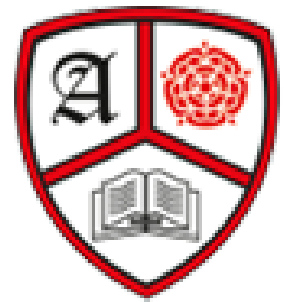


Anderton Primary School

Maths Mastery Calculation Policy

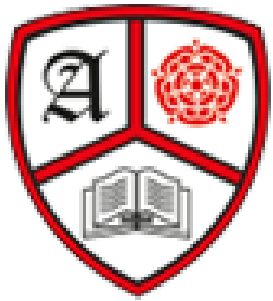


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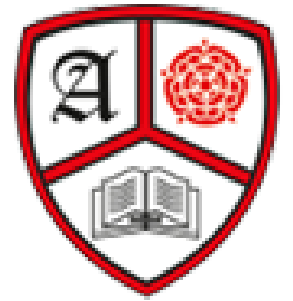
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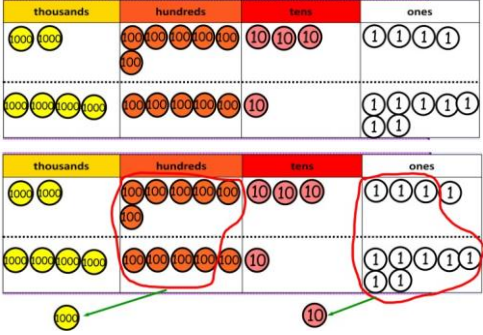
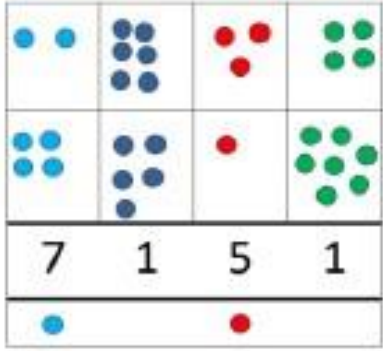
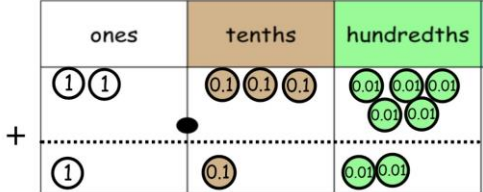
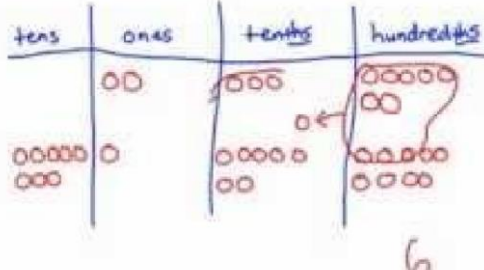
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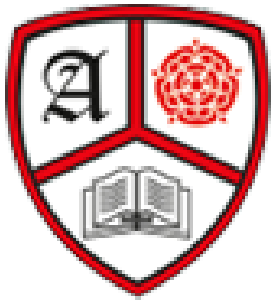
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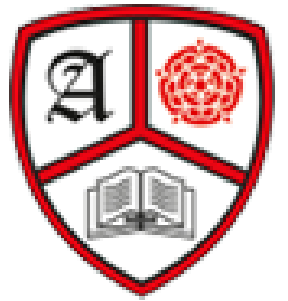
Year 4-6 Addition

