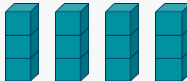


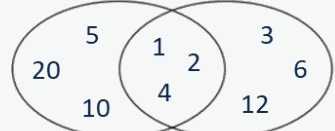





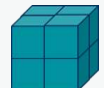
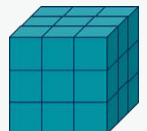


Multiplication

<p>Year 5</p>	<ul style="list-style-type: none"> Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) 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. Multiply numbers mentally drawing upon known facts. Multiply whole numbers and those involving decimals by 10, 100 and 1000 Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. 																																
<p>Progression of skills</p>	<p>Key representations</p>																																
<p>Multiples and factors</p> <p>Encourage children to notice patterns and make links with known facts.</p>	<p>... is a multiple of ... because</p> <p>$\dots \times \dots = \dots$</p>  <table border="1" data-bbox="569 899 1004 1021"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> </table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	<p>... is a factor of ... because</p> <p>$\dots \times \dots = \dots$</p>  1×8  2×4 <p>1, 2, 4 and 8 are factors of 8</p>	<p>The common factors of ... and ... are ...</p> <p>Factors of 20 Factors of 12</p> 
1	2	3	4	5	6	7	8	9	10																								
11	12	13	14	15	16	17	18	19	20																								
21	22	23	24	25	26	27	28	29	30																								
<p>Square and cube numbers</p>	<p>... squared means $\dots \times \dots$</p>  1×1 $1^2 = 1$  2×2 $2^2 = 4$  3×3 $3^2 = 9$  4×4 $4^2 = 16$		<p>... cubed means $\dots \times \dots \times \dots$</p>  $1 \times 1 \times 1$ $1^3 = 1$  $2 \times 2 \times 2$ $2^3 = 8$  $3 \times 3 \times 3$ $3^3 = 27$																														

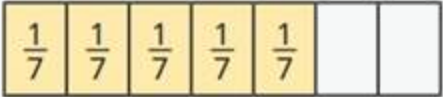
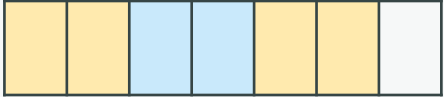
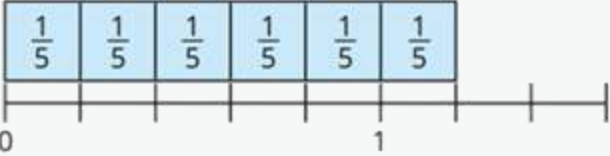
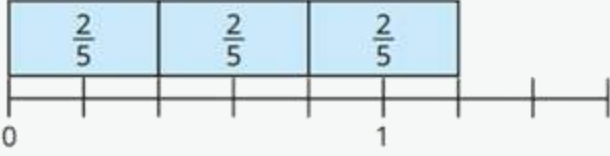
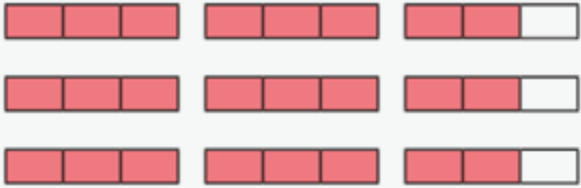
Multiplication

Progression of skills	Key representations																																					
<p>Multiply numbers up to 4 digits by a 1-digit number</p> <p>This builds on the short multiplication method introduced in Y4</p>	<p>To multiply a 4-digit number by ... , I multiply the ones by ... , the tens by ... , the hundreds by ... and the thousands by ...</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 20px;"></th> <th style="width: 40px;">Th</th> <th style="width: 40px;">H</th> <th style="width: 40px;">T</th> <th style="width: 40px;">O</th> </tr> </thead> <tbody> <tr> <td>1000</td> <td></td> <td>100</td> <td>10 10 10</td> <td>1 1</td> </tr> <tr> <td>100</td> <td></td> <td>100</td> <td>10 10 10</td> <td>1 1</td> </tr> <tr> <td>100</td> <td></td> <td>100</td> <td>10 10 10</td> <td>1 1</td> </tr> </tbody> </table> <div style="border: 1px solid black; padding: 5px; margin-left: 20px;"> <table style="border-collapse: collapse; text-align: center;"> <tr><td style="border-right: 1px solid black; padding: 5px 10px;">1</td><td style="border-right: 1px solid black; padding: 5px 10px;">1</td><td style="border-right: 1px solid black; padding: 5px 10px;">5</td><td style="padding: 5px 10px;">2</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px 10px;">×</td><td style="border-right: 1px solid black; padding: 5px 10px;"></td><td style="border-right: 1px solid black; padding: 5px 10px;"></td><td style="padding: 5px 10px;">3</td></tr> <tr><td colspan="4" style="border-top: 1px solid black; border-bottom: 1px solid black;"></td></tr> <tr><td colspan="4" style="border-bottom: 1px solid black;"></td></tr> </table> </div> </div>			Th	H	T	O	1000		100	10 10 10	1 1	100		100	10 10 10	1 1	100		100	10 10 10	1 1	1	1	5	2	×			3								
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<p>Multiply numbers up to 4 digits by a 2-digit number</p> <p>Numbers are first partitioned using an area model then long multiplication is introduced for the first time.</p>	<p>I can partition ... into ... and ...</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">×</td> <td style="width: 40px;">40</td> <td style="width: 40px;">4</td> </tr> <tr> <td style="width: 20px;">30</td> <td style="width: 40px;">1,200</td> <td style="width: 40px;">120</td> </tr> <tr> <td style="width: 20px;">2</td> <td style="width: 40px;">80</td> <td style="width: 40px;">8</td> </tr> </table> <div style="margin-left: 20px;"> $32 \times 44 = 1,200 + 80 + 120 + 8$ $32 \times 44 = 1,408$ </div> </div>	×	40	4	30	1,200	120	2	80	8	<p>First, I multiply by the ... Then I multiply by the ...</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">×</td> <td style="width: 40px;">10</td> <td style="width: 40px;">3</td> </tr> <tr> <td style="width: 20px;">30</td> <td style="width: 40px;">300</td> <td style="width: 40px;">90</td> </tr> <tr> <td style="width: 20px;">2</td> <td style="width: 40px;">20</td> <td style="width: 40px;">6</td> </tr> </table> <div style="margin-left: 20px;"> $300 + 90 + 20 + 6 = 416$ </div> </div> <div style="margin-top: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td style="border-right: 1px solid black; padding: 5px 10px;">3</td><td style="padding: 5px 10px;">2</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px 10px;">×</td><td style="padding: 5px 10px;">3</td></tr> <tr><td colspan="2" style="border-top: 1px solid black; border-bottom: 1px solid black;"></td></tr> <tr><td style="border-right: 1px solid black; padding: 5px 10px;">9</td><td style="padding: 5px 10px;">6</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px 10px;">3</td><td style="padding: 5px 10px;">2</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px 10px;">4</td><td style="padding: 5px 10px;">1</td></tr> <tr><td style="border-right: 1px solid black; padding: 5px 10px;"></td><td style="padding: 5px 10px;">6</td></tr> </table> <div style="margin-left: 20px;"> <p>(32×3)</p> <p>(32×10)</p> </div> </div>	×	10	3	30	300	90	2	20	6	3	2	×	3			9	6	3	2	4	1		6				
×	40	4																																				
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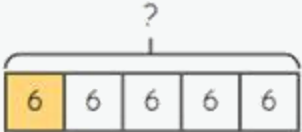
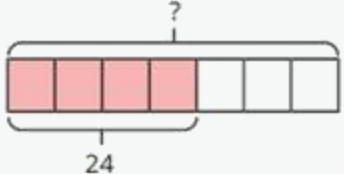
Multiplication

