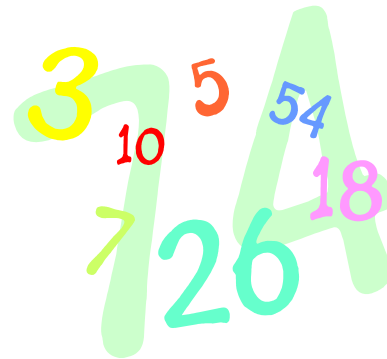


Kings Caple Primary Academy

Calculations Policy July 2017 Review date: July 2018




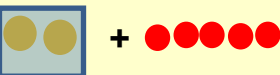


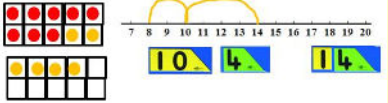
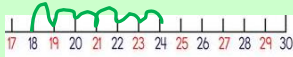
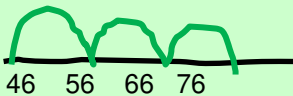

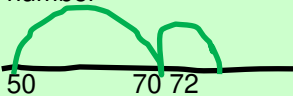
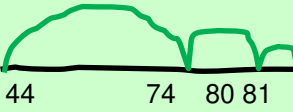

Kings Caple Primary Academy is committed to the lively and engaging delivery of mathematics across the age ranges and curriculum. For children to access the majority of their learning in Mathematics, a strong and confident grasp of the four number operations is important; for formal and informal written methods and mental strategies. Kings Caple teaches children to develop their ability to use number, calculate, reason and solve problems.

The ultimate decision to move a child onto a new method of calculation within this policy lies with the teacher and rests on the pupil feeling confident and secure with the method they currently rely upon.

Ongoing practice:

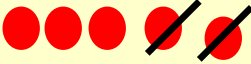
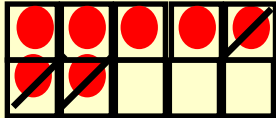
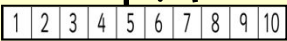
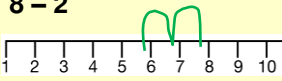
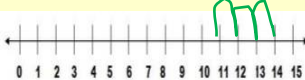
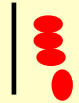
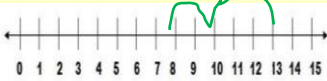
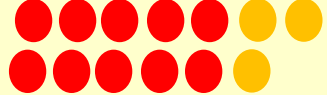

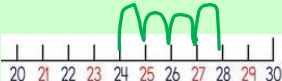
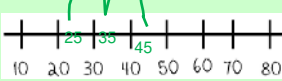
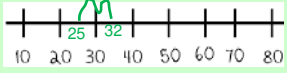
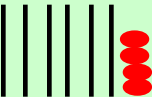
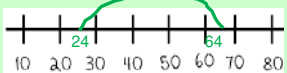
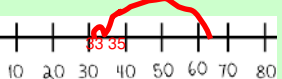
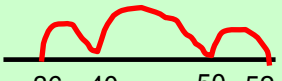

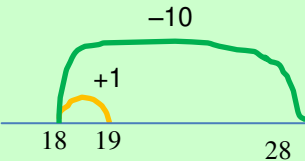
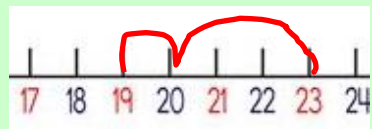
- Children should estimate before calculating an answer.
- Children should be given the opportunities to determine if a calculation can be done in their head or using a written method.
- Children should check their answer (e.g. by using the inverse operation).
- Children should practice their multiplication facts until they know them off by heart.
- Teachers should teach to the age related expectations for each year group.
- Teacher should develop the ability to solve problems through decision-making and reasoning in a range of contexts
- Teachers should ensure children are using the correct methods of written calculation for their age and year group.
- Teachers should use models and images to support the learning of written and mental methods of calculation.
- Teachers should use Tara Maths to support their teaching
- Maths Basic Skills should be taught daily.

