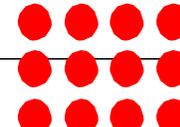
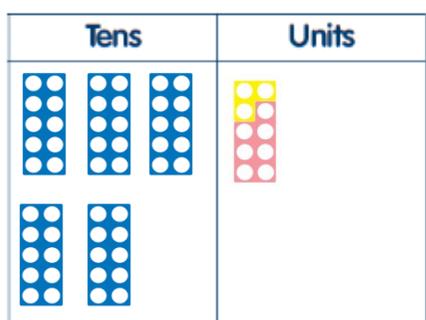
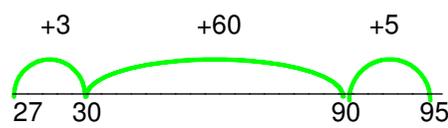
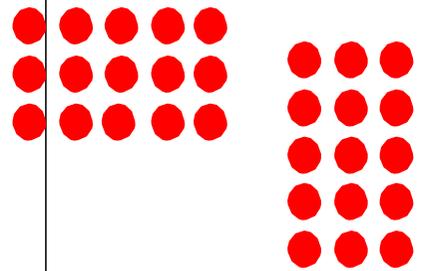


The Devonshire Hill PRIMARY SCHOOL – CALCULATION POLICY - YEAR 3

Children have access to a wide range of practical resources focusing on Numicon, number squares and horizontal number lines to help them work out calculations and worded problems.

ADDITION	SUBTRACTION	MULTIPLICATION	DIVISION										
<p><u>Partition into tens and ones and recombine</u> Partition both numbers and recombine. eg $37 + 23 = 60$ $7 + 3 = 10$ $30 + 20 = 50$ 60</p>	<p><u>Adjusting</u> Children are given strategies to subtract a 'near multiple of 10' to or from a two digit number. eg: $67 - 29$ is the same as $67 - 30 + 1$</p>	<p><u>Arrays and repeated addition</u> Children to use arrays to help them visually understand how multiplication works. e.g. $3 \times 4 =$</p> 	<p><u>Inverse</u> Children use their knowledge of their times tables and corresponding division facts to divide two digit numbers. e.g. $12 \div 3$ can be modelled as: How many 3s are there in 12? $12 \div 3 = 4$ as $3 \times 4 = 12$ $12 \div 4 = 3$ as $4 \times 3 = 12$</p>										
	<p><u>Number line</u> Children use the number line to subtract. Start with the smaller number, count up to the next multiple of 10; then continue. e.g. $95 - 27 =$ $3 + 60 + 5 = 68$</p> 	<p>Arrays are also used to show that the order of the numbers does not matter. e.g. $3 \times 5 =$ is the same as $5 \times 3 =$</p> 	<p><u>Chunking</u> Children use their knowledge of their times tables to subtract chunks of their divisor from their dividend. e.g. $51 \div 3 = 17$</p> $\begin{array}{r} 51 \\ \underline{30} - (10 \times 3) \\ 21 \\ \underline{21} - (7 \times 3) \\ 00 \end{array}$										
<p><u>Adjusting</u> Children are given strategies to add a near multiple of 10 to any two digit number resources should be used to support e.g. $35 + 19$ is the same as $35 + 20 - 1$</p> <p><u>Column method, initially expanded column method (up to three digit numbers)</u> e.g. $89 + 42 = 131$</p> $\begin{array}{r} 89 \\ \underline{42} + \\ 11 \\ \underline{120} \\ 131 \end{array}$	<p><u>Column method</u> The children are introduced to vertical & horizontal expansion to help them record & work out a subtraction of two digit and three digit numbers. e.g. $83 - 42 = 41$</p> <table border="0" style="width: 100%;"> <tr> <td style="text-align: center;">Vertical</td> <td style="text-align: center;">Horizontal</td> </tr> <tr> <td style="text-align: center;">$\begin{array}{r} 83 \\ - 42 \\ \hline 41 \end{array}$</td> <td style="text-align: center;">$\begin{array}{r} 80 + 3 \\ - 40 + 2 \\ \hline 40 + 1 \end{array}$</td> </tr> </table> <p><u>Column method using regrouping</u> Children are then introduced to subtraction calculations where they are required to take one group of a place value and re-group it with another. e.g. $83 - 28 =$</p> $\begin{array}{r} 78 \overset{1}{3} \\ \underline{28} - \\ 55 \end{array}$ <p>Children find a small difference by counting on or back.</p>	Vertical	Horizontal	$\begin{array}{r} 83 \\ - 42 \\ \hline 41 \end{array}$	$\begin{array}{r} 80 + 3 \\ - 40 + 2 \\ \hline 40 + 1 \end{array}$	<p>Children understand multiplication as repeated addition. e.g. $4 \times 4 = 16$ $4 + 4 + 4 + 4 = 16$</p>  <p><u>Grid method</u> Children can double multiples of 5 up to 50 using partitioning. e.g. $35 \times 2 = 70$</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>x</td> <td>30</td> <td>2</td> </tr> <tr> <td>3</td> <td>90</td> <td>6</td> </tr> </table> <p>An effective way to teach times tables is using the times tables songs available on the school's website. Children should spend five minutes daily practicing their times tables.</p>	x	30	2	3	90	6	<p>$10 + 7 = 17$</p>
Vertical	Horizontal												
$\begin{array}{r} 83 \\ - 42 \\ \hline 41 \end{array}$	$\begin{array}{r} 80 + 3 \\ - 40 + 2 \\ \hline 40 + 1 \end{array}$												
x	30	2											
3	90	6											