Progression of skills	Key representations																										
<p>Multiply by 10, 100 and 1,000</p> <p>Some children may over-generalise that multiplying by a power of 10 always results in adding zeros. This will cause issues later when multiplying decimals.</p>	<p>To multiply by 10/100/1,000, I move all the digits ... places to the left. ... is 10/100/1,000 times the size of ...</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px; height: 20px; background-color: #d3d3d3;">M</td> <td style="width: 20px; height: 20px; background-color: #d2b48c;">HTh</td> <td style="width: 20px; height: 20px; background-color: #d8bfd8;">TTh</td> <td style="width: 20px; height: 20px; background-color: #add8e6;">Th</td> <td style="width: 20px; height: 20px; background-color: #90ee90;">H</td> <td style="width: 20px; height: 20px; background-color: #ffff00;">T</td> <td style="width: 20px; height: 20px; background-color: #ff0000;">O</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>● ●</td> <td>● ●</td> <td>● ●</td> </tr> </table> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px; height: 20px; background-color: #add8e6;">Th</td> <td style="width: 20px; height: 20px; background-color: #90ee90;">H</td> <td style="width: 20px; height: 20px; background-color: #ffff00;">T</td> <td style="width: 20px; height: 20px; background-color: #ff0000;">O</td> <td style="width: 20px; height: 20px; background-color: #ffff00;">Tth</td> <td style="width: 20px; height: 20px; background-color: #90ee90;">Hth</td> </tr> <tr> <td></td> <td></td> <td></td> <td>● ●</td> <td>● ●</td> <td>● ●</td> </tr> </table> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: left;"> <p>$234 \times 10 = 2,340$</p> <p>$234 \times 100 = 23,400$</p> <p>$234 \times 1,000 = 234,000$</p> </div> <div style="text-align: left;"> <p>$2.34 \times 10 = 23.4$</p> <p>$2.34 \times 100 = 234$</p> <p>$2.34 \times 1,000 = 2,340$</p> </div> </div>	M	HTh	TTh	Th	H	T	O					● ●	● ●	● ●	Th	H	T	O	Tth	Hth				● ●	● ●	● ●
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			● ●	● ●	● ●																						
<p>Mental strategies</p> <p>Children continue to use efficient mental strategies such as partitioning and knowledge of factor pairs and related facts to multiply.</p>	<p>The most efficient strategy to calculate ... \times ... is ... To calculate ... \times 12, I can do ... \times ... \times ...</p> <p>For example: 121×12</p> <p>I could calculate 100×12 plus 20×12 plus 1×12</p> <p>I could calculate 121×10 plus 121×2</p> <p>I could calculate $121 \times 6 \times 2$</p> <p>I could calculate $121 \times 4 \times 3$</p>																										

Multiplication

Progression of skills	Key representations
<p>Multiply fractions by a whole number</p> <p>Make links with repeated addition.</p> <p>E.g. $\frac{1}{5} \times 4 = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$</p>	<p>To multiply a fraction by an integer, I multiply the numerator by the integer and the denominator remains the same.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  $\frac{1}{7} \times 5 = \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{5}{7}$ </div> <div style="text-align: center;">  $\frac{2}{7} \times 3 = \frac{2}{7} + \frac{2}{7} + \frac{2}{7} = \frac{6}{7}$ </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">  $\frac{1}{5} \times 6 = \frac{6}{5} = 1\frac{1}{5}$ </div> <div style="text-align: center;">  $\frac{2}{5} \times 3 = \frac{6}{5} = 1\frac{1}{5}$ </div> </div>
<p>Multiply mixed numbers by a whole number</p>	<p>I can partition $\square \frac{\square}{\square}$ into \square and $\frac{\square}{\square}$</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  </div> <div style="text-align: center;"> $2\frac{2}{3} \times 3$ $2 \times 3 = 6 \quad \frac{2}{3} \times 3 = \frac{6}{3} = 2$ $2\frac{2}{3} \times 3 = 6 + 2 = 8$ </div> </div>

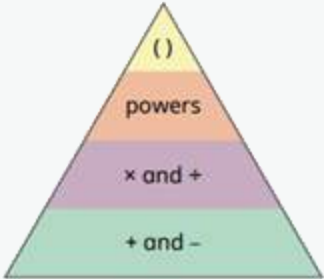

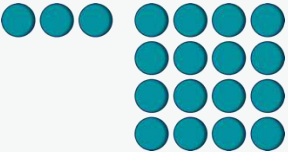



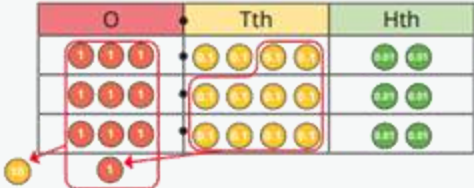
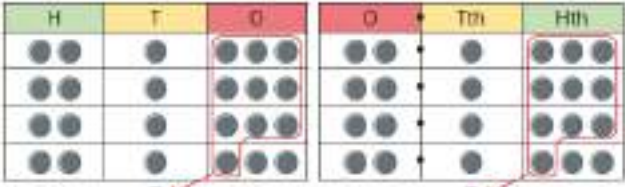
Multiplication

Progression of skills	Key representations	
<p>Find the whole</p> <p>Children multiply to find the whole from a given part.</p>	<p>If $\frac{1}{\square}$ is ... , then the whole is ... \times ...</p> <p>$\frac{1}{5}$ of ___ = 6</p>  <p>$5 \times 6 = 30$</p> <p>$\frac{1}{5}$ of 30 = 6</p>	<p>If $\frac{\square}{\square}$ is ... , then $\frac{1}{\square}$ is ... and the whole is ... \times ...</p> <p>$\frac{4}{7}$ of ___ = 24</p>  <p>$\frac{1}{7} = 24 \div 4 = 6$</p> <p>$7 \times 6 = 42$</p> <p>$\frac{4}{7}$ of 42 = 24</p>

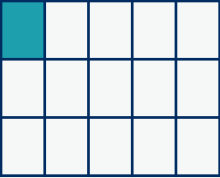
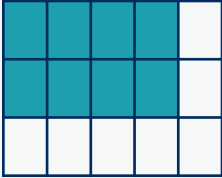
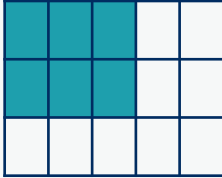
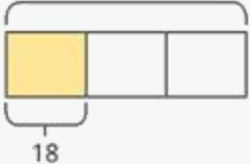
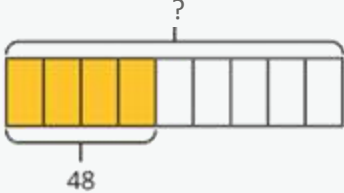
Multiplication

<p>Year 6</p>	<ul style="list-style-type: none"> Identify common factors and common multiples. Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. Multiply numbers by 10, 100 and 1,000 Multiply one-digit numbers with up to two decimal places by whole numbers. Use their knowledge of the order of operations to carry out calculations involving the 4 operations. Multiply simple pairs of proper fractions, writing the answer in its simplest form. Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. Solve problems involving the calculation of percentages. 																												
<p>Progression of skills</p>	<p>Key representations</p>																												
<p>Multiply numbers up to 4 digits by a 2-digit number</p>	<p>To multiply by a 2-digit number, first multiply by the ones, then multiply by the tens and then find the total.</p> <div data-bbox="1533 749 1906 992" style="text-align: right;"> <p>(1,207 × 6) (1,207 × 30)</p> </div>																												
<p>Multiply by 10, 100 and 1,000 Some children may over-generalise that multiplying by a power of 10 always results in adding zeros.</p>	<p>To multiply by 10/100/1,000, I move all the digits ... places to the left. ... is 10/100/1,000 times the size of ...</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="background-color: #d3d3d3;">M</td> <td style="background-color: #d3d3d3;">HTh</td> <td style="background-color: #d3d3d3;">TTh</td> <td style="background-color: #d3d3d3;">Th</td> <td style="background-color: #d3d3d3;">H</td> <td style="background-color: #d3d3d3;">T</td> <td style="background-color: #d3d3d3;">O</td> <td style="border-left: 1px dashed black;">Th</td> <td style="background-color: #d3d3d3;">H</td> <td style="background-color: #d3d3d3;">T</td> <td style="background-color: #d3d3d3;">O</td> <td style="border-left: 1px dashed black;">Tth</td> <td style="background-color: #d3d3d3;">Hth</td> <td style="background-color: #d3d3d3;">Thth</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>● ●</td> <td>● ●</td> <td>● ●</td> <td style="border-left: 1px dashed black;"></td> <td></td> <td></td> <td></td> <td style="border-left: 1px dashed black;">● ●</td> <td>● ●</td> <td>● ●</td> </tr> </table> <div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>$234 \times 10 = 2,340$</p> <p>$234 \times 100 = 23,400$</p> <p>$234 \times 1,000 = 234,000$</p> </div> <div style="width: 45%;"> <p>$0.234 \times 10 = 2.34$</p> <p>$0.234 \times 100 = 23.4$</p> <p>$0.234 \times 1,000 = 234$</p> </div> </div>	M	HTh	TTh	Th	H	T	O	Th	H	T	O	Tth	Hth	Thth					● ●	● ●	● ●					● ●	● ●	● ●
M	HTh	TTh	Th	H	T	O	Th	H	T	O	Tth	Hth	Thth																
				● ●	● ●	● ●					● ●	● ●	● ●																