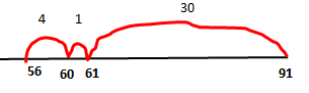

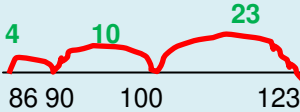

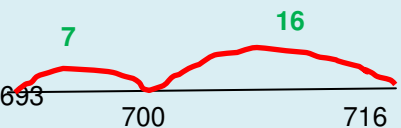

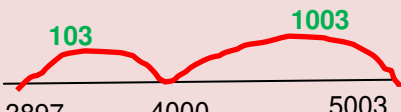
This is a working document and should be referred to regularly to ensure we are all working consistently to build on children's progress.

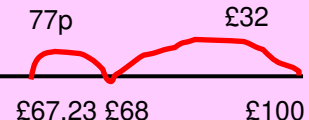
<p>EYFS to Year 1</p> <p>Add and subtract one-digit and two-digit numbers to 20, including zero</p>	<p>$2 + 5 =$</p>  <p>Count out each set then find the total</p>	<p>$2 + 5 =$</p>  <p>Count on from first number (Cover first number or display as numeral)</p>	<p>$2 + 5$ Leading to</p> <p>$5 +$ </p> <p>$5 + 2$ (without counters)</p> <p>Recognise the biggest number in the calculation and count on from it (using objects for smaller number if necessary)</p>	<p>$2 + 5$ $5 + 8$ $4 + 13$ $11 + 7$</p>  <p>Recognise the biggest number in the calculation and count on from it mentally or using number line</p>	<p>$6 + 8$ becomes $8 + 2 + 4$</p>  <p>Partitioning the smaller number and use the tens number to bridge calculation</p> <p>$5 + 17$ becomes $17 + 3 + 2$</p>
<p>Year 2</p> <p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> a two-digit number and ones a two-digit number and tens two two-digit numbers adding three one-digit numbers 	<p>$6 + 18$ By counting on from the largest number</p>  <p>$30 + 46$ By counting on in tens</p> 	<p>$6 + 58$ By partitioning the smaller number through the multiple of 10</p> <p>$58 + 2 + 4$</p>  <p>$22 + 50$ By counting in groups of ten and one from largest number</p> 	<p>TU + TU within 100</p> <p>$37 + 44$</p>  <p>44 74 80 81</p> <p>or</p> <p>$40 + 30 = 70$ $7 + 4 = 11$ $70 + 11 = 81$</p> <p>Or</p> <p>$44 + 40 - 3 = 81$</p> <p>Recall of facts to 20 and by recall of adding multiples of 10 will support this thinking</p>	<p>Addition of three single digits – look for bonds you know and doubles</p> <p>$6 + 9 + 3$ $6 + 3 = 9$ Double 9 = 18</p>	<p>Special cases + 9</p> <p>$9 + 33$</p>  <p>33 42 43</p> <p>Using Doubles $29 + 30$ is the same as $30 + 30 - 1$</p>

<p>Year 3</p> <p>Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> a three-digit number and ones a three-digit number and tens a three-digit number and hundreds <p>Two 2-digit numbers across 100 (non-statutory guidance)</p> <p>Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</p>	<p>Partitioning the numbers for TU + TU across 100</p> <p>55 + 78 $70 + 50 = 120$ $8 + 5 = 13$ $120 + 13 = 133$</p> <p>55 + 78 $78 + 50 = 128$ $128 + 2 + 3 = 133$</p> <p>Recall of facts to 20 and by adding multiples of 10 will support this thinking</p>	<p>Special cases</p> <p>66 + 79 $80 + 66 - 1 = 145$</p> <p>Using doubles</p> <p>76 + 78 Double 70 + double 6 + 2 Double 70 + double 8 - 2</p> <p>Recall of facts to 20 and by adding multiples of 10 will support this thinking</p>	<p>Partitioning Adding ones and tens to a 3digit number</p> <p>356 + 8 $356 + 4 + 4 = 364$</p> <p>356 + 70 $350 + 70 + 6 = 420$</p> <p>356 + 600 $300 + 600 + 56 = 956$</p>	<p>Addition of three digit + 2 digit numbers and 3-digit + 3 digit</p> $\begin{array}{r} 268 \\ + 79 \\ \hline 200 \\ + 130 \\ + 17 \\ \hline 347 \end{array}$ $\begin{array}{r} 268 \\ + 179 \\ \hline 17 \\ + 130 \\ + 300 \\ \hline 447 \end{array}$	<p>Addition of numbers with decimal places</p> <p>1.5 + 1.5 Double 1 and double 0.5</p> <p>1.6 + 1.7 $1.7 + 0.3 + 1.3 = 3.3$</p>
<p>Year 4</p> <p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</p>	<p>Using mental strategy where appropriate</p> <p>1460 + 499 $1460 + 500 - 1 = 1959$</p> <p>2560 + 3570 $6000 + 130 = 6130$</p>	<p>Addition of three digit + 3-digit and four digit + four digit</p> $\begin{array}{r} 576 \\ + 369 \\ \hline 945 \\ \hline \end{array}$ $\begin{array}{r} 7268 \\ + 5179 \\ \hline 12447 \\ \hline \end{array}$	<p>Addition of numbers to 2 decimal places</p> $\begin{array}{r} 4.45 \\ + 3.55 \\ \hline 8.00 \\ \hline \end{array}$ $\begin{array}{r} 57.89 \\ + 46.67 \\ \hline 104.56 \\ \hline \end{array}$		

