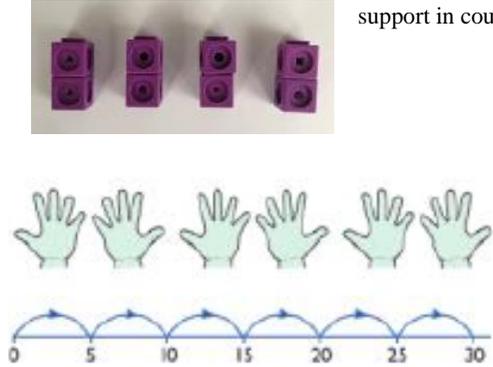
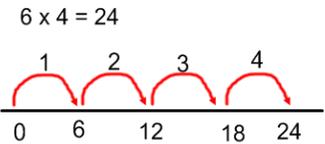
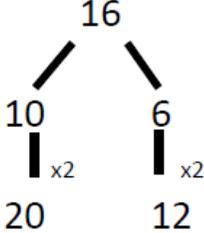


X Multiplication X

This shows the progression of teaching multiplication. Each method is designed to lead on to the next gradually building up children's understanding of number. Remember, children should think about whether a calculation can be done mentally first.

STEP	Activity	Strategy	Comments
<p>1</p> <p>Counting in multiples</p>	<p>Count in multiples supported by concrete objects in equal groups.</p>	<p>Use a number line or pictures to continue support in counting in multiples</p> 	<p>Count in multiples of a number aloud.</p> <p>Write sequences with multiples of numbers.</p> <p>2, 4, 6, 8, 10</p> <p>5, 10, 15, 20, 25, 30</p>
<p>2</p> <p>Repeated addition</p>	<p>Counting in steps of... Times tables songs</p>	<p>$5 \times 3 = 15$ is the same as $5 + 5 + 5 = 15$</p> <p>Use practical activities to show how to double a number. Use different objects to add equal groups.</p> 	<p>The main concept to get across is that when you multiply you are repeatedly adding the same number again and again. Counters can be used to illustrate this clearly. Write addition sentences to describe objects and pictures.</p> 
<p>3</p> <p>Simple Multiplication</p>	<p>Counting in steps of... Times tables songs Times Tables bingo Interactive maths games.</p>	<p>Array</p> 	<p>Read out the calculations as: 3×4 '3, multiplied 4 times' Understand that this is a group of 3, repeated 4 times. Use an array to model the concept.</p> <p>Emphasise that children don't count individual dots, but count up in the appropriate steps. This can lead onto children</p> <p>$5 + 5 + 5 = 15$</p> <p>$3 \times 5 = 15 + 3 + 3 = 15$</p> 

		<p>Number line</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> $3 \times 4 = 12$  3 6 9 12 </div> <div style="text-align: center;"> $4 \times 3 = 12$  4 8 12 </div> </div>	<p>representing their counting on a number line.</p>
<p>4 Doubling</p>	<p>Interactive maths games. Doubling & Halving rapid recall</p>	<p>$8 \times 2 = 16$ (<i>double a single digit</i>)</p> <div style="display: flex; align-items: center; justify-content: center; margin: 20px 0;"> <div style="text-align: center;"> 16  </div> <div style="margin-left: 20px;"> <p>Partition a number and then double each part before recombining it back together.</p> </div> </div> <p>$24 \times 2 = 48$ (<i>double the tens, double the ones, combine</i>) $8 \times 4 = 32$ (<i>can use double, then double again</i>)</p>	<p>It is important that doubling and halving are taught independently to other mental strategies for multiplying and dividing. It is not appropriate for children to use arrays or number lines to multiply by 2. Children should be able to double, even large numbers through partitioning, mentally.</p>
<p>5 Moving digits</p>	<p>Moving digits ITP</p>	<p>Multiply by 10 / 100</p> <p>$79 \times 100 = 7900$</p> <div style="display: flex; justify-content: space-between; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;"> 79 790 7900 </div> <div style="margin-left: 20px;"> <p>x 10 (digits move one column to left)</p> <p>x 100 (digits move two columns to left)</p> </div> </div>	<p>Similar to doubling, children should be able to multiply by ten mentally. They need to do this in order to solve larger multiplication calculations effectively. Use MOVING DIGITS ITP / place value chart: Emphasise the DIGITS MOVE, not adding on a zero when x by 10</p>

<p>6</p> <p>Grid Method</p> <p>TO x O</p>	<p>Times Tables bingo</p> <p>Interactive maths games.</p>	<p>Can introduce informally using partitioning</p> <p>'13 x 6 is the same as 10 x 6 and 3 x 6 (60 + 18) = 78'</p> <p>... Then Grid Method</p> $ \begin{array}{r} x \quad 10 \quad 3 \\ \hline 60 \quad 18 \\ \hline 60 + 18 = 78 \end{array} $	<p>The grid method allows children to use known number facts to solve multiplication problems.</p>
<p>7</p> <p>Standard Method</p>		<p>Work towards standard method</p> $ \begin{array}{r} 24 \\ \times 3 \\ \hline 12 \quad (3 \times 4) \\ 60 \quad (3 \times 20) \\ \hline 72 \end{array} $	<p>The standard method encourages children to use known multiplication facts when solving larger multiplication calculations.</p> <p><i>This will also help them when dividing.</i></p>
<p>8</p> <p>Compact Standard Method</p>	<p>Times Tables bingo</p> <p>Interactive maths games.</p>	<p>Compact (standard method)</p> $ \begin{array}{r} 24 \\ \times 3 \\ \hline 72 \quad (\text{Use familiar calculations to show links}) \end{array} $	<p>Children can begin to use the compact methods when they are comfortable with solving the multiplications mentally.</p>
<p>9</p> <p>TO X TO</p> <p>HTO X TO</p>	<p>Times Tables bingo</p> <p>Interactive maths games.</p>	$ \begin{array}{r} \quad 7 \quad 4 \\ \times \quad 6 \quad 3 \\ \hline \quad 1 \quad 2 \\ 2 \quad 1 \quad 0 \\ 2 \quad 4 \quad 0 \\ + \quad 4 \quad 2 \quad 0 \quad 0 \\ \hline 4 \quad 6 \quad 6 \quad 2 \end{array} $ $ \begin{array}{r} \quad 2 \quad 3 \quad 1 \\ 1342 \\ \times \quad 18 \\ \hline 13420 \\ 10736 \\ \hline 24156 \\ \quad 1 \end{array} $	<p>The grid method allows children to break up large multiplication calculations into easier chunks.</p> <p><i>Being able to multiply digits by ten and multiplies of ten is a necessity.</i></p>

10 Multiplying Decimals	Times Tables bingo Interactive maths games.	$14.53 \times 4 = 58.12$ $\begin{array}{r} 14.53 \\ \times 4 \\ \hline 58.12 \\ 121 \end{array}$	Continue to use 0 as place holder if needed.
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