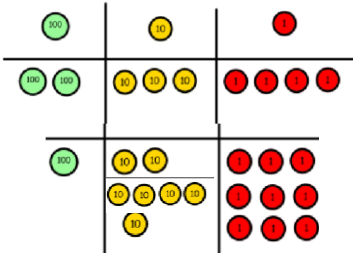
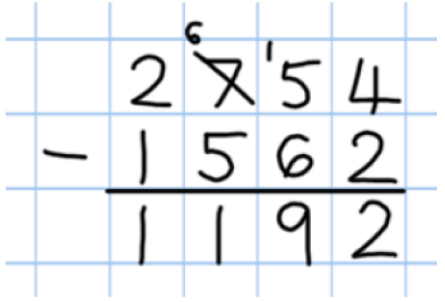
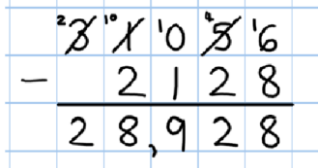
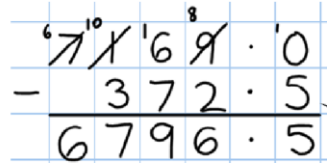
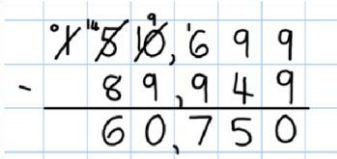
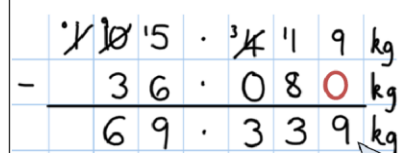


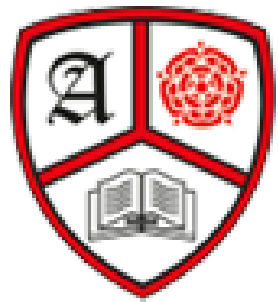
Objective ,Strategy Key Vocabulary	Concrete	Pictorial	Abstract
<p>Y4—add numbers with up to 4 digits</p>	<p>Children continue to use dienes or pv counters to add, exchanging ten ones for a ten and ten tens for a hundred and ten hundreds for a thousand.</p> 	 <p>Draw representations using pv grid.</p>	$\begin{array}{r} 2634 \\ + 4517 \\ \hline 7141 \\ \hline \end{array}$ <p>1 1</p> <p>Continue from previous work to carry ones, tens and hundreds. Relate to money and measures.</p>
<p>Y5—add numbers with more than 4 digits.</p> <p>Add decimals with 2 decimal places, including money.</p>	<p>As year 4</p>  <p>Introduce decimal place value counters</p>		$\begin{array}{r} 22,634 \\ + 15,673 \\ \hline 38,307 \end{array}$ <p>1 1</p> <p>£ 127.67 + £ 38.45 £ 166.12</p> <p>1 1 1</p>
<p>Y6—add several numbers of increasing complexity</p> <p>Including adding money, measure and decimals with different numbers of decimal points.</p>	<p>Some children may need to use manipulatives and/or representations for longer. See year 5</p>		$\begin{array}{r} 89,472 \\ 63,673 \\ + 3,016 \\ \hline 156,161 \end{array}$ <p>1 1 1 1</p> <p>1.437 0.600 + 3.020 4.057</p> <p>1</p> <p>Insert zeros for place holders.</p>



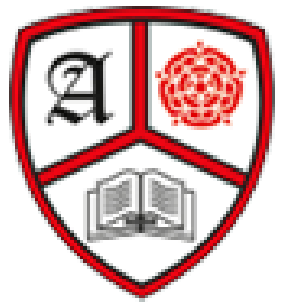
Year 4 – 6 Subtraction



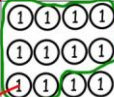




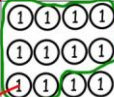




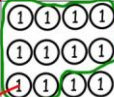




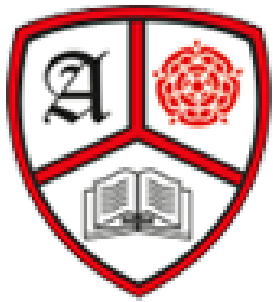
Objective & Strategy	Concrete	Pictorial	Abstract
<p>Subtracting tens and ones</p> <p>Year 4 subtract with up to 4 digits.</p> <p><i>Introduce decimal subtraction through context of money</i></p>	<p>234 - 179</p>  <p>Model process of exchange using Numicon, base ten and then move to PV counters.</p>	<p>Children to draw pv counters and show their exchange—see Y3</p>	 <p>Use the phrase 'take and make' for exchange</p>
<p>Year 5- Subtract with at least 4 digits, including money and measures.</p> <p><i>Subtract with decimal values, including mixtures of integers and decimals and aligning the decimal point.</i></p>	<p>As Year 4</p>	<p>Children to draw pv counters and show their exchange—see Y3</p>	 <p>Use zeros for placeholders.</p> 
<p>Year 6—Subtract with increasingly large and more complex numbers and decimal values.</p>			 