<p>Year 5</p> <p>Add and subtract numbers mentally with increasingly large numbers eg 5-digit – 4-digit multiple of 10</p> <p>Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p>	<p>Using mental calculation by counting on</p> <p>45678 + 3500 = 49178 45678 + 3000 = 48678 42678 + 500 = 49178</p> <p>5.78 + 2.45 = 8.23 5.78 + 2 = 7.78 5.73 + 0.4 = 8.18 5.33 + 0.05 = 8.23</p>	<p>Column addition</p> $\begin{array}{r} 5\ 8\ 7\ 6\ 5 \\ 2\ 9\ 6\ 4\ 8 \\ 8\ 8\ 4\ 1\ 3 \\ \hline \end{array} +$	<p>Mixed decimals</p> <p>57.89 + 46.6 + 23.785</p> $\begin{array}{r} 23.785 \\ 57.89 \\ 46.6 \\ \hline 128.275 \\ \hline \end{array}$		
<p>Year 6</p> <p>Perform mental calculations, including with mixed operations and large numbers</p>	<p>Partitioning</p> <p>4.578 + 0.008 = 4.586 6.568 + 0.079 = 6.647 6.568 + 0.07 = 6.638 6.638 + 0.009 = 6.647</p>	<p>Column addition with 5 or 6 digits</p> $\begin{array}{r} 5\ 8\ 7\ 6\ 5 \\ 2\ 9\ 6\ 4\ 8 \\ 8\ 8\ 4\ 1\ 3 \\ \hline \end{array} +$	<p>Using all 4 operations</p> <p>6 + 7 × 8 = 62 because multiplication first then addition when there are no brackets</p> <p>2780 – 910 + 1220 can be reordered to 2780 + 1220 – 910 = 3090 as long as the symbol moves with the number</p>		

<p>EYFS to Year 1</p> <p>Add and subtract one-digit and two-digit numbers to 20, including zero</p>	<p>5 - 2</p> <p>Count out 5 and remove 2 to find the answer</p>  <p>7 - 3</p> <p>Using a 10 frame to subtract - The children may subitise how many are remaining without having to count them all.</p> 	<p>7 - 2</p> <p>Count back on the number line by saying start on 7, count back 1,2, what number are you on?</p> 	<p>8 - 2</p>  <p>14 - 3</p>  <p>Count backwards mentally or using a number line.</p>	<p>15 - 5</p> <p>Use tens and ones when the calculation doesn't bridge 10</p>  <p>13 - 5</p>  <p>becomes 13 - 3 - 2</p> <p>Partitioning the number being subtracted through the multiple of 10 mentally or using a number line</p>	<p>Difference</p> <p>7 - 6 or find the difference between 7 and 6</p>  
<p>Year 2</p> <p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> a two-digit number and ones a two-digit number and tens two two-digit numbers adding three one-digit numbers 	<p>Subtracting by counting backwards in tens or ones</p> <p>28 - 4</p>  <p>45 - 20</p> <p>Use tens and ones when the calculation doesn't bridge 10</p>  <p>Partitioning</p> <p>$28 - 8 = 20$ $76 - 70 = 6$</p>	<p>Subtracting in groups of ten (rather than counting in tens) or groups of ones (by partitioning number being subtracted through multiple of 10)</p> <p>32 - 7 32 - 2 - 5</p>  <p>64 - 40</p> <p>Use a number line or manipulatives</p>  	<p>65 - 32</p>  <p>52 - 16</p> <p>This calculation bridges through 10 so we need to partition the 16 into 2/4/10 or 12/4 and subtract</p>  	<p>Special cases</p> <p>When subtracting 9 or 19</p> <p>28 - 9</p>  <p>Or $28 - 10 + 1$</p>	<p>Difference</p> <p>23 - 19</p>  <p>When numbers are close together, count on from the smallest number through the multiple of ten or count back from the largest to the smallest through the multiple of ten.</p>