Multiplication

Progression of skills	Key representations	
<p>Order of operations</p> <p>Calculations in brackets should be done first. Multiplication and division should be performed before addition and subtraction.</p>	<p>... has greater priority than ..., so the first part of the calculation I need to do is ...</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>$(3 + 4) \times 2 = 14$</p> </div> <div style="text-align: center;">  <p>$3 + 4^2 = 19$</p> </div> <div style="text-align: center;">  <p>$3 + 4 \times 2 = 11$</p> </div> </div>	
<p>Multiply decimals by integers</p> <p>This is the first time children multiply decimals by numbers other than 10, 100 or 1,000. Encourage them to make links with known facts and whole number multiplication.</p>	<p>I know that ... \times ... = ..., so I also know that ... \times ... = ...</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>$6 \times 2 = 12$</p> </div> <div style="text-align: center;">  <p>$6 \times 0.2 = 1.2$</p> </div> </div>	<p>I need to exchange 10 ... for 1 ...</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>$213 \times 4 = 852$</p> </div> <div style="text-align: center;">  <p>$2.13 \times 4 = 8.52$</p> </div> </div>

Multiplication

Progression of skills	Key representations	
<p>Multiply fractions by fractions</p> <p>Encourage children to give answers in their simplest form.</p>	<p>When multiplying a pair of fractions, I need to multiply the numerator and multiply the denominator.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  $\frac{1}{3} \times \frac{1}{5} = \frac{1}{15}$ </div> <div style="text-align: center;">  $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$ </div> <div style="text-align: center;">  $\frac{2}{3} \times \frac{3}{5} = \frac{6}{15} = \frac{2}{5}$ </div> </div>	
<p>Find the whole</p> <p>Children multiply to find the whole from a given part.</p>	<p>If $\frac{1}{\square}$ is ... , then the whole is ... \times ...</p> <p>$\frac{1}{3}$ of ___ = 18</p>  <p>$18 \times 3 = 54$</p> <p>$\frac{1}{3}$ of 54 = 18</p>	<p>If $\frac{\square}{\square}$ is ... , then $\frac{1}{\square}$ is ... and the whole is ... \times ...</p> <p>$\frac{4}{9}$ of ___ = 48</p>  <p>$\frac{1}{9} = 48 \div 4 = 12$</p> <p>$9 \times 12 = 108$</p> <p>$\frac{4}{9}$ of 108 = 48</p>

Multiplication

Progression of skills	Key representations																																					
<p>Calculate percentages</p> <p>Children first learn how to find 1%, 10%, 20%, 25% and 50% before using multiples of these amounts to find any percentage.</p>	<p>There are ... lots of ... % in 100%</p> <p>To find ... %, I need to divide by ...</p> <table border="1" data-bbox="576 372 1081 482"> <tr><td colspan="4">100%</td></tr> <tr><td colspan="2">50%</td><td colspan="2">50%</td></tr> <tr><td>25%</td><td>25%</td><td>25%</td><td>25%</td></tr> </table> <p>50% of ... = ... ÷ 2</p> <p>25% of ... = ... ÷ 4</p>	100%				50%		50%		25%	25%	25%	25%	<p>... % is made up of ... %, and ... %</p> <table border="1" data-bbox="1147 358 1908 446"> <tr><td colspan="10">100%</td></tr> <tr><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td></tr> </table> <p>To find 30%, I can find 10% and then multiply it by 3</p> <p>To find 23%, I can use 10% × 2 and 1% × 3</p> <p>To find 99%, I can find 1%, then subtract from 100%</p>	100%										10%	10%	10%	10%	10%	10%	10%	10%	10%	10%				
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<p>Calculations involving ratio</p> <p>Encourage children to see the multiplicative relationship between ratios. They will need to multiply or divide each value by the same number to keep the ratio equivalent. Double number lines and ratio tables help children to see both horizontal and vertical multiplicative relationships.</p>	<p>For every ... , there are ...</p> <p>For every 1 adult on a school trip, there are 6 children.</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">adults</div> <div style="border: 1px solid black; width: 40px; height: 30px; background-color: #fff9c4;"></div> </div> <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="margin-right: 10px;">children</div> <div style="border: 1px solid black; width: 280px; height: 30px; background-color: #c4c400;"></div> </div> <div style="text-align: center; margin-top: 20px;"> <table border="1" data-bbox="1500 768 1825 962"> <thead> <tr><th>Adults</th><th>Children</th></tr> </thead> <tbody> <tr><td>1</td><td>6</td></tr> <tr><td>2</td><td>12</td></tr> <tr><td>3</td><td>18</td></tr> </tbody> </table> <p style="text-align: center;">× 6 (horizontal arrows)</p> <p style="text-align: center;">× 3 (vertical arrows)</p> </div> <div style="text-align: center; margin-top: 20px;"> <table border="1" data-bbox="1369 1129 1902 1282"> <tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr><td colspan="7">Adults</td></tr> <tr><td>0</td><td>6</td><td>12</td><td>18</td><td></td><td></td><td></td></tr> <tr><td colspan="7">Children</td></tr> </table> </div> <p>The ratio of adults to children is 1 : 6</p>		Adults	Children	1	6	2	12	3	18	0	1	2	3	4	5	6	Adults							0	6	12	18				Children						
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Adults																																						
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Progression of skills - Division

Year group	Skill
Nursery	<ul style="list-style-type: none">• Continue with counting and subitising skills as a foundation for later work on equal groups. (see addition and subtraction sections)
Reception	<ul style="list-style-type: none">• Sharing• Grouping
Year 1	<ul style="list-style-type: none">• Make equal groups – grouping• Make equal groups – sharing• Find a half• Find a quarter

Progression of skills - Division



Year group	Skill
Year 2	<ul style="list-style-type: none">• Divide by 2• Divide by 10• Divide by 5• Missing numbers• Unit fractions• Non-unit fractions
Year 3	<ul style="list-style-type: none">• Divide by 3• Divide by 4• Divide by 8• Related facts• Divide a 2-digit number by a 1-digit number - no exchange• Divide a 2-digit number by a 1-digit number - with remainders• Unit fractions of a set of objects• Non-unit fractions of a set of objects

Progression of skills - Division




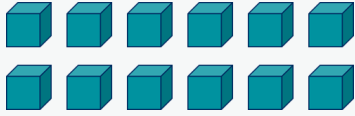




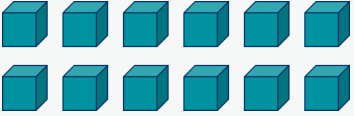
Year group	Skill
Year 4	<ul style="list-style-type: none">• Division facts to 12×12• Divide a number by 1 and itself• Related facts• Divide a 2 or 3-digit number by a 1-digit number• Divide by 10 and 100
Year 5	<ul style="list-style-type: none">• Mental strategies• Divide numbers up to 4 digits by a 1-digit number• Divide by 10, 100 and 1,000• Fraction of an amount

Progression of skills - Division

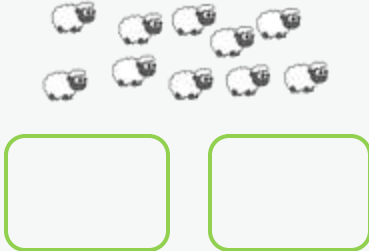
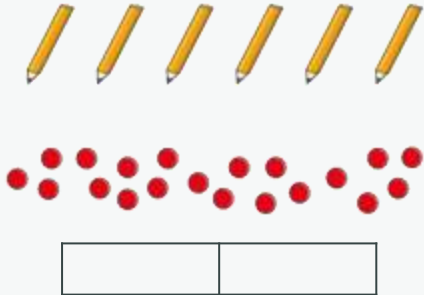
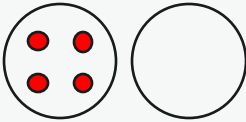

