

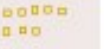
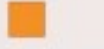




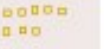
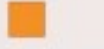


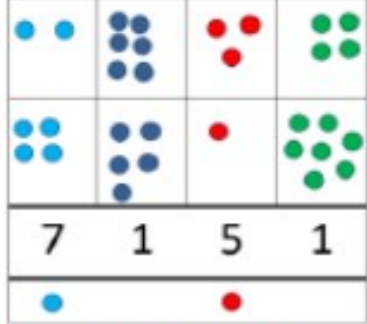
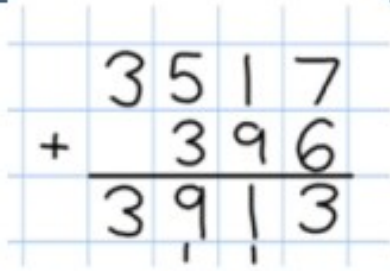


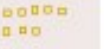
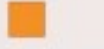








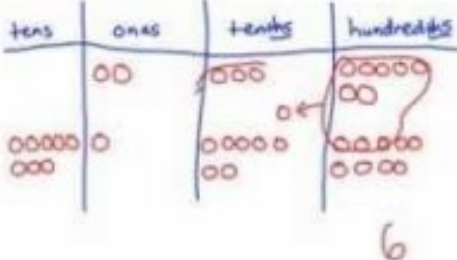





# Chapel St Leonards Primary School Calculation Policy

Objective & Strategy	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> <table border="1" style="width: 100%; text-align: center;"> <tr> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	Hundreds	Tens	Ones							 <p>Draw representations using pv grid.</p>	 <p>Continue from previous work to carry hundreds as well as tens.</p> <p>Relate to money and measures.</p>												
Hundreds	Tens	Ones																						
																								
																								
<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> <table border="1" style="width: 100%; text-align: center;"> <tr> <th>tens</th> <th>ones</th> <th>tenths</th> <th>hundredths</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Introduce decimal place value counters and model exchange for addition.</p>	tens	ones	tenths	hundredths					<p>2.37 + 81.79</p> 	<p>72.8</p> <p>+ 54.6</p> <p><u>127.4</u></p> <p>11</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>£</td> <td>23</td> <td>·</td> <td>59</td> </tr> <tr> <td>+</td> <td>£</td> <td>7</td> <td>·</td> <td>55</td> </tr> <tr> <td>£</td> <td>31</td> <td>·</td> <td>14</td> </tr> </table>	£	23	·	59	+	£	7	·	55	£	31	·	14
tens	ones	tenths	hundredths																					
																								
£	23	·	59																					
+	£	7	·	55																				
£	31	·	14																					
<p>Y6—add several numbers of increasing complexity</p> <p>Including adding money, measure and decimals with different numbers of decimal points.</p>	<p>As Y5</p>	<p>As Y5</p>	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>81,059</td> </tr> <tr> <td>3,668</td> </tr> <tr> <td>15,301</td> </tr> <tr> <td>+ 20,551</td> </tr> <tr> <td><u>120,579</u></td> </tr> </table> <p>Insert zeros for place holders.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>23</td> <td>·</td> <td>361</td> </tr> <tr> <td>9</td> <td>·</td> <td>080</td> </tr> <tr> <td>59</td> <td>·</td> <td>770</td> </tr> <tr> <td>+</td> <td>1</td> <td>·</td> <td>300</td> </tr> <tr> <td>93</td> <td>·</td> <td>511</td> </tr> </table>	81,059	3,668	15,301	+ 20,551	<u>120,579</u>	23	·	361	9	·	080	59	·	770	+	1	·	300	93	·	511
81,059																								
3,668																								
15,301																								
+ 20,551																								
<u>120,579</u>																								
23	·	361																						
9	·	080																						
59	·	770																						
+	1	·	300																					
93	·	511																						

# Y4-6 ADDITION +


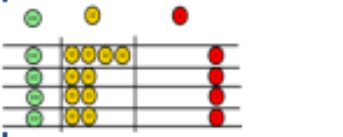
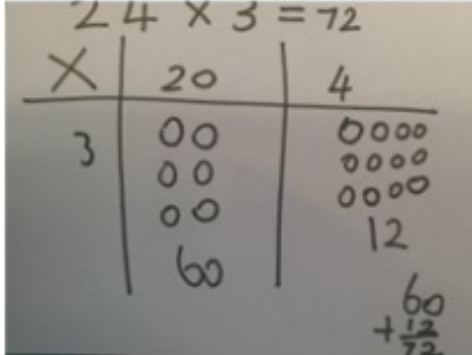
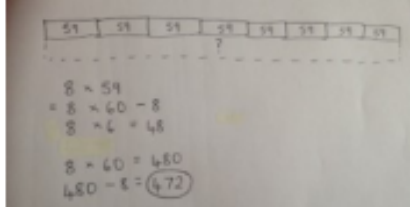
Chapel St Leonards Primary School Calculation Policy

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</i></p>	<p>As Year 4</p>	<p>Children to draw pv counters and show their exchange—see Y3</p>	<p>Use zeros for place-holders.</p>
<p>Year 6—Subtract with increasingly large and more complex numbers and decimal values.</p>			

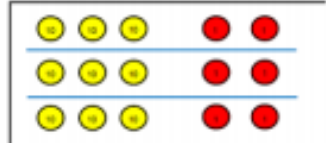
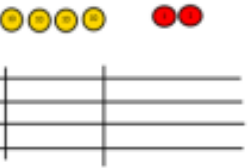



