

Written calculation policy

	Addition	Subtraction	Multiplication	Division
Year 1	<p>From spring term: using a number line counting on in units within 20.</p> <p>A2: Counting On</p> <p>$5 + 3 = 8$</p>	<p>From spring term: using a number line counting back in units within 20.</p> <p>S3: Counting Back</p> <p>$12 - 3 = 9$</p>	<p>Arrays 2,5,10</p> <p>(M3: Arrays)</p> <p>"2 groups of 5 counters" or "5 groups of 2 counters" - "10 counters altogether"</p>	<p>Sharing leading to grouping 2,5,10</p> <p>D1: Sharing (Concept)</p> <p>"If I share 6 into 2 equal amounts, how many in each group?" Answer: 3</p> <p>D2: Grouping (Concept)</p> <p>"How many groups of 2 can I make out of 6?" Answer: 3</p>
Year 2	<p>Using a number line moving to more efficient steps i.e. counting a ten then units up to 2 digit numbers within 100</p> <p>A3: Forwards Jump</p> <p>$43 + 24 = 67$</p> <p>A2b: Counting On <small>Bridging 100 Number</small></p> <p>$57 + 6 = 63$</p>	<p>Using a number line moving to more efficient steps i.e. counting back a ten then units up to 2 digit numbers within 100</p> <p>S6: Backwards Bounce</p> <p>$87 - 23 = 64$</p>	<p>Using a number line single jumps U x U Teen x U (15 x 5 would be 10 x 5 then 5 x 5)</p> <p>M4: Multi Boing!</p> <p>$10 \times 5 = 50$ $5 \times 5 = 25$ $15 \times 5 = 75$</p>	<p>Using a number line and single jumps up to 10th multiple of 2,5 or 10. Progress to remainders</p> <p>D5: Grouping on a Number Line</p> <p>"How many 5s in 20?" Answer: 4</p> <p>$20 + 5 = 4$</p> <p>D5a: Grouping on a Number Line <small>Remainders</small></p> <p>"How many 5s in 17?" Answer: 3 remainder 2</p> <p>$17 + 5 = 3r2$</p>

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Year 3	<p>Addition with partitioning progressed to the vertical column method up to 3 digits</p> <p>A4c: Partitioning</p> $\begin{array}{r} 687 + 248 = 935 \\ 600 + 200 = 800 \\ 80 + 40 = 120 \\ 7 + 8 = 15 \\ \hline 935 \end{array}$ <p>A6: Expanded Column</p> $\begin{array}{r} 100 \ 10 \ 1 \\ 687 \\ + 248 \\ \hline 15 \\ 120 \\ 800 \\ \hline 935 \end{array}$	<p>Expanded vertical column method up to 3 digits</p> <p>S10: Expanded Column</p> $\begin{array}{r} 723 - 356 = 367 \\ 600 \ 110 \ 1 \\ 700 \ 20 \ 3 \\ - 300 \ 50 \ 6 \\ \hline 300 \ 60 \ 7 \end{array}$	<p>Moving from a number line to partitioning and the grid method</p> <p>M4a: Partitioning</p> $15 \times 5 = 75$ $10 \times 5 = 50$ $5 \times 5 = 25$ $50 + 25 = 75$ <p>M5: Grid Method</p> <table border="1"> <tr> <td>x</td> <td>10</td> <td>5</td> </tr> <tr> <td>5</td> <td>50</td> <td>25</td> </tr> </table> $50 + 25 = 75$	x	10	5	5	50	25	<p>Using a number line Chunking 2,5,10,3,4,8 TU÷U remainders By EOY go up to 30th multiple so that children can subtract groups of 10x ...</p> <p>D7: Chunking Jump</p> <p>D7a: Chunking Jump</p>		
x	10	5										
5	50	25										
Year 4	<p>Compact vertical method up to 4 digits</p> <p>A7d: Column Addition</p> $\begin{array}{r} 4873 \\ + 3762 \\ \hline 8635 \end{array}$ <p>A7h: Column Addition</p> $\begin{array}{r} 10 \ 1 \ \frac{1}{10} \\ 76.7 \\ + 58.5 \\ \hline 135.2 \end{array}$	<p>Decomposition up to 4 digits</p> <p>S11d: Column Subtraction</p> $\begin{array}{r} 5042 \\ - 1776 \\ \hline 3266 \end{array}$ <p>S11h: Column Subtraction</p> $12.4 - 5.97 = 6.43$ $\begin{array}{r} 10 \ 1 \ \frac{1}{10} \ \frac{1}{100} \\ 12.40 \\ - 5.97 \\ \hline 6.43 \end{array}$	<p>Grid method TU x U HTU x U moving to expanded</p> <p>M5b: Grid Method</p> <table border="1"> <tr> <td>x</td> <td>100</td> <td>40</td> <td>7</td> </tr> <tr> <td>4</td> <td>400</td> <td>160</td> <td>28</td> </tr> </table> $400 + 160 + 28 = 588$ <p>M6: Expanded Column</p> $\begin{array}{r} 100 \ 10 \ 1 \\ 147 \\ \times 4 \\ \hline 28 \ (4 \times 7) \\ 160 \ (4 \times 40) \\ 400 \ (4 \times 100) \\ \hline 588 \end{array}$	x	100	40	7	4	400	160	28	<p>Short division of 2 and 3 digit numbers with remainders</p> <p>D10: Short Division</p> $136 \div 4 = 34$ <p>D10c: Short Division</p> $394 \div 6 = 65r4$
x	100	40	7									
4	400	160	28									

