be used to derive facts from related times tables using doubling as a strategy. At this stage they double the 2x table facts to derive the 4x table facts.