<p>Year 3</p> <p>Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> a three-digit number and ones a three-digit number and tens a three-digit number and hundreds <p>Two 2-digit numbers across 100 (non-statutory guidance)</p> <p>Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</p>	<p>Partitioning Subtracting ones and tens from a 3digit number</p> <p>$567 - 60 = 507$ $745 - 700 = 45$ $832 - 2 = 830$</p> <p>364 - 8 $364 - 4 - 4 = 356$</p> <p>356 - 70 $356 - 50 - 20 = 286$</p> <p>956 - 600 $956 - 600 = 356$</p>	<p>TU - TU By counting back in tens and ones</p> <p>91 - 35 $91 - 30 - 1 - 4$</p>  <p>Special cases</p> <p>$93 - 39$ as $93 - 40 + 1$</p> 	<p>Subtraction up to three digits</p> <p>$123 - 86 = 37$</p>  <p>£5.67 - £2.20</p> <p>$£5.67 - £2.00 = £3.67$ $£3.67 - 20p = £3.47$</p>	<p>Expanded column subtraction</p> <p>$347 - 165 = 182$</p> <table style="margin-left: 20px;"> <tr><td>200</td><td>140</td><td>7</td></tr> <tr><td>300</td><td>40</td><td>7</td></tr> <tr><td>100</td><td>60</td><td>5</td></tr> <tr><td>100</td><td>80</td><td>2</td></tr> </table> <p>$436 - 177 = 259$</p> <table style="margin-left: 20px;"> <tr><td>300</td><td>120</td><td>16</td></tr> <tr><td>400</td><td>20</td><td>7</td></tr> <tr><td>100</td><td>70</td><td>7</td></tr> <tr><td>200</td><td>50</td><td>9</td></tr> </table>	200	140	7	300	40	7	100	60	5	100	80	2	300	120	16	400	20	7	100	70	7	200	50	9	<p>Difference (see also subtraction up to three digits)</p> <p>$103 - 87 = 16$</p> <p>When numbers are close together, count on from the smallest number through the multiple of ten or count back from the largest to the smallest through the multiple of ten.</p>  <p>$716 - 693 = 23$</p> 
200	140	7																											
300	40	7																											
100	60	5																											
100	80	2																											
300	120	16																											
400	20	7																											
100	70	7																											
200	50	9																											
<p>Year 4</p> <p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</p>	<p>Partitioning</p> <p>$1678 - 600 = 1078$ $2689 - 80 = 2609$ $6839 - 9 = 6830$ $7484 - 1100 = 6384$</p>	<p>Using mental calculation when appropriate by counting back</p> <p>$5678 - 2342 =$ $5678 - 2000 = 3678$ $3678 - 300 = 3378$ $3378 - 40 = 3338$ $3338 - 2 = 3336$</p> <p>See difference too</p>	<p>Subtraction up to four digits</p> <p>$£50 - £28.25 = £21.75$</p> 	<p>Expanded column subtraction</p> <p>With three digit numbers asY3 and 4-digit numbers</p> <p>$3326 - 2678 = 658$</p> <table style="margin-left: 20px;"> <tr><td>2000</td><td>1200</td><td>120</td><td>16</td></tr> <tr><td>3000</td><td>300</td><td>20</td><td>6</td></tr> <tr><td>2000</td><td>600</td><td>70</td><td>8</td></tr> <tr><td></td><td>600</td><td>50</td><td>8</td></tr> </table> <p>Moving to compact decomposition as Year 5</p>	2000	1200	120	16	3000	300	20	6	2000	600	70	8		600	50	8	<p>Difference</p> <p>$5003 - 3897 = 1106$</p> 								
2000	1200	120	16																										
3000	300	20	6																										
2000	600	70	8																										
	600	50	8																										