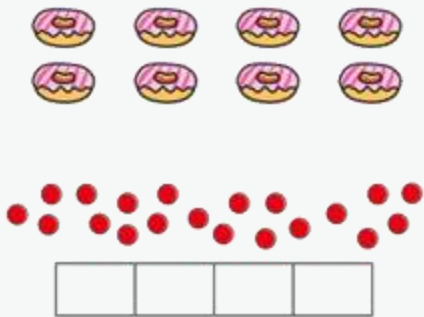

Year group	Skill
Year 6	<ul style="list-style-type: none">• Short division• Mental strategies• Long division• Order of operations• Divide by 10, 100 and 1,000• Divide decimals by integers• Decimal and fraction equivalents• Divide a fraction by an integer• Fraction of an amount• Calculate percentages• Calculations involving ratio

<p>Reception</p>	<ul style="list-style-type: none"> • Have a deep understanding of number to 10, including the composition of each number. • Subitise (recognise quantities without counting) up to 5 • Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and some number bonds to 10, including double facts. • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.
<p>Progression of skills</p>	<p>Key representations</p>
<p>Sharing</p> <p>Provide practical activities such as sharing items during snack time. Encourage children to check whether items have been shared fairly (equally).</p>	<p>There are ... altogether. They are shared equally between ... groups.</p> 
<p>Grouping</p> <p>Provide opportunities to make equal groups when tidying up or during snack time. Encourage children to check that each group has the same amount.</p>	<p>There are ... groups of ... There are ... altogether.</p> 

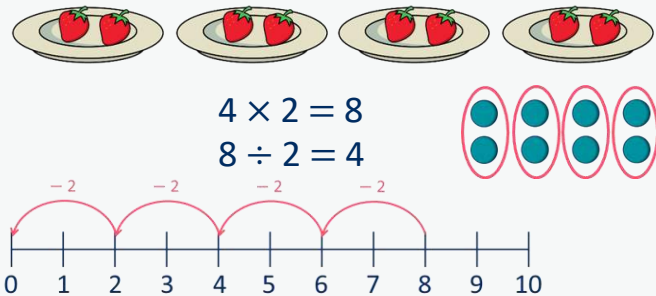

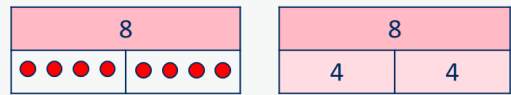
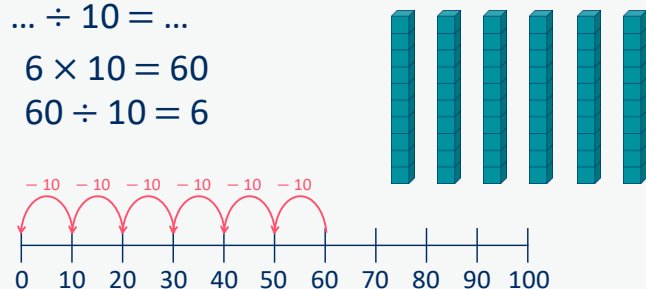
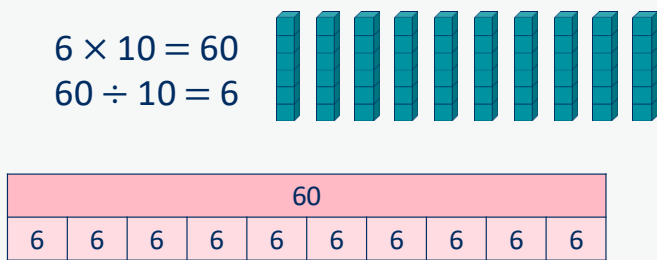
Division

<p>Year 1</p>	<ul style="list-style-type: none"> Solve simple one-step problems involving division, using concrete objects, pictorial representations and arrays with the support of the teacher. Recognise, find and name a half as one of two equal parts of a quantity. Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. 		
<p>Progression of skills</p>	<p>Key representations</p>		
<p>Make equal groups - grouping</p> <p>Encourage children to physically move objects into equal groups. They can also circle equal groups when using pictures.</p>	<p>There are ... altogether. How many groups of ... can you make?</p>  	<p>Circle groups of 2 There are ... groups of 2</p> 	<p>Take ... cubes. Make equal groups.</p>  <p>There are ... groups of ...</p>
<p>Make equal groups – sharing</p> <p>Encourage children to check that the objects have been shared fairly and each group is the same.</p>	<p>... have been shared equally between... There are ... on/in each ...</p>    		<p>Take ... cubes. Share them between ...</p>  <p>12 shared between ... is ...</p>

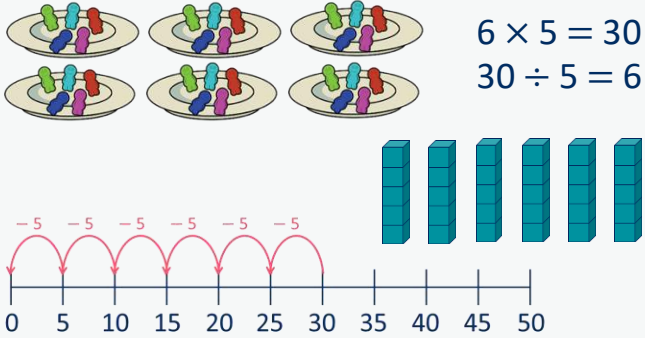
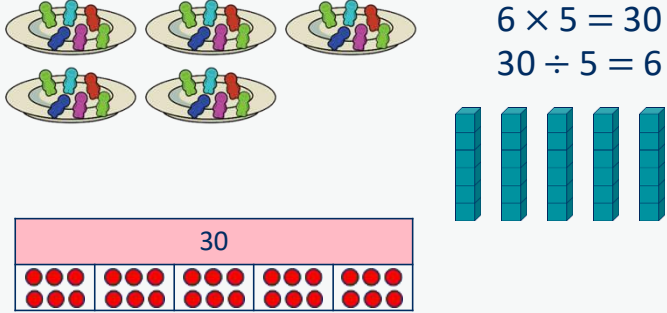
Division

Progression of skills	Key representations		
<p>Find a half</p> <p>Start with practical opportunities to share a quantity into 2 groups. Progress to circling half of the objects in a picture and then to finding the whole from a given half.</p>	<p>To find half, I need to share into 2 equal groups.</p>  <p>There are ... in each group.</p>	<p>Half of ... is ...</p> 	<p>If ... is half, what is the whole?</p>  <p>4 is half of ...</p>
<p>Find a quarter</p> <p>Start with practical opportunities to share a quantity into 4 groups. Progress to using pictures or bar models to find a quarter and then to finding the whole from a given quarter.</p>	<p>To find a quarter, I need to share into 4 equal groups.</p>  <p>There are ... in each group.</p>	<p>A quarter of ... is ...</p> 	<p>If ... is one quarter, what is the whole?</p>  <p>3 is one quarter of ...</p>

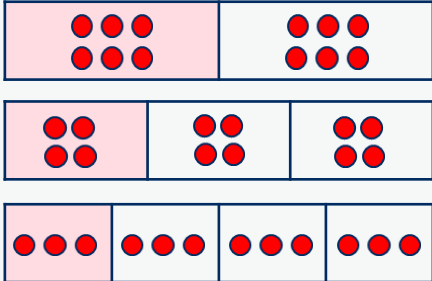

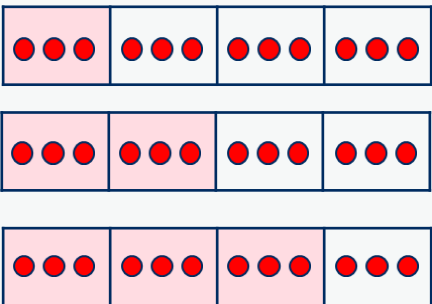
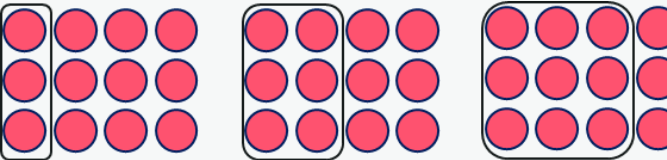
Division

