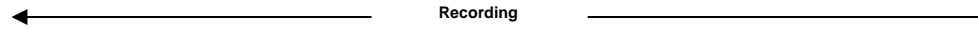


Division



Rapid Recall





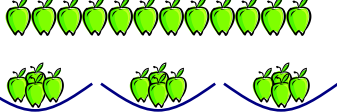
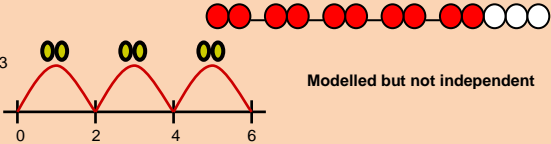
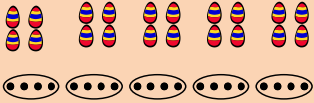
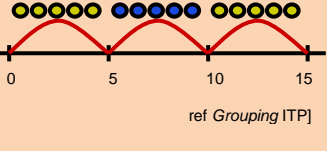
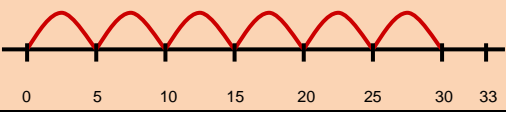
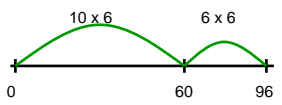
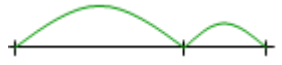
Mental calculation

Resources

Method(s) highlighted indicate end of year expectation for year group

Age-related expectations

Estimate first

<p>YR</p>	<p>Share objects into equal groups and count how many in each group</p> <p>ref: <i>Overview of learning 10</i></p>	<p>NB. Make sure the Language matches the image.</p>	<p>Pictures / Objects</p> <p>6 cakes shared between 2 </p> <p>6 cakes put into groups of 2 </p>	<p>Symbols</p> <p>6 cakes shared between 2 </p> <p>6 cakes put into groups of 2  Include Remainders</p>	<p>(see recording)</p>	<p>Beadstrings Pegboards Numicon</p>															
<p>Y1</p>	<p>Solve (practical) problems that involve sharing and grouping, including remainders.</p>	<p>Pictures / Symbols</p> <p>How many apples in each bowl if I share 12 apples between 3 bowls?</p> 	<p>Number tracks / Number line (modelled using bead strings)</p> <p>$8 \div 2 = 4$</p>  <p>$6 \div 2 = 3$</p> <p>Modelled but not independent</p>	<p>Derive and recall halves of numbers to ten, link to dividing by 2</p> <p>Begin to learn multiplication and division facts for 2, 5 and 10 x table.</p>	<p>(see recording)</p>																
<p>Y2</p>	<p>Division as sharing and grouping (including remainders)</p> <p>$TU \div U$</p> <p>Secure dividing by 2, 5 and 10.</p>	<p>Pictures / Symbols</p> <p>Four eggs fit in a box. How many boxes would you need to pack 20 eggs?</p> 	<p>Number lines / Arrays</p> <p>$15 \div 5$</p>  <p>ref <i>Grouping ITP</i></p>	<p>Derive / recall \div facts for 2, 5 and 10 tables</p> <p>Derive / recall halves of even numbers to 40</p>	<p>$TU \div 2$</p>																
<p>Y3</p>	<p>Record, support and explain:</p> <p>$TU \div U$ (eg $98 \div 6$)</p>	<p>Number lines (start from zero)</p> <p>$33 \div 5 = 6 \text{ r}3$</p> 	<p>Explore links and differences between sharing and grouping.</p>	<p>Derive / recall \div facts for 3, 4, and 8 times tables</p>	<p>$TU / HTU \div 2$</p>																
<p>Y4</p>	<p>$TU \div U$ (where divisor is 2, 3, 4, 5, 6 or 10)</p> <p>Round remainders up / down, depending on the context</p>	<p>Number lines (start from zero)</p> <p>$96 \div 6 = 16$</p> 	<p>Partitioning (multiples of the divisor)</p> <p>$67 \div 4 = 16 \text{ r}3$</p> <p>$10 \times 4 = 40$ $6 \times 4 = 24$ (64)</p>	<p>Derive / recall \div facts up to the 12 times table</p>	<p>Numbers up to $1000 \div 10 / 100$ (whole number answers and understand the effect)</p> <p>Halves of TU / HTU numbers and multiples of $10 / 100$</p>																
<p>Y5</p>	<p>Refine and use efficient methods:</p> <p>$HTU \div U$</p>	<p>$346 \div 8$</p> <p>Support with multiples of ten, e.g.</p> <p>80 160 240 320</p>  <p>320 344</p> <p>NB. Play Chunky from Bare Necessities.</p>	<p>St Katharine's Chunking Method</p> <p>$165 \div 6 = 27 \text{ r}3$</p> <table border="1" data-bbox="884 1220 1108 1396"> <tr><td>165</td><td>X</td></tr> <tr><td>-120</td><td>20 X</td></tr> <tr><td>45</td><td></td></tr> <tr><td>-30</td><td>5 X</td></tr> <tr><td>15</td><td></td></tr> <tr><td>12</td><td>2 X</td></tr> <tr><td>3</td><td></td></tr> </table> <p>Facts $5 \times 6 = 30$ $10 \times 6 = 60$ $20 \times 6 = 120$</p>	165	X	-120	20 X	45		-30	5 X	15		12	2 X	3		<p>Short division</p> <p>14</p> <p>$7 \overline{) 98}$</p> <p>2</p> <p>98</p> <p>Chunking for all division including $TU \div U$ is taught first – when this is secure short division is introduced</p>	<p>Derive / recall \div facts up to the 12 times table</p>	<p>Divide using factors of the divisor (eg $\div 8$ by $\div 2$ and $\div 4$)</p> <p>Divide numbers by $10 / 100 / 1000$ (describe the effect)</p> <p>Halves of $U.t / 0.th$</p>	
165	X																				
-120	20 X																				
45																					
-30	5 X																				
15																					
12	2 X																				
3																					

