

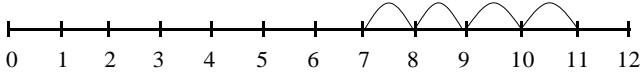
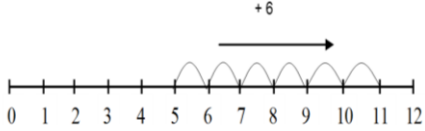
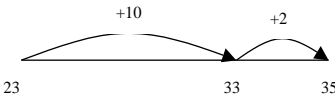
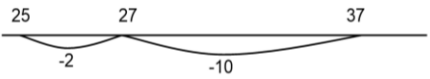

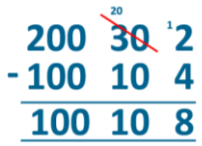
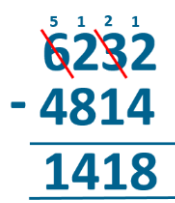


Written Calculation Progression

Addition	Subtraction
<p>Stage 1 Combine two sets of objects which will progress onto adding onto a set.</p> 	<p>Stage 1 Understand subtraction as taking away using objects.</p> <p>$6 - 1 = 5$</p> 
<p>Stage 2 Use a number line to count on in ones.</p> <p>$7 + 4 = 11$</p> 	<p>Stage 2 Use a number line to count back in ones.</p> <p>Understand that subtraction is finding the difference.</p> <p>$11 - 5 = 6$</p> 
<p>Stage 3 Use a number line to count on in tens and ones.</p> <p>$23 + 12 = 23 + 10 + 2$ $= 33 + 2$ $= 35$</p> 	<p>Stage 3 Use a number line to subtract tens and ones.</p> <p>$37 - 12 = 25$</p>  <p>Use counting on to find the difference.</p> <p>$42 - 39 = 3$</p> 
<p>Stage 4 Expanded column method. Progress onto:</p> $\begin{array}{r} 76 \\ + 47 \\ \hline 110 + 13 = 123 \end{array}$ $\begin{array}{r} 76 \\ +47 \\ \hline 13 \\ \hline 110 \\ \hline 123 \end{array}$	<p>Stage 4 Expanded column method.</p> <p>$232 - 114 = 118$</p> 
<p>Stage 5 Formal method, showing numbers to be carried underneath.</p> $\begin{array}{r} 358 \\ + 73 \\ \hline 431 \\ \hline 11 \end{array}$ <p>Extend to decimals.</p>	<p>Stage 5 Formal method.</p> <p>$6232 - 4814 = 1418$</p>  <p>Extend to decimals.</p>

Multiplication	Division
<p>Stage 1 Understand multiplication as repeated addition using objects and images.</p> <p> $2 + 2 + 2 + 2 + 2 = 10$ $2 \times 5 = 10$ 2 multiplied by 5 5 pairs 5 hops of 2 </p>	<p>Stage 1 Sharing using objects and apparatus.</p> <p> $15 \div 5 = 3$ 15 shared between 5 </p>
<p>Stage 2 Use jottings to develop an understanding of partitioning and doubling 2-digit numbers.</p> $ \begin{array}{r} 16 \\ / \quad \backslash \\ 10 \quad 6 \\ / \times 2 \quad \backslash \times 2 \\ 20 \quad + \quad 12 \quad = \quad 32 \end{array} $	<p>Stage 2 Grouping using a number line.</p> <p>$15 \div 3 = 5$</p>
<p>Stage 3 Use arrays.</p> <p>When confident, move onto the expanded method.</p> $ \begin{array}{r} 3 \times 23 \\ \begin{array}{r} 20 \quad 3 \\ 60 \quad 9 \\ \hline 69 \end{array} \end{array} $ <p> $3 \times 20 = 60$ $3 \times 3 = 9$ $60 + 9 = 69$ </p>	<p>Stage 3 Count on in groups using a number line.</p> <p>$840 \div 7 = 120$</p> <p>100 groups 20 groups = 120 groups</p>
<p>Stage 4 Short multiplication.</p> <p>2 digits x 1 digit</p> $ \begin{array}{r} 23 \\ \times 6 \\ \hline 138 \end{array} $ <p>Introduce long multiplication.</p> $ \begin{array}{r} 23 \\ \times 6 \\ \hline 138 \\ 11 \end{array} $	<p>Stage 4 Formal short division.</p>
<p>Stage 5 Long multiplication.</p> $ \begin{array}{r} 2 3 1 \\ 1342 \\ \times 18 \\ \hline 10736 \\ 13420 \\ \hline 24156 \end{array} $	<p>Stage 5 Formal long division.</p>