<p>Year 5</p> <p>Add and subtract numbers mentally with increasingly large numbers eg 5-digit – 4-digit multiple of 10</p> <p>Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p>	<p>Partitioning</p> <p>$6.76 - 0.06 = 6.7$ $7.47 - 0.4 = 7.07$</p>	<p>Using mental calculation by counting back</p> <p>$45678 - 3500 = 42178$ $45678 - 3000 = 42678$ $42678 - 500 = 42178$</p> <p>$5.78 - 2.45 = 3.33$ $5.78 - 0.05 = 5.73$ $5.73 - 0.4 = 5.33$ $5.33 - 2 = 3.33$</p>	<p>Difference Use bonds to 100 to support</p> <p>$£10 - £7.71 = £2.29$ Use a number line or jottings</p> <p>$£7.71 \quad £8.00 = 29p$ $£8.00 \rightarrow £10.00 = £2$</p> <p>$7 - 2.45 = 4.55$</p> <p>$2.45 \rightarrow 3 = 0.55$ $3 \rightarrow 7 = 4$</p>	<p>Column subtraction</p> $\begin{array}{r} \cancel{2}^1 \cancel{8}^5 \cancel{7}^1 \cancel{5}^1 \\ \underline{19248} \\ 19517 \end{array}$	
<p>Year 6</p> <p>Perform mental calculations, including with mixed operations and large numbers</p>	<p>Partitioning</p> <p>$4.578 - 0.008 = 4.57$ $6.378 - 0.07 = 6.308$</p>	<p>Difference using larger numbers and number facts</p> <p>$£100 - 67.23 = £32.77$</p>  <p>$£67.23 \quad £68 \quad £100$</p>	<p>Difference (use mixed decimals)</p> <p>$6.45 - 1.7 = 4.75$</p> <p>$1.7 \rightarrow 2 = 0.3$ $2 \rightarrow 6.45 = 4.45$</p>	<p>As above with 5 or 6 digits</p>	

Year 1
Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

Count in multiples of twos, fives and tens

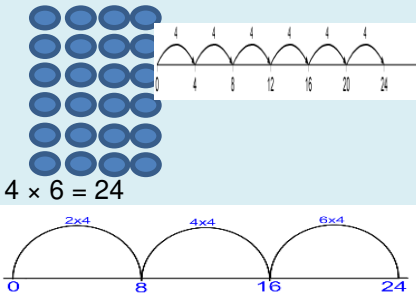
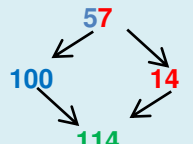


There are two apples on one plate.
How many apples on 3 plates?

Year 2
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs

Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers

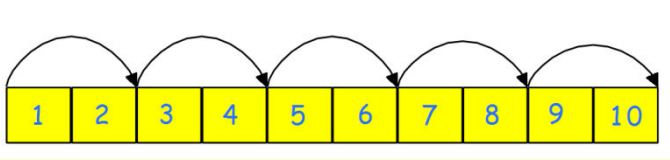
Recall and Derive doubles
 $7 + 7 = 14$
 $7 \times 2 = 14$

