


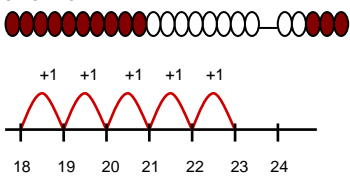
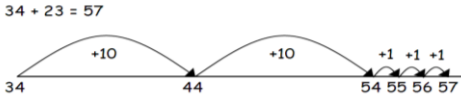

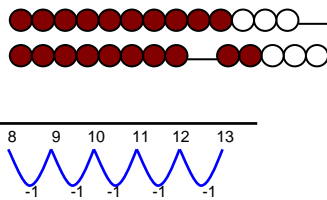
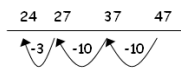
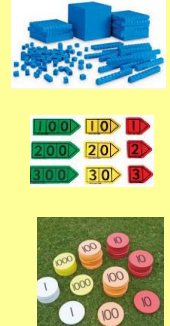


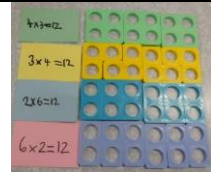
# Calculation Policy

<p>Progression In Addition</p>	<p>Manipulatives</p>	<p>Progression in Subtraction</p>																																				
<p><b>Symbols/Pictures</b></p> <p>8 people are on the bus. 5 more get on at the next stop. How many people are on the bus now?</p>  <p>[Might be recorded as: <math>8 + 5 = 13</math>]</p> <p><math>2 + 5 = 7</math></p>	<p>Counters Number lines Numicon</p> 	<p><b>Symbols and Pictures</b></p> <p>Mum baked 9 biscuits. I ate 5. How many were left?</p>  <p>Might be recorded as: <math>9 - 5 = 4</math></p> <p><math>13 - 8 = 5</math></p>																																				
<p><b>Number track / Number line and Beads</b></p> <p><math>18 + 5 = 23</math></p>  <p><math>34 + 23 = 57</math></p> 	<p>Counters Number lines Numicon Bead String Dienes</p> 	<p><b>Number track / Number line and Beads</b></p> <p><math>13 - 5 = 8</math></p>  <p><math>47 - 23 = 24</math></p> 																																				
<p><b>Column Addition</b> Expand to include decimals</p> <p>Use the language of carrying</p> <table style="width: 100%; text-align: center;"> <tr> <td><math>12</math></td> <td><math>18</math></td> <td><math>43</math></td> <td><math>74</math></td> </tr> <tr> <td><math>+25</math></td> <td><math>+25</math></td> <td><math>+91</math></td> <td><math>+67</math></td> </tr> <tr> <td>----</td> <td>----</td> <td>----</td> <td>----</td> </tr> <tr> <td><math>37</math></td> <td><math>43</math></td> <td><math>134</math></td> <td><math>141</math></td> </tr> <tr> <td></td> <td>1</td> <td>1</td> <td>1 1</td> </tr> </table>	$12$	$18$	$43$	$74$	$+25$	$+25$	$+91$	$+67$	----	----	----	----	$37$	$43$	$134$	$141$		1	1	1 1	<p>Dienes Place Value Counters Place Value Cards</p> 	<p><b>Column Subtraction</b> Expand to include decimals</p> <p>Use the language of exchanging</p> <table style="width: 100%; text-align: center;"> <tr> <td><math>38</math></td> <td><math>5</math> <del>13</del></td> <td><math>4</math> <math>11</math> <del>13</del></td> <td><math>7</math> <math>9</math> <del>10</del></td> </tr> <tr> <td><math>-12</math></td> <td><math>-15</math></td> <td><math>-59</math></td> <td><math>-43</math></td> </tr> <tr> <td>----</td> <td>----</td> <td>-----</td> <td>-----</td> </tr> <tr> <td><math>26</math></td> <td><math>48</math></td> <td><math>464</math></td> <td><math>757</math></td> </tr> </table>	$38$	$5$ <del>13</del>	$4$ $11$ <del>13</del>	$7$ $9$ <del>10</del>	$-12$	$-15$	$-59$	$-43$	----	----	-----	-----	$26$	$48$	$464$	$757$
$12$	$18$	$43$	$74$																																			
$+25$	$+25$	$+91$	$+67$																																			
----	----	----	----																																			
$37$	$43$	$134$	$141$																																			
	1	1	1 1																																			
$38$	$5$ <del>13</del>	$4$ $11$ <del>13</del>	$7$ $9$ <del>10</del>																																			
$-12$	$-15$	$-59$	$-43$																																			
----	----	-----	-----																																			
$26$	$48$	$464$	$757$																																			

Progression In Multiplication

Symbols/pictures/objects

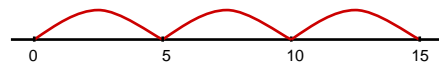
3 plates, 2 cakes on each plate:



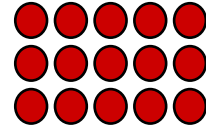
Arrays 5 x 3 or 3 x 5

Repeated addition  
Number lines

5 x 3 or 3 x 5



[ref Multiplication facts ITP]



Manipulatives

Counters  
Number lines  
Numicon



Counters  
Number lines  
Numicon  
Bead String  
Dienes



Progression in Division

Symbols/pictures/objects

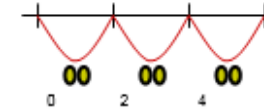
6 cakes shared between 3 plates:



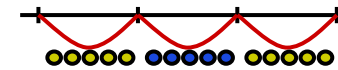
Repeated subtraction

Number lines

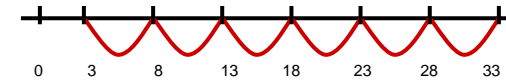
6 - 2 = 3



15 ÷ 5



33 ÷ 5 = 6 r3



Short method  
Expand to include decimals

Grid

43 x 6

x	6
3	18
40	240
	258

Expanded

$$\begin{array}{r} 43 \\ 6 \times \\ \hline 18 \\ 240 \\ \hline 258 \end{array}$$

Compact

$$\begin{array}{r} 43 \\ 6 \times \\ \hline 258 \\ \hline 1 \end{array}$$

Dienes  
Place Value Counters



Short method  
Expand to include decimals

Expanded

$$\begin{array}{r} 12 \\ 3 \overline{) 36} \\ \underline{30} \\ 6 \\ 6 \\ \hline 0 \end{array}$$

Compact

$$\begin{array}{r} 12 \\ 3 \overline{) 36} \\ \underline{36} \\ 0 \end{array}$$

$$\begin{array}{r} 153 \\ 6 \overline{) 918} \\ \underline{6} \phantom{0} \\ 31 \phantom{0} \\ \underline{30} \phantom{0} \\ 18 \\ \underline{18} \\ 0 \end{array}$$

Long method  
Expand to include decimals  
Expanded

$$\begin{array}{r} 32 \\ 24 \times \\ \hline 8 \\ 120 \\ 40 \\ 600 \\ \hline 768 \end{array}$$

Compact

$$\begin{array}{r} 32 \\ 24 \times \\ \hline 128 \\ 640 \\ \hline 768 \end{array}$$

Dienes  
Place Value Counters



Long Method  
Expand to include decimals  
Use the language of exchanging

Expanded

$$\begin{array}{r} 23 \text{ r}3 \text{ or } 23.12 \\ 25 \overline{) 578} \\ \underline{500} \\ 78 \\ 75 \\ \hline 3 \end{array}$$

Compact

$$\begin{array}{r} 23 \text{ r}3 \text{ or } 23.12 \\ 25 \overline{) 578} \\ \underline{575} \\ 3 \end{array}$$