<p>Year 2</p>	<ul style="list-style-type: none"> Recall and use division facts for the 2, 5 and 10 multiplication tables. Calculate mathematical statements for division within the multiplication tables and write them using the division (\div) and equals (=) signs. Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a quantity. 	
<p>Progression of skills</p>	<p>Key representations</p>	
<p>Divide by 2</p> <p>Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts and halving.</p>	<p>There are ... equal groups of 2 ... $\div 2 = \dots$</p>  <p>$4 \times 2 = 8$ $8 \div 2 = 4$</p>	<p>... shared equally between 2 is ... Half of ... is $\div 2 = \dots$</p>  <p>$4 \times 2 = 8$ $8 \div 2 = 4$</p> 
<p>Divide by 10</p> <p>Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.</p>	<p>There are ... equal groups of 10 ... $\div 10 = \dots$</p> <p>$6 \times 10 = 60$ $60 \div 10 = 6$</p> 	<p>... shared equally between 10 is $\div 10 = \dots$</p> <p>$6 \times 10 = 60$ $60 \div 10 = 6$</p> 

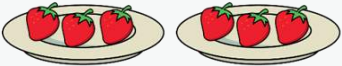
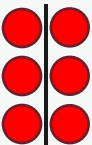
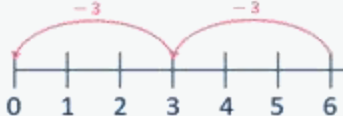



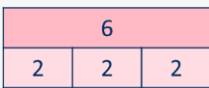

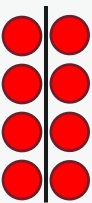


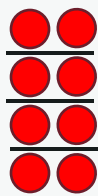
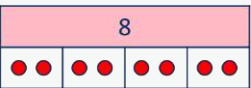
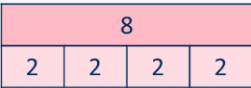
Division

Progression of skills	Key representations																																			
<p>Divide by 5</p> <p>Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.</p>	<p>There are ... equal groups of 5</p> <p>... $\div 5 = \dots$</p>  <p>$6 \times 5 = 30$ $30 \div 5 = 6$</p>	<p>... shared equally between 5 is ...</p> <p>... $\div 5 = \dots$</p>  <p>$6 \times 5 = 30$ $30 \div 5 = 6$</p>																																		
<p>Missing numbers</p> <p>Bar models are useful to show the link between multiplication and division.</p>	<p>... divided by 2/5/10 is equal to ...</p> <table border="1" data-bbox="576 825 762 906"> <tr><td colspan="2">?</td></tr> <tr><td>10</td><td>10</td></tr> </table> $\square \div 2 = 10$ <table border="1" data-bbox="576 928 1011 1009"> <tr><td colspan="5">?</td></tr> <tr><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td></tr> </table> $\square \div 5 = 10$ <table border="1" data-bbox="576 1031 1350 1112"> <tr><td colspan="10">?</td></tr> <tr><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td></tr> </table> $\square \div 10 = 10$?		10	10	?					10	10	10	10	10	?										10	10	10	10	10	10	10	10	10	10
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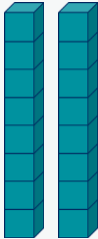



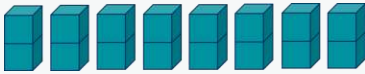
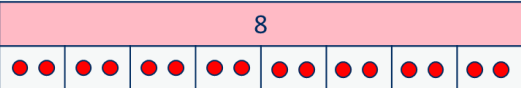

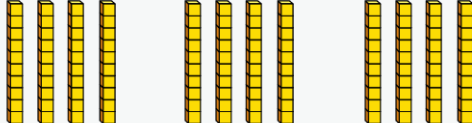
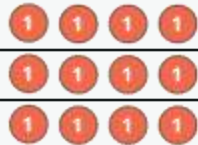

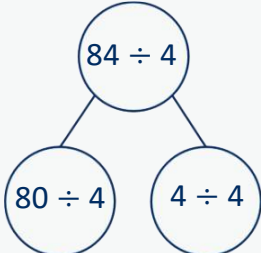
Division

Progression of skills	Key representations	
<p>Unit fractions</p> <p>In Y2 the focus is on finding $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{3}$</p> <p>Bar models are useful to show the link between division and finding a fraction.</p>	<p>The objects have been shared fairly into ... groups.</p> <p>$\frac{1}{\square}$ of ... is ...</p> 	<p>There are ... equal parts.</p> <p>There is ... part circled.</p> <p>$\frac{1}{\square}$ is circled.</p> 
<p>Non-unit fractions</p> <p>In Y2 the focus is on finding $\frac{2}{4}$ and $\frac{3}{4}$</p> <p>Prompt children to notice that $\frac{2}{4}$ is equivalent to $\frac{1}{2}$</p>	<p>The objects have been shared fairly into ... groups.</p> <p>$\frac{\square}{\square}$ of ... is ...</p> 	<p>There are ... equal parts.</p> <p>There are ... parts circled.</p> <p>$\frac{\square}{\square}$ is circled.</p> 

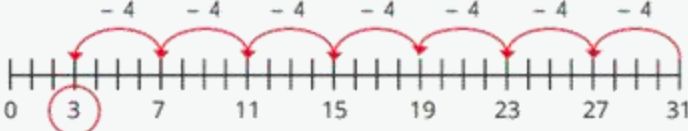

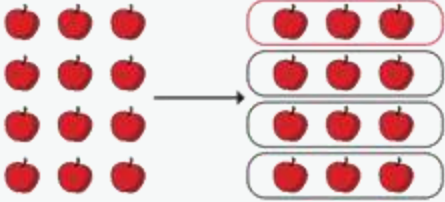
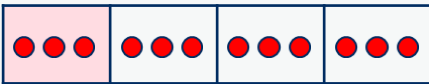

Division

<p>Year 3</p>	<ul style="list-style-type: none"> Recall and use division facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for 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. Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. 	
<p>Progression of skills</p>	<p>Key representations</p>	
<p>Divide by 3</p> <p>Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.</p>	<p>There are ... groups of 3 in ...</p> <p>... $\div 3 =$</p>  <p>$2 \times 3 = 6$ $6 \div 3 = 2$</p>  	<p>... has been shared equally into 3 equal groups.</p> <p>... $\div 3 =$</p>  <p>$2 \times 3 = 6$ $6 \div 3 = 2$</p>   
<p>Divide by 4</p> <p>Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.</p>	<p>There are ... groups of 4 in ...</p> <p>... $\div 4 =$</p>  <p>$2 \times 4 = 8$ $8 \div 4 = 2$</p>  	<p>... has been shared equally into 4 equal groups.</p> <p>... $\div 4 =$</p>  <p>$2 \times 4 = 8$ $8 \div 4 = 2$</p>   

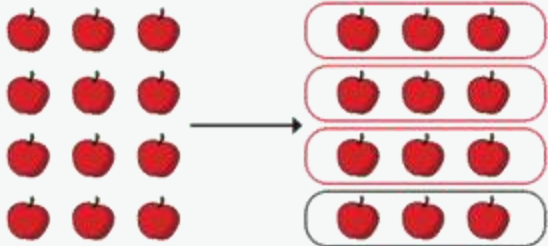
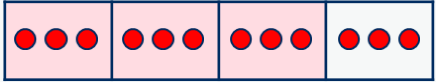