<p>Y6</p>	<p>Use efficient methods: Integer ÷ U (eg 123 ÷ 7) Decimal ÷ U (eg 27.6 ÷ 8) HTU ÷ TU</p>	<p>St Katharine's Chunking Method</p> $555 \div 24 = 23 \text{ r } 3$ <table style="border-collapse: collapse; margin-left: 20px;"> <tr> <td style="border-right: 1px solid black; padding-right: 10px;"> $\begin{array}{r} 555 \\ -480 \\ \hline 75 \\ -72 \\ \hline 3 \end{array}$ </td> <td style="border-right: 1px solid black; padding-right: 10px;"> <p>X</p> <p>20 X</p> <p>3 X</p> </td> <td style="padding-left: 10px;"> <p>Facts</p> <p>5 x 24 = 120</p> <p>10 x 24 = 240</p> <p>20 x 24 = 480</p> </td> </tr> </table>	$\begin{array}{r} 555 \\ -480 \\ \hline 75 \\ -72 \\ \hline 3 \end{array}$	<p>X</p> <p>20 X</p> <p>3 X</p>	<p>Facts</p> <p>5 x 24 = 120</p> <p>10 x 24 = 240</p> <p>20 x 24 = 480</p>	<p>Once children are very secure with chunking and have a strong grasp of multiplication facts</p> <p>Long division with remainder</p> $555 \div 24 = 23 \text{ r } 3$ $\begin{array}{r} 23 \\ 15 \overline{) 432} \\ \underline{48} \\ 75 \\ \underline{72} \\ 3 \end{array}$	<p>Long division remainder as a decimal</p> $555 \div 24 = 23.12$ $\begin{array}{r} 23.12 \\ 15 \overline{) 432.00} \\ \underline{48} \\ 75 \\ \underline{72} \\ 30 \\ \underline{30} \\ 0 \end{array}$	<p>Short division (remainders to decimals)</p> $985 \div 7 = 140 \text{ r } 5$ $7 \overline{) 985.00}$ <p>140.71</p> <p>Chunking for all division including TU÷ U is taught first – when this is secure short division is introduced</p>	<p>Divide using factors of the divisor (eg ÷15 by ÷5 and ÷3)</p> <p>TU ÷ U U.t ÷ U</p> <p>Integer ÷ 1000 / 100 / 10</p>	
	$\begin{array}{r} 555 \\ -480 \\ \hline 75 \\ -72 \\ \hline 3 \end{array}$	<p>X</p> <p>20 X</p> <p>3 X</p>	<p>Facts</p> <p>5 x 24 = 120</p> <p>10 x 24 = 240</p> <p>20 x 24 = 480</p>							
<p>Divide a fraction by a whole number using knowledge of numbers and number facts. i.e.</p> $\frac{1}{4} \div 2 = \frac{1}{8}$	<p>Use the KFC method (Keep, Flip, Change) to divide trickier fractions by a whole number.</p> $\frac{3}{4} \div 5 =$ <p>1: Make the whole a top heavy fraction.</p> $\frac{3}{4} \div \frac{5}{1} =$ <p>2: Keep the first fraction the same and flip the other over.</p> $\frac{3}{4} \times \frac{1}{5} =$ <p>3. Change the ÷ sign to a multiplication sign and work it out using our multiplication method.</p> $\frac{3}{4} \times \frac{1}{5} = \frac{3}{20}$									