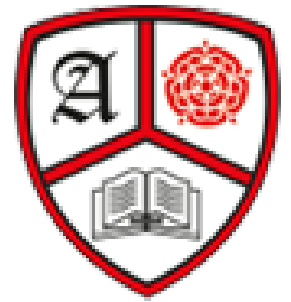
Year 5 Multiplication



Objective & Strategy	Concrete	Pictorial	Abstract																																																		
Multiply 3 and 4 digits x 1 digit.	<p>Children may continue to be supported by place value counters at the stage of multiplication. This initially done where there is no regrouping.</p> <p>3024 x 3</p> <table border="1"><thead><tr><th>thousands</th><th>hundreds</th><th>tens</th><th>ones</th></tr></thead><tbody><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></tbody></table> <p>900 + 0 + 60 +</p>	thousands	hundreds	tens	ones									<p>Children may continue to draw their understanding using place value grids.</p>	<div><div>3024</div><div>x3</div><div>-----</div><div>9072</div><div>1</div></div>																																						
thousands	hundreds	tens	ones																																																		
																																																					
																																																					
Multiply up to 4 digits by 2 digits	<p>Manipulatives may still be used with the corresponding long multiplication modelled alongside.</p> <p>Begin with teen number x teen number.</p> <p>Progress to any 2 –4 digit number x 2 digit.</p>	<div><div>108</div><div>103</div><div>10080</div><div>3024</div></div>	<div><div><table><tr><td></td><td></td><td>1</td><td>8</td></tr><tr><td></td><td>x</td><td>1</td><td>3</td></tr><tr><td></td><td></td><td>5</td><td>4</td></tr><tr><td>1</td><td></td><td>8</td><td>0</td></tr><tr><td>2</td><td></td><td>3</td><td>4</td></tr></table></div><div>18 x 3 on the first row</div><div>(8 x 3 =24, carrying the 2 for 20, then 1 x 3)</div><div>18 x 10 on the 2nd row. Show multiplying by 10 by putting zero in units first</div><div><table><tr><td></td><td>100s</td><td>10s</td><td>1s</td><td></td></tr><tr><td></td><td></td><td>3</td><td>1</td><td></td></tr><tr><td></td><td></td><td>2</td><td>4</td><td></td></tr><tr><td>x</td><td>1</td><td>2</td><td>4</td><td>31 x 4</td></tr><tr><td></td><td>6</td><td>2</td><td>0</td><td>31 x 20</td></tr><tr><td></td><td>7</td><td>4</td><td>4</td><td></td></tr></table></div></div>			1	8		x	1	3			5	4	1		8	0	2		3	4		100s	10s	1s				3	1				2	4		x	1	2	4	31 x 4		6	2	0	31 x 20		7	4	4	
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Year 5 Division



Objective & Strategy	Concrete	Pictorial	Abstract
Divide decimals by a single digit, using x and ÷ by 10 or 100			<p>Pupils understand the use of X and ÷ 10 to make connections.</p> $ \begin{array}{rcl} 6.3 & \div & 9 = 0.7 \\ \times 10 \downarrow & & \uparrow \div 10 \\ 63 & \div & 9 = 7 \end{array} $
Short division of decimals			<p>Children build on work from Year 4, now with decimals.</p> $ \begin{array}{r} 0 \cdot 41 \\ 6 \overline{) 2 \cdot 246} \end{array} $