Division

Progression of skills	Key representations																	
<p>Divide by 8</p> <p>Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.</p>	<p>There are ... groups of 8 in \div 8 =</p>  <p>$2 \times 8 = 16$ $16 \div 8 = 2$</p>  	<p>... has been shared equally into 8 equal groups. ... \div 8 =</p>    <p>$2 \times 8 = 16$ $16 \div 8 = 2$</p>																
<p>Related facts</p> <p>Link to known times-table facts.</p>	<p>... \div ... is equal to ..., so ... tens \div ... is equal to ... tens.</p>     <p>$12 \div 3 = 4$ $120 \div 3 = 40$</p>																	
<p>Divide a 2-digit number by a 1-digit number - no exchange</p> <p>Partition into tens and ones to divide and then recombine.</p>	<p>... tens divided by ... is equal to ... tens. ... ones divided by ... is equal to ... ones.</p> <table border="1" data-bbox="582 1079 913 1308"> <thead> <tr> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table> <p>$60 \div 2 = 30$ $4 \div 2 = 2$ $64 \div 2 = 32$</p>  <table border="1" data-bbox="1566 1079 1918 1308"> <thead> <tr> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>		Tens	Ones					Tens	Ones								
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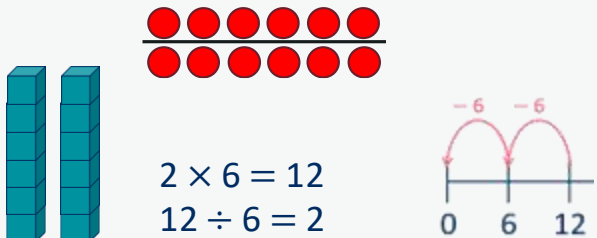
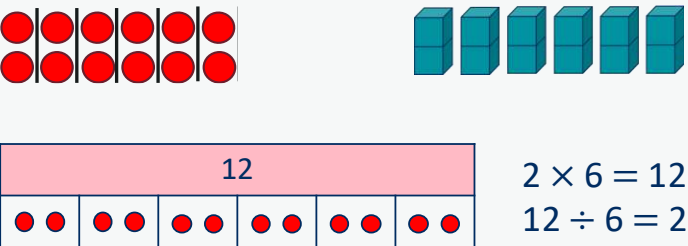




Division

Progression of skills	Key representations																																					
<p>Divide a 2-digit number by a 1-digit number - with remainders</p> <p>Encourage children to partition numbers flexibly to help them to divide more efficiently.</p>	<p>... tens divided by ... is equal to ... tens. ... ones divided by ... is equal to ... ones.</p> <table border="1" data-bbox="590 496 948 825"> <thead> <tr> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table> <div style="display: flex; justify-content: center; align-items: center;"> <div style="text-align: center;"> $96 \div 4$ </div> <div style="margin: 0 20px;"> </div> <div style="text-align: center;"> $80 \div 4$ $16 \div 4$ </div> </div> <p style="text-align: center;"> $80 \div 4 = 20$ $16 \div 4 = 4$ $96 \div 4 = 24$ </p>	Tens	Ones											<p>There are ... groups of ... There are ... remaining.</p> <p>$31 \div 4 = 7 \text{ r}3$</p>  <p>$94 \div 4 = 23 \text{ r}2$</p> <table border="1" data-bbox="1253 649 1466 839"> <thead> <tr> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </tbody> </table>  <table border="1" data-bbox="1674 649 1887 839"> <thead> <tr> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </tbody> </table>	Tens	Ones											Tens	Ones										
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<p>Unit fractions of a set of objects</p> <p>Bar models are useful to show the link between division and fractions, for example, dividing by 3 and finding a third.</p>	<p>The whole is divided into ... equal parts. Each part is $\frac{1}{\square}$ of the whole.</p>  <p>$\frac{1}{4}$ of 12 apples is 3 apples.</p>	<p>One ... of ... is ...</p> <p>$\frac{1}{4}$ of 12 is 3</p>  <p>$\frac{1}{3}$ of 36 is 12</p> 																																				




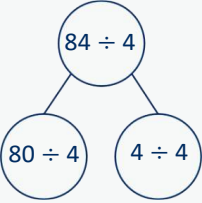
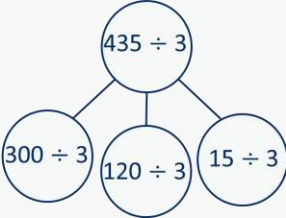
Division

Progression of skills	Key representations	
<p>Non-unit fractions of a set of objects</p> <p>Bar models are a useful representation and show the links with division and multiplication.</p>	<p>The whole is divided into ... equal parts. Each part is $\frac{1}{\square}$ of the whole.</p>  <p>$\frac{3}{4}$ of 12 apples is 9 apples.</p>	<p>$\frac{1}{\square}$ of ... is ..., so $\frac{\square}{\square}$ of ... is ...</p> <p>$\frac{3}{4}$ of 12 is 9</p>  <p>$\frac{2}{3}$ of 36 is 24</p> 

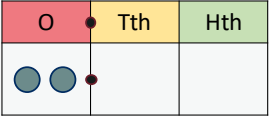
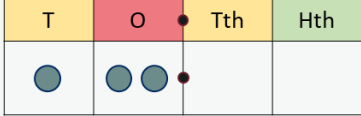
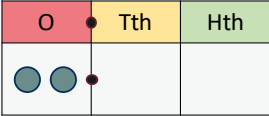
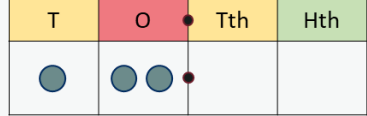
Division

<p>Year 4</p>	<ul style="list-style-type: none"> Recall division facts for multiplication tables up to 12×12 Use place value, known and derived facts to divide mentally, including: dividing by 1 Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths. 	
<p>Progression of skills</p>	<p>Key representations</p>	
<p>Division facts to 12×12</p> <p>Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.</p>	<p>There are ... groups of ... in \div ... =</p>  <p>$2 \times 6 = 12$ $12 \div 6 = 2$</p>	<p>... has been shared equally into ... equal groups. ... \div ... =</p>  <p>$2 \times 6 = 12$ $12 \div 6 = 2$</p>
<p>Divide a number by 1 and itself</p> <p>Children may try to divide a number by zero and it should be highlighted that this is not possible.</p>	<p>When I divide a number by 1, the number remains the same.</p> <p>5 shared between 1 is 5 </p> <p>There are 5 groups of 1 in 5</p> 	<p>When I divide a number by itself, the answer is 1</p> <p>5 shared between 5 is 1</p>  <p>There is 1 group of 5 in 5</p> 

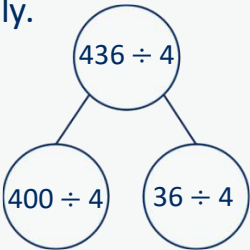
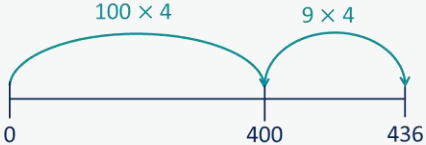
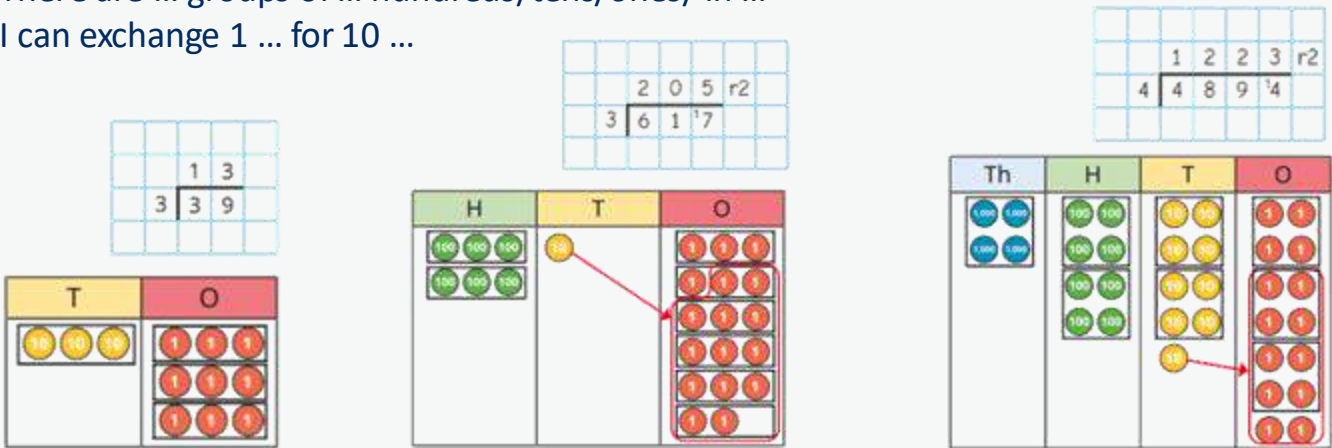
Division