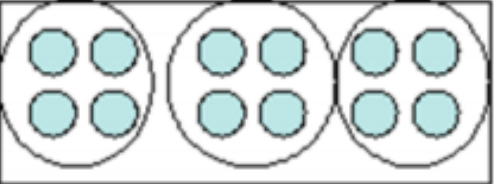
Y4-6  
SUBTRACTION -

# Chapel St Leonards Primary School Calculation Policy

# Y4 MULTIPLICATION X

Objective & Strategy	Concrete	Pictorial	Abstract																													
<p>Grid method recap from year 3 for 2 digits x 1 digit</p> <p>Move to multiplying 3 digit numbers by 1 digit. (year 4 expectation)</p>	<p>Use place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows</p>  <p style="font-size: small;">Calculations 4 x 126</p> <p>Fill each row with 126</p>  <p>Add up each column making any exchanges needed</p>	<p>Children can represent their work with place value counters in a way that they understand.</p> <p>They can draw the counters using colours to show different amounts or just use the circles in the different columns to show their thinking as shown below.</p> 	<p>Start with multiplying by one digit numbers and showing the clear addition alongside the grid.</p> <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;">x</td> <td style="padding: 5px;">30</td> <td style="padding: 5px;">5</td> </tr> <tr> <td style="padding: 5px;">7</td> <td style="padding: 5px;">210</td> <td style="padding: 5px;">35</td> </tr> </table> <p style="text-align: center; margin-top: 5px;"><math>210 + 35 = 245</math></p>	x	30	5	7	210	35																							
x	30	5																														
7	210	35																														
<p>Column multiplication</p>	<p>Children can continue to be supported by place value counters at the stage of multiplication. This initially done where there is no regrouping. <math>321 \times 2 = 642</math></p> <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #f08080;">Hundreds</th> <th style="background-color: #90ee90;">Tens</th> <th style="background-color: #add8e6;">Ones</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">■ ■ ■</td> <td style="text-align: center;">  </td> <td style="text-align: center;">● ● ● ● ● ●</td> </tr> <tr> <td style="text-align: center;">■ ■ ■</td> <td style="text-align: center;">  </td> <td style="text-align: center;">● ● ● ● ● ●</td> </tr> <tr> <td style="text-align: center;">■ ■ ■</td> <td style="text-align: center;">  </td> <td style="text-align: center;">● ● ● ● ● ●</td> </tr> <tr> <td style="text-align: center;">■ ■ ■</td> <td style="text-align: center;">  </td> <td style="text-align: center;">● ● ● ● ● ●</td> </tr> </tbody> </table> <p style="font-size: small; margin-top: 5px;">It is important at this stage that they always multiply the ones first.</p> <p>The corresponding long multiplication is modelled alongside</p>	Hundreds	Tens	Ones	■ ■ ■		● ● ● ● ● ●	■ ■ ■		● ● ● ● ● ●	■ ■ ■		● ● ● ● ● ●	■ ■ ■		● ● ● ● ● ●	<p>The grid method may be used to show how this relates to a formal written method.</p>  <p>Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods.</p>	<table style="margin: 10px auto;"> <tr> <td style="padding: 5px;">x</td> <td style="padding: 5px;">300</td> <td style="padding: 5px;">20</td> <td style="padding: 5px;">7</td> </tr> <tr> <td style="padding: 5px;">4</td> <td style="padding: 5px;">1200</td> <td style="padding: 5px;">80</td> <td style="padding: 5px;">28</td> </tr> </table> <div style="text-align: right; margin-top: 10px;"> <math display="block">\begin{array}{r} 327 \\ \times 4 \\ \hline 28 \\ 80 \\ 1200 \\ \hline 1308 \end{array}</math> </div> <p style="font-size: small; margin-top: 10px;">This may lead to a compact method.</p> <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;">x</td> <td style="padding: 5px;">327</td> <td style="padding: 5px;">4</td> </tr> <tr> <td style="padding: 5px;">1308</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </table>	x	300	20	7	4	1200	80	28	x	327	4	1308		
Hundreds	Tens	Ones																														
■ ■ ■		● ● ● ● ● ●																														
■ ■ ■		● ● ● ● ● ●																														
■ ■ ■		● ● ● ● ● ●																														
■ ■ ■		● ● ● ● ● ●																														
x	300	20	7																													
4	1200	80	28																													
x	327	4																														
1308																																

# Chapel St Leonards Primary School Calculation Policy

Objective & Strategy	Concrete	Pictorial	Abstract				
<p>Divide at least 3 digit numbers by 1 digit.</p> <p>Short Division</p>	<p><math>96 \div 3</math></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Tens</td> <td style="text-align: center;">Units</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> </tr> </table>  <p>Use place value counters to divide using the bus stop method alongside</p>  <p style="text-align: right; font-size: small;">Calculations <math>42 \div 3 =</math></p> <p><math>42 \div 3 =</math></p> <p>Start with the biggest place value, we are sharing 40 into three groups. We can put 1 ten in each group and we have 1 ten left over.</p>   <p>We exchange this ten for ten ones and then share the ones equally among the groups.</p>  <p>We look how much in 1 group so the answer is 14.</p>	Tens	Units	3	2	<p>Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups.</p>  <p>Encourage them to move towards counting in multiples to divide more efficiently.</p>	<p>Begin with divisions that divide equally with no remainder.</p> $\begin{array}{r} 218 \\ 3 \overline{) 872} \end{array}$ <p>Move onto divisions with a remainder.</p> $\begin{array}{r} 86 \text{ r } 2 \\ 3 \overline{) 432} \end{array}$ <p>Finally move into decimal places to divide the total accurately.</p> $\begin{array}{r} 14.6 \\ 35 \overline{) 511.0} \end{array}$ $\begin{array}{r} 0663 \text{ r } 5 \\ 8 \overline{) 5309} \end{array}$
Tens	Units						
3	2						

Y4-6

DIVISION

÷