Recall and derive doubles

<p>Year 3</p> <p>Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods</p>	<p>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p> <p>Multiply single digits by 20,30,40,50 and 80</p>	 <p>$4 \times 6 = 24$</p> <p>Use arrays and number lines to count in multiples</p>	<p>Using partitioning to multiply</p> <p>$57 \times 2 = 114$ $50 \times 2 = 100$ $7 \times 2 = 14$ $100 + 14 = 114$</p> 	<p>Scaling Making a 5cm line 4 times longer</p> <p>$5\text{cm} \times 4 = 20\text{cm}$</p> 	<p>$48 \times 3 = 144$ (Partitioning)</p> <table border="1" data-bbox="1680 215 2016 383"> <tr> <td>\times</td> <td>40</td> <td>8</td> </tr> <tr> <td>3</td> <td>120</td> <td>24</td> </tr> </table> <p>$120 + 24 = 144$</p> <p>$4 \times 10 \times 3$ or $4 \times 3 \times 10$</p>	\times	40	8	3	120	24																			
\times	40	8																												
3	120	24																												
<p>Year 4</p> <p>Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers</p> <p>Multiply and divide two-digit and three-digit numbers by a one-digit number using formal written layout</p>	<p>Recall multiplication and division facts for multiplication tables up to 12×12 (facts for 6,7,9,11,12 are new)</p> <p>Multiply single digits by 60,70, and 90</p>	<p>Mental</p> <p>Multiplying by 10 and 100 Eg. 24×100</p> <table border="1" data-bbox="560 686 952 877"> <thead> <tr> <th>Th</th> <th>H</th> <th>T</th> <th>U</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>2</td> <td>4</td> </tr> <tr> <td>2</td> <td>4</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>Partitioning 267×2 $200 \times 2 = 400$ $400 + 120 + 14 = 534$ $60 \times 2 = 120$ $7 \times 2 = 14$</p>	Th	H	T	U			2	4	2	4	0	0	<p>67×9</p> <table border="1" data-bbox="996 614 1444 774"> <tr> <td>\times</td> <td>60</td> <td>7</td> </tr> <tr> <td>9</td> <td>540</td> <td>63</td> </tr> </table> <p>$540 + 63 = 603$</p> <p>437×6</p> <table border="1" data-bbox="996 829 1579 997"> <tr> <td>\times</td> <td>400</td> <td>30</td> <td>7</td> </tr> <tr> <td>6</td> <td>2400</td> <td>180</td> <td>42</td> </tr> </table> <p>$2400 + 180 + 42 = 2622$</p>	\times	60	7	9	540	63	\times	400	30	7	6	2400	180	42	<p>Partitioning grid multiplication leading to formal compact methods</p> <p>$67 \times 9 =$</p> 
Th	H	T	U																											
		2	4																											
2	4	0	0																											
\times	60	7																												
9	540	63																												
\times	400	30	7																											
6	2400	180	42																											

<p>Year 5</p> <p>Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers</p>	<p>Multiply and divide numbers mentally drawing upon known facts</p> <p>multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p>	<p>Mental calculation</p> <p>Partitioning 407×4 407×2 $400 \times 4 = 1600$ $0 \times 4 = 0$ $7 \times 4 = 28$</p> <p>$1600 + 28 = 1628$</p> <p>Rounding and adjusting</p> <p>$\pounds 3.99 \times 6$ $\pounds 4 \times 6 = \pounds 24$ $\pounds 24.00 - \pounds 0.06 = \pounds 23.94$</p> <p>$28 \times 19$ $28 \times 10 \times 2 = 560$ $560 - 28 = 532$</p>	<p>TU \times TU by partitioning</p> <p>47×58</p> <table border="1" data-bbox="1003 236 1263 587"> <tbody> <tr> <td></td> <td>40</td> <td>7</td> </tr> <tr> <td>50</td> <td>2000</td> <td>350</td> </tr> <tr> <td></td> <td>($4 \times 10 \times 5 \times 10$) Or ($4 \times 5 \times 100$)</td> <td>($5 \times 10 \times 7$)</td> </tr> <tr> <td>8</td> <td>320</td> <td>56</td> </tr> <tr> <td></td> <td>($8 \times 4 \times 10$)</td> <td></td> </tr> </tbody> </table>		40	7	50	2000	350		($4 \times 10 \times 5 \times 10$) Or ($4 \times 5 \times 100$)	($5 \times 10 \times 7$)	8	320	56		($8 \times 4 \times 10$)		<p>Leading to multiplication using a compact method</p> $\begin{array}{r} 378 \times \\ \underline{557} \\ 2646 \end{array}$ $\begin{array}{r} 4569 \times \\ \underline{4578} \\ 38552 \end{array}$	<p>Compact for TU \times TU</p> $\begin{array}{r} 28 \times \\ \underline{239} \\ 252 \\ 840 \\ \hline 1092 \end{array}$ $\begin{array}{r} 567 \times 86 \\ \underline{3402} \\ 48762 \end{array}$
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<p>Year 6</p> <p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p>	<p>Perform mental calculations, including with mixed operations and large numbers</p>	<p>Mental calculation</p> <p>Partitioning 5.7×6 $5 \times 6 = 30$ $0.7 \times 6 = 4.2$ $30 + 4.2 = 34.2$</p> <p>5.3×19 $5.3 \times 10 \times 2 = 106$ $106 - 5.3 = 100.7$</p>	<p>3749×38</p> $\begin{array}{r} 3749 \times \\ \underline{53378} \\ 29922 \\ \hline 112470 \\ \underline{142392} \end{array}$																	

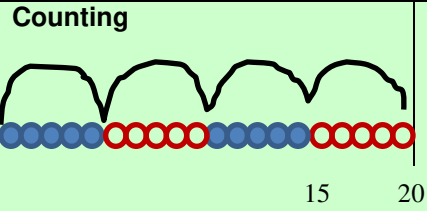
Year 1
Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.