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Year 5	<p>Compact vertical method up to 5 digits</p> <p>A7e: Column Addition</p> $\begin{array}{r} 787567 \\ + 446278 \\ \hline 1233845 \\ \hline \end{array}$ <p>A7h: Column Addition</p> $\begin{array}{r} 76.7 \\ + 58.5 \\ \hline 135.2 \\ \hline \end{array}$	<p>Decomposition up to 5 digits</p> <p>S11e: Column Subtraction</p> $\begin{array}{r} 742831 \\ - 427358 \\ \hline 315473 \\ \hline \end{array}$ <p>S11h: Column Subtraction <small>With Decimals</small></p> $12.4 - 5.97 = 6.43$ $\begin{array}{r} 12.40 \\ - 5.97 \\ \hline 6.43 \\ \hline \end{array}$	<p>Compact vertical method HTU x U. Expanded vertical method used as a bridge to understanding long multiplication as in Year 6 (children move when ready) HTU x TU TU x TU</p> <p>M7a: Column Multiplication</p> $\begin{array}{r} 3647 \\ \times 4 \\ \hline 14588 \\ \hline \end{array}$ <p>M9b: Long Multiplication <small>Column</small></p> $\begin{array}{r} 203 \\ \times 68 \\ \hline 1624 \quad (8 \times 203) \\ + 12180 \quad (60 \times 203) \\ \hline 13804 \\ \hline \end{array}$	<p>Short division ThHTU ÷ U Remainders expressed also as decimals and fractions</p> <p>D10f: Short Division <small>Different Remainders</small></p> $\begin{array}{r} 169.2 \\ 5 \overline{)846.0} \end{array} \quad 846 \div 5$ $\begin{array}{r} 169r1 \\ 5 \overline{)846} \end{array} \quad 5 \overline{)846} \frac{1}{5}$
Year 6	<p>Compact vertical method up to 6 digits</p> <p>A7e: Column Addition</p> $\begin{array}{r} 787567 \\ + 446278 \\ \hline 1233845 \\ \hline \end{array}$ <p>A7h: Column Addition</p> $\begin{array}{r} 76.7 \\ + 58.5 \\ \hline 135.2 \\ \hline \end{array}$	<p>Decomposition up to 5 digits</p> <p>S11e: Column Subtraction</p> $\begin{array}{r} 742831 \\ - 427358 \\ \hline 315473 \\ \hline \end{array}$ <p>S11h: Column Subtraction <small>With Decimals</small></p> $12.4 - 5.97 = 6.43$ $\begin{array}{r} 12.40 \\ - 5.97 \\ \hline 6.43 \\ \hline \end{array}$	<p>Long multiplication ThHTU x TU</p> <p>M9g: Long Multiplication <small>Column</small></p> $\begin{array}{r} 3786 \\ \times 48 \\ \hline 30288 \quad (8 \times 3786) \\ + 151440 \quad (40 \times 3786) \\ \hline 181728 \\ \hline \end{array}$	<p>Long division Up to 2 dp. ThHTTU ÷ U</p> <p>D12: Long Division <small>Short Division Method</small></p> $\begin{array}{r} 26r21 \\ 37 \overline{)983} \end{array}$