Progression of skills	Key representations																										
<p>Related facts</p> <p>Link to known times-table facts.</p>	<p>... \div ... is equal to ... so ... tens \div ... is equal to ... tens and ... hundreds \div ... is equal to ... hundreds.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>21 \div 7 = 3</p> <p>210 \div 7 = 30</p> <p>2,100 \div 7 = 300</p> </div> <div style="text-align: center;">  <p>21 \div 3 = 7</p> <p>210 \div 3 = 70</p> <p>2,100 \div 3 = 700</p> </div> <div style="text-align: center;">  </div> </div>																										
<p>Divide a 2 or 3-digit number by a 1-digit number</p> <p>Progress from divisions with no exchange, to divisions with exchange and then divisions with remainders.</p>	<p>I can partition ... into ... tens and ... ones.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;">  </div> <div style="margin-left: 20px;"> <p>80 \div 4 = 20</p> <p>4 \div 4 = 1</p> <p>84 \div 4 = 21</p> </div> </div> <table border="1" style="margin-top: 10px; width: 100%; text-align: center;"> <thead> <tr> <th style="background-color: #fff9c4;">Tens</th> <th style="background-color: #f8bbd0;">Ones</th> </tr> </thead> <tbody> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </tbody> </table>	Tens	Ones									<p>I cannot share the hundreds/tens equally, so I need to exchange 1 ... for 10 ...</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;">  </div> <div style="margin-left: 20px;"> <p>300 \div 3 = 100</p> <p>120 \div 3 = 40</p> <p>15 \div 3 = 5</p> <p>435 \div 3 = 145</p> </div> </div> <table border="1" style="margin-top: 10px; width: 100%; text-align: center;"> <thead> <tr> <th style="background-color: #c8e6c9;">Hundreds</th> <th style="background-color: #fff9c4;">Tens</th> <th style="background-color: #f8bbd0;">Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p><i>Note: In the original image, a red box highlights the exchange of 1 hundred for 10 tens, and another red box highlights the exchange of 1 ten for 10 ones.</i></p>	Hundreds	Tens	Ones												
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Hundreds	Tens	Ones																									

Division

Progression of skills	Key representations			
<p>Divide by 10 and 100</p> <p>Encourage children to notice that dividing by 100 is the same as dividing by 10 twice.</p>	<p>When I divide by 10, the digits move 1 place value column to the right. ... is one-tenth the size of ...</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>$2 \div 10 = 0.2$</p> </div> <div style="text-align: center;">  <p>$12 \div 10 = 1.2$</p> </div> </div>		<p>When I divide by 100, the digits move 2 place value columns to the right. ... is one-hundredth the size of ...</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>$2 \div 100 = 0.02$</p> </div> <div style="text-align: center;">  <p>$12 \div 100 = 0.12$</p> </div> </div>	

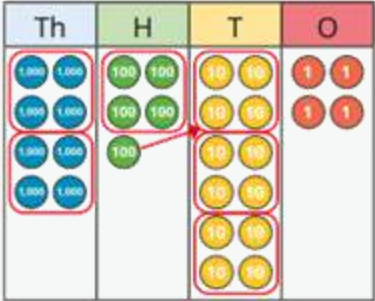
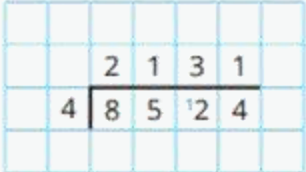
Division

<p>Year 5</p>	<ul style="list-style-type: none"> • Divide numbers mentally drawing upon known facts. • 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. • Divide whole numbers and those involving decimals by 10, 100 and 1,000 		
<p>Progression of skills</p>	<p>Key representations</p>		
<p>Mental strategies</p>	<p>I can partition ... into ... and ... to help me to divide more easily.</p> 	<p>I can show groups of ... on a number line.</p> 	<p>To divide by ..., I can divide by ... and then divide the result by ...</p> $436 \div 4 = 436 \div 2 \div 2$ $436 \div 2 = 218$ $218 \div 2 = 109$
<p>Divide numbers up to 4 digits by a 1-digit number</p> <p>The short division method is introduced for the first time.</p>	<p>There are ... groups of ... hundreds/tens/ones/ in ... I can exchange 1 ... for 10 ...</p> 		





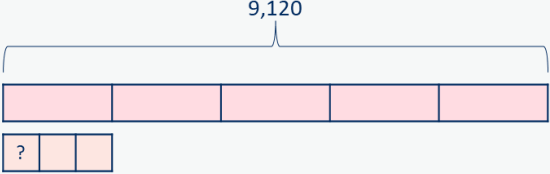
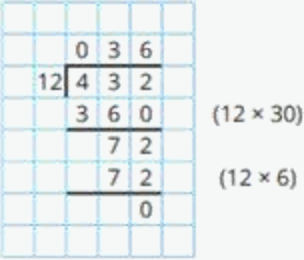
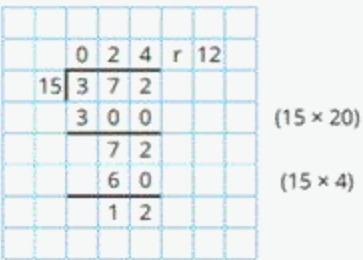
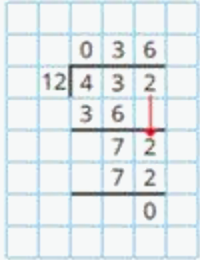
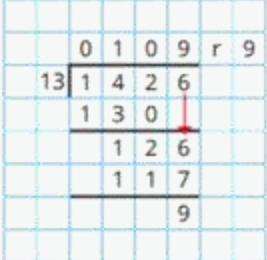



Division

Progression of skills	Key representations																																																		
<p>Divide by 10, 100 and 1,000</p> <p>Encourage children to notice that dividing by 100 is the same as dividing by 10 twice, and that dividing by 1,000 is the same as dividing by 10 three times.</p>	<p>To divide by 10/100/1,000, I move all the digits ... places to the right. ... is one-tenth/one-hundredth/one-thousandth the size of ...</p> <table border="1" data-bbox="582 376 1006 468"> <tr><th>Th</th><th>H</th><th>T</th><th>O</th><th>Tth</th><th>Hth</th></tr> <tr><td></td><td>●</td><td>●●</td><td>●</td><td></td><td></td></tr> </table> <p data-bbox="1048 511 1272 548">$120 \div 10 = 12$</p> <table border="1" data-bbox="582 482 1006 574"> <tr><th>Th</th><th>H</th><th>T</th><th>O</th><th>Tth</th><th>Hth</th></tr> <tr><td></td><td></td><td>●</td><td>●●</td><td>●</td><td></td></tr> </table> <p data-bbox="1048 619 1297 656">$120 \div 100 = 1.2$</p> <table border="1" data-bbox="582 588 1006 679"> <tr><th>Th</th><th>H</th><th>T</th><th>O</th><th>Tth</th><th>Hth</th></tr> <tr><td></td><td></td><td></td><td>●</td><td>●●</td><td>●</td></tr> </table> <p data-bbox="1048 733 1342 771">$120 \div 1,000 = 0.12$</p> <table border="1" data-bbox="582 694 1006 785"> <tr><th>Th</th><th>H</th><th>T</th><th>O</th><th>Tth</th><th>Hth</th></tr> <tr><td></td><td></td><td></td><td></td><td>●</td><td>●●</td></tr> </table>		Th	H	T	O	Tth	Hth		●	●●	●			Th	H	T	O	Tth	Hth			●	●●	●		Th	H	T	O	Tth	Hth				●	●●	●	Th	H	T	O	Tth	Hth					●	●●	
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<p>Fraction of an amount</p> <p>Bar models support children to understand that to find a fraction of an amount, we divide by the denominator and multiply by the numerator.</p>	<p>To find $\frac{\square}{\square}$ of ... , I need to divide by ... and multiply by ...</p> <table border="1" data-bbox="582 953 965 1031"> <tr><td>●●</td><td>●●</td><td>●●</td><td>●●</td><td>●●</td></tr> <tr><td>●●</td><td>●●</td><td>●●</td><td>●●</td><td>●●</td></tr> </table> <p data-bbox="582 1068 741 1153">$\frac{1}{5}$ of 20 =</p> <p data-bbox="582 1182 741 1268">$\frac{3}{5}$ of 20 =</p> <table border="1" data-bbox="990 953 1317 1031"> <tr><td>●●</td><td>●●</td><td>●●</td><td>●●</td></tr> <tr><td>●</td><td>●</td><td>●</td><td>●</td></tr> </table> <p data-bbox="990 1068 1156 1153">$\frac{1}{4}$ of 84 =</p> <p data-bbox="990 1182 1156 1268">$\frac{3}{4}$ of 84 =</p>	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●	●	●	●	<p>If $\frac{1}{\square}$ is ... , then the whole is ... \times ...</p> <table border="1" data-bbox="1348 891 1649 1025"> <tr><td colspan="5">?</td></tr> <tr><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td></tr> </table> <p data-bbox="1748 953 1943 1025">$\frac{1}{5}$ of ___ = 6</p> <table border="1" data-bbox="1348 1062 1690 1239"> <tr><td colspan="7">?</td></tr> <tr><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td></tr> <tr><td colspan="4">24</td><td></td><td></td><td></td></tr> </table> <p data-bbox="1748 1110 1951 1182">$\frac{4}{7}$ of ___ = 24</p>	?					6	6	6	6	6	?							■	■	■	■	■	■	■	24						
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Division