There are eight oranges.
Can you share them equally?

Year 2
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs

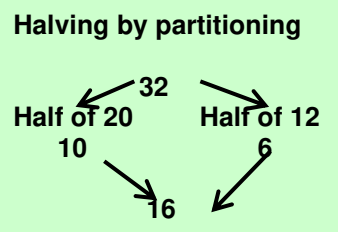
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers



Relate division to counting and multiplication
Count 5s to 10
Count 5s to 20
How many 5s are there in 20?

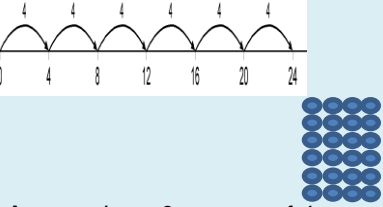
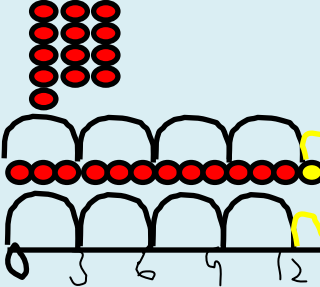
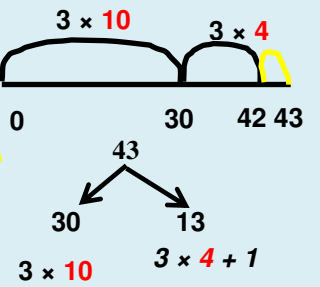
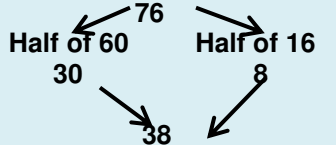
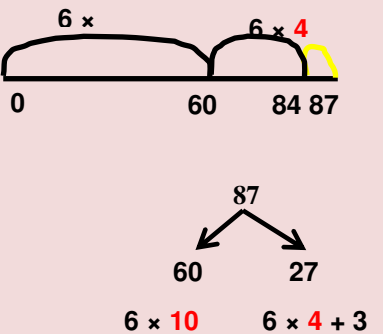
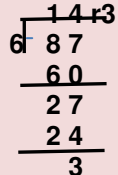
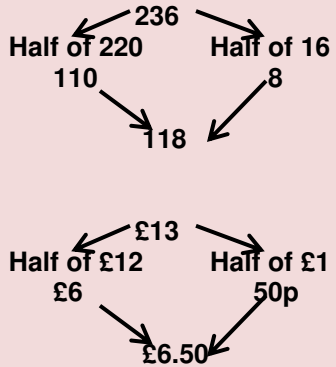
How many groups of five are there in 20?

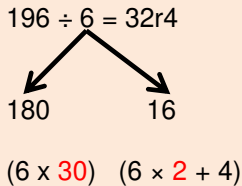
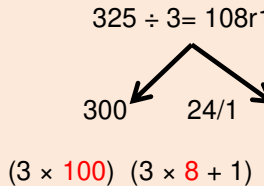
Recall and Derive Halves
Look at doubles of even numbers and seeing half of odd numbers as one left over or $\frac{1}{2}$



