

Primary School Calculation policy Stage G

Policy reflects: concrete (do it!) abstract (see it!) visual (remember it!) communication (record it!)

Addition	Subtraction	Multiplication	Division
<p style="text-align: center;"><u>Stage G (Y6)</u></p> <p>Promote decision making so that pupils choose an appropriate method/strategy.</p> <p>Continue the use of informal methods and number lines.</p> <p>Ensure understanding of standard written method.</p> <p>Continue ThHTU + ThHTU then calculations with any number of digits.</p> <p>Approximate using the most significant digits and a feel for the 'whole' number.</p> <p>Appropriate teaching/use of the calculator including interpreting the display, e.g. money or measures.</p> <p><i>Calculator display 0.37 is then interpreted as 37p in the context of money. Remind 4p = 0.04 Calculator display £1.4 is interpreted as £1.40</i></p> $\begin{array}{r} 7648 \\ + 1486 \\ \hline 9134 \\ \small{111} \end{array}$ <p>Decimal points are fixed on the line with digits in the squares.</p> <p>Decimals, fill 'empty columns' with zeros.</p>	<p style="text-align: center;"><u>Stage G</u></p> <p>ThHTU – ThHTU then any number of digits.</p> <p>Appropriate use of a calculator including interpretation of displays.</p> <p>Money, measures and real life contexts.</p> $6467 - 2684$ $\begin{array}{r} \small{5131} \\ \cancel{6467} \\ - 2684 \\ \hline 3783 \end{array}$ $3249 - 725$ $\begin{array}{r} \small{1181} \\ 324\cancel{90} \\ - 725 \\ \hline 31765 \end{array}$ <p>13 6 – 28 =</p> <p style="text-align: center; color: red;">+02 +106</p> <p>136 – 28 = 108</p>	<p style="text-align: center;"><u>Stage G</u></p> <p>ThHTU x TU and HTU x TU and including decimals.</p> <p>TU x TU</p> $\begin{array}{r} 78 \\ \times 42 \\ \hline 16 \quad (2 \times 8) \\ 140 \quad (2 \times 70) \\ 320 \quad (40 \times 8) \\ +2800 \quad (40 \times 70) \\ \hline 3276 \end{array}$ <p>Compact (long)</p> $\begin{array}{r} 78 \\ \times 42 \\ \hline 156 \\ +3120 \\ \hline 3276 \end{array}$ <p>Involve decimals, money and measures through approximation and appropriate use of the calculator.</p> <p>Addition either mentally or by column addition.</p>	<p style="text-align: center;"><u>Stage G</u></p> <p>Know all multiplication facts and corresponding division facts to 12 x 12 and beyond and be able to apply them.</p> <p>Explain the effect of dividing by 1000.</p> <p>Extend methods to include Th HTU by TU.</p> <p>Continue to use the short division method when the two digit divisor is up to 12 or is a easily recognisable multiple eg 20, 25 or 50.</p> <p>Use a calculator appropriately, approximating first.</p> <p>Use of calculator for interpreting the quotient by entering a fraction to find the decimal equivalent.</p> <p>Mathsonline.org-long division</p> <p>Use long division only with pupils who are secure with number sense and place value.</p> <p style="font-size: 24pt; text-align: center;">384 ÷ 16</p> <p style="text-align: center;"><i>“What do I know about the divisor?”</i></p> <p style="text-align: center;"><i>Record partial tables.</i></p>

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$1249 + 725$ $\begin{array}{r} 12490 \\ + 725 \\ \hline 13215 \\ 11 \end{array}$	<p>leading to</p> $146 - 276$ $\begin{array}{cccc} +0.04 & +0.2 & & +1.16 \\ \hline 276 & 280 & 3 & 146 \end{array}$	<p>Decimals. Teach children how to use known facts to build new facts according to the place value required, e.g.</p> $3 \times 4 = 12$ $3 \times 0.4 = 1.2$ $3 \times 0.04 = 0.12$ 0.75×6 $0.7 \times 6 = 4.2$ $0.05 \times 6 = 0.3$ $0.75 \times 6 = 4.5$ <p>Grid method based upon very secure place value.</p> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 2px 5px;">x</td> <td style="padding: 2px 5px;">0.7</td> <td style="padding: 2px 5px;">0.05</td> </tr> <tr> <td style="padding: 2px 5px;">6</td> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;"></td> </tr> </table> <p>Overcoming Barriers L4/5</p> <p>Mike works out that $14 \times 12 = 168$. What is 14×1.2? How do you know?</p> <p>Use a written method to calculate 24×13. What do you need to change to show a similar method to work out 2.4×13?</p> <p>Use a written method to find the area of a swimming pool which is 25 m long and 7.5 m wide.</p> <p>Complete the missing sections to work out 35×2.1 :</p>	x	0.7	0.05	6			<p><i>Long division (thinking not generally recorded)</i></p> $\begin{array}{r} \underline{24} \\ 16 \overline{) 38} 4 \\ - 32 \downarrow \\ \hline 64 \\ - 64 \\ \hline 0 \end{array}$ <p style="margin-left: 100px;"><i>(38 ÷ 16 = 2 r 6; 2 × 16 = 32) (bring the 4 down)</i></p> <p style="margin-left: 100px;"><i>(16 into 64 = 4; 4 × 16 = 64)</i></p> <p style="margin-left: 100px;"><i>(no remainder)</i></p> <p>Continue to make use of partitioning and the number line for repeated addition where appropriate.</p> <p>$944 \div 22 =$ What do I know about the divisor?</p> <p>Express the remainder as a fraction or decimal.</p> <p>Overcoming Barriers L4/5</p> <p>Division giving a decimal answer, e.g. Divide 9 by 5 giving your answer as a decimal.</p> <p>Missing number calculations, e.g.</p>
x	0.7	0.05							
6									

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X	<input type="checkbox"/>	0.1
30	60	<input type="checkbox"/>
5	<input type="checkbox"/>	0.5

Which is closer to 100: 5.2×17 or 7.2×15 ?
Use written methods to prove your answer.

$$\boxed{} \div 8 = 0.04;$$

$$0.6 \times \boxed{} = 4.2$$

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