

Multiplication Written Calculation Progression



<p>1. Repeated Addition $3 \times 2 = 6$</p> <p> </p> <p>3 groups of 2. 3 lots of 2</p>	<p>2. Arrays & Bar Model $4 \times 3 = 12$</p> <p> </p>															
<p>3. Times Tables To know all times tables up to 12×12 and the associated division facts.</p> <p>E.g. $7 \times 8 = 56$ $8 \times 7 = 56$ $70 \times 8 = 560$ $80 \times 70 = 5600$</p> <p> $56 \div 8 = 7$ $56 \div 7 = 8$ $560 \div 8 = 70$ etc. </p>	<p>4. Expanded Column Multiplication</p> <p><u>Year 3 & 4</u></p> <p>$12 \times 3 = 36$</p> $\begin{array}{r} 12 \\ \times 3 \\ \hline 6 \quad (3 \times 2) \\ 30 \quad (3 \times 10) \\ \hline 36 \end{array}$ <p><u>Year 5</u></p> <p>$31 \times 12 = 372$</p> $\begin{array}{r} 31 \\ \times 12 \\ \hline 62 \quad (2 \times 31) \\ 310 \quad \text{place holder} \quad (1 \times 31) \\ \hline 372 \end{array}$															
<p>5. Column Multiplication</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Tens</th> <th>Ones</th> <th></th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td></td> <td style="text-align: center;">3</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">2</td> <td></td> <td style="text-align: center;">X</td> <td style="text-align: center;">1 2</td> </tr> </tbody> </table> <p style="text-align: center;"> $\underline{46} \quad (2 \times 23)$ $\underline{62} \quad (2 \times 31)$ $\underline{310} \quad (\text{place holder})(10 \times 31)$ $\underline{372}$ </p>	Tens	Ones		Tens	Ones	2	3		3	1	X	2		X	1 2	<p><u>Year 5</u></p> <p>$31 \times 12 = 372$</p> $\begin{array}{r} 31 \\ \times 12 \\ \hline 62 \quad (2 \times 31) \\ 310 \quad \text{place holder} \quad (1 \times 31) \\ \hline 372 \end{array}$
Tens	Ones		Tens	Ones												
2	3		3	1												
X	2		X	1 2												
<p>6. Column Multiplication with Regrouping $24 \times 43 = 1032$</p> <p style="margin-left: 20px;">Tens Ones</p> $\begin{array}{r} 24 \\ \times 43 \\ \hline 72 \\ 960 \\ \hline 1032 \end{array}$																