Division by sharing
 $10 \div 5 =$

Division by grouping
 $35 \div 5 =$

<p>Year 3</p> <p>Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers divided one-digit numbers, using mental and progressing to formal written methods</p>	<p>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p> <p>Use facts for numbers up to 10 times the divisor Eg $28 \div 3$ This is between</p> <p>$27 \div 3 = 9$ and $30 \div 3 = 10$ So 9 remainder 1</p>	<p>Counting Relate division to counting and multiplication facts. Count in 4s to see that there are 6 4s in 24</p>  <p>Arrays show 6 groups of 4 so $24 \div 4 = 6$</p>	<p>Division as grouping $13 \div 3 = 4 \text{ r}1$</p> 	<p>Division as grouping $43 \div 3$</p> 	<p>Halving by partitioning</p> 
<p>Year 4</p> <p>Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers</p> <p>Divide two-digit and three-digit numbers by a one-digit number using formal written layout</p>	<p>Division facts for multiplication tables up to 12×12</p> <p>Use facts for numbers up to 10 times the divisor Eg $75 \div 9$ This is between</p> <p>$72 \div 9 = 8$ and $81 \div 9 = 9$ So 8 remainder 3</p>	<p>Division as grouping Combine multiples of the divisor to support you</p> <p>$87 \div 6 =$</p> 	<p>Division by grouping leading to formal division $87 \div 6$</p> 	<p>Halving by partitioning</p> 	

<p>Year 5</p> <p>Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context</p>	<p>multiply and divide numbers mentally drawing upon known facts</p> <p>Divide numbers by 10 and 100</p> <table border="1" data-bbox="309 343 584 448"> <thead> <tr> <th>H</th> <th>T</th> <th>U</th> <th>1/1</th> <th>1/10</th> </tr> </thead> <tbody> <tr> <td></td> <td>2</td> <td>7</td> <td>0</td> <td>0</td> </tr> <tr> <td></td> <td></td> <td></td> <td>2</td> <td>7</td> </tr> </tbody> </table>	H	T	U	1/1	1/10		2	7	0	0				2	7	<p>Division as grouping drawing on known facts</p> <p>Use partitioning and known facts</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="622 268 862 454"> <p>$196 \div 6 = 32r4$</p>  <p>$(6 \times 30) \quad (6 \times 2 + 4)$</p> </div> <div data-bbox="1003 268 1265 454"> <p>$325 \div 3 = 108r1$</p>  <p>$(3 \times 100) \quad (3 \times 8 + 1)$</p> </div> </div>		<p>Division leading to formal division</p> <p>$578 \div 7$</p> $\begin{array}{r} 82r4 \\ 7 \overline{)578} \\ \underline{560} \\ 18 \\ \underline{14} \\ 4 \end{array}$	<p>Formal (short) Division</p> <p>$638 \div 8$</p> $\begin{array}{r} 79r4 \\ 8 \overline{)638} \\ \underline{56} \\ 78 \\ \underline{72} \\ 68 \\ \underline{64} \\ 4 \end{array}$ <p>$6725 \div 7$</p> $\begin{array}{r} 0960r5 \\ 7 \overline{)67425} \\ \underline{63} \\ 42 \\ \underline{42} \\ 5 \end{array}$
H	T	U	1/1	1/10																
	2	7	0	0																
			2	7																
<p>Year 6</p> <p>Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context</p> <p>Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context</p>	<p>Use known facts</p> <p>Know 378 is a multiple of 3 because 300/60 and 18 are all multiples of 3</p> <p>Know 385 is a multiple of 7 because 350 and 35 are multiples of 7</p>	<p>Short Division</p> <p>$638 \div 8$</p> $\begin{array}{r} 79r4 \\ 8 \overline{)638} \\ \underline{56} \\ 78 \\ \underline{72} \\ 6 \end{array}$ <p>$6725 \div 7$</p> $\begin{array}{r} 0960r5 \\ 7 \overline{)67425} \\ \underline{63} \\ 42 \\ \underline{42} \\ 5 \end{array}$	<p>Long Division drawing on known facts</p> <p>$493 \div 15$</p> $\begin{array}{r} 32r13/15 \\ 15 \overline{)493} \\ \underline{450} \\ 43 \\ \underline{30} \\ 13 \end{array}$	<p>Use tests of divisibility</p> <p>Multiple of 3, digits in the number add to 3, 6 or 9</p> <p>Multiple of 4, tens and ones in the number are a multiple of 4</p> <p>Multiple of 6, the number is even and digits in the number add to 3, 6 or 9</p> <p>Multiple of 9, digits in the number add to 9</p>	<p>Use place value and division facts</p> <p>$1.32 \div 3 = 1/100$ of $132 \div 3$</p> <p>$132 \div 3 = 44$ $44 \div 100 = 0.44$ So $1.32 \div 3 = 0.4$</p>															