<p>Year 6</p>	<ul style="list-style-type: none"> Perform mental calculations, including with mixed operations and large numbers. 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. 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. Divide numbers by 10, 100 and 1,000 giving answers up to three decimal places. Use written division methods in cases where the answer has up to two decimal places. Associate a fraction with division and calculate decimal fraction equivalents. Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] Solve problems involving the calculation of percentages.
<p>Progression of skills</p>	<p>Key representations</p>
<p>Short division</p> <p>Encourage children to interpret remainders in context, for example knowing that “4 remainder 1” could mean 4 complete boxes with 1 left over so 5 boxes will be needed.</p>	<p>There are ... groups of ... hundreds/tens/ones/ in ... I can exchange 1 ... for 10 ...</p>  

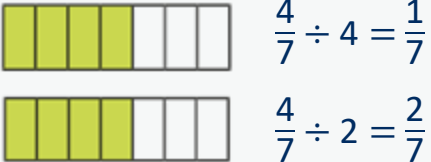

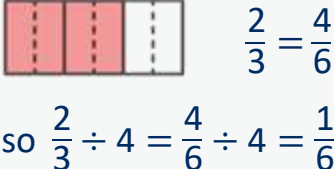
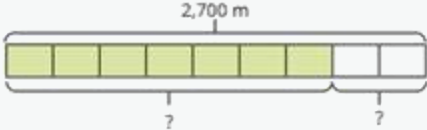
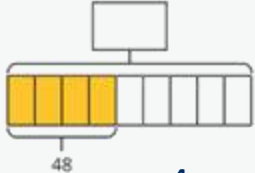
Division

Progression of skills	Key representations	
<p>Mental strategies</p> <p>Include partitioning and number line strategies outlined in Y5 as well as division using factors.</p>	<p>To divide by ... , I can first divide by ... and then divide the answer by ...</p> <p>$240 \div 60 = 240 \div 10 \div 6$</p> <p>240 →  → <input type="text"/> →  → <input type="text"/></p> <p>$480 \div 24 = 480 \div 4 \div 6$</p> <p>480 →  → <input type="text"/> →  → <input type="text"/></p> <p>$9,120 \div 15 = 9,120 \div 5 \div 3$</p> <p></p>	
<p>Long division</p> <p>The long division method is introduced for the first time. Two alternative methods are shown.</p>	<p>Method 1</p> <p></p> <p></p>	<p>Method 2</p> <p></p> <p></p>
<p>Order of operations</p> <p>Calculations in brackets should be done first, then powers. Multiplication and division should be performed before addition and subtraction.</p>	<p>... has greater priority than ..., so the first part of the calculation I need to do is ...</p> <p></p> <p></p> <p>$(6 + 4) \div 2 = 5$</p> <p></p> <p>$6 + 4 \div 2 = 8$</p>	



Division

Progression of skills	Key representations																																																			
<p>Divide by 10, 100 and 1,000</p> <p>Encourage children to notice that dividing by 100 is the same as dividing by 10 twice, and that dividing by 1,000 is the same as dividing by 10 three times.</p>	<p>To divide by ... , I move the digits ... places to the right.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><th>H</th><th>T</th><th>O</th><th>Tth</th><th>Hth</th><th>Thth</th></tr> <tr><td>●●</td><td>●</td><td>●●</td><td></td><td></td><td></td></tr> </table> <div style="text-align: center;"> <p>↓ +1,000</p> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><th>H</th><th>T</th><th>O</th><th>Tth</th><th>Hth</th><th>Thth</th></tr> <tr><td></td><td></td><td></td><td>●●</td><td>●</td><td>●●</td></tr> </table> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 30%;"> <p>$312 \div 10 = 31.2$</p> <p>$312 \div 100 = 3.12$</p> <p>$312 \div 1,000 = 0.312$</p> </div> <div style="width: 30%;"> <p>$906 \div 10 = 90.6$</p> <p>$906 \div 100 = 9.06$</p> <p>$906 \div 1,000 = 0.906$</p> </div> </div>		H	T	O	Tth	Hth	Thth	●●	●	●●				H	T	O	Tth	Hth	Thth				●●	●	●●																										
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<p>Divide decimals by integers</p> <p>This is the first time children divide decimals by numbers other than 10, 100 or 1,000</p>	<p>I know that ... \div ... = ..., so I also know that ... \div ... = ...</p> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>10</td><td>1</td><td>1</td><td>1</td></tr> <tr><td>10</td><td>1</td><td>1</td><td>1</td></tr> <tr><td>10</td><td>1</td><td>1</td><td>1</td></tr> </table> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>1</td><td>0.1</td><td>0.1</td><td>0.1</td></tr> <tr><td>1</td><td>0.1</td><td>0.1</td><td>0.1</td></tr> <tr><td>1</td><td>0.1</td><td>0.1</td><td>0.1</td></tr> </table> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>0.1</td><td>0.01</td><td>0.01</td><td>0.01</td></tr> <tr><td>0.1</td><td>0.01</td><td>0.01</td><td>0.01</td></tr> <tr><td>0.1</td><td>0.01</td><td>0.01</td><td>0.01</td></tr> </table> </div> <p style="margin-top: 10px;">$39 \div 3 = 13$ $3.9 \div 3 = 1.3$ $0.39 \div 3 = 0.13$</p>	10	1	1	1	10	1	1	1	10	1	1	1	1	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.01	0.01	0.01	0.1	0.01	0.01	0.01	0.1	0.01	0.01	0.01	<p>I need to exchange 1 ... for 10 ...</p> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><th>O</th><th>Tth</th><th>Hth</th></tr> <tr><td>●●●</td><td>●●●●</td><td>●●●●</td></tr> </table> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>1</td><td>3</td><td>3</td></tr> <tr><td>4</td><td>5</td><td>12</td></tr> </table> </div>	O	Tth	Hth	●●●	●●●●	●●●●	1	3	3	4	5	12		
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<p>Decimal and fraction equivalents</p>	<p>The fraction ... is equivalent to the decimal ...</p> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><th colspan="5">1</th></tr> <tr><td colspan="2">$\frac{1}{2}$</td><td colspan="3">$\frac{1}{2}$</td></tr> <tr><td>$\frac{1}{4}$</td><td>$\frac{1}{4}$</td><td>$\frac{1}{4}$</td><td colspan="2">$\frac{1}{4}$</td></tr> <tr><td>$\frac{1}{5}$</td><td>$\frac{1}{5}$</td><td>$\frac{1}{5}$</td><td>$\frac{1}{5}$</td><td>$\frac{1}{5}$</td></tr> <tr><td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td></tr> </table> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><th colspan="5">1</th></tr> <tr><td colspan="2">0.5</td><td colspan="3">0.5</td></tr> <tr><td>0.25</td><td>0.25</td><td>0.25</td><td colspan="2">0.25</td></tr> <tr><td>0.2</td><td>0.2</td><td>0.2</td><td>0.2</td><td>0.2</td></tr> <tr><td>0.1</td><td>0.1</td><td>0.1</td><td>0.1</td><td>0.1</td></tr> </table> </div> <p style="margin-top: 10px;">$\frac{1}{5} = 0.2$ $\frac{2}{5} = 0.4$ $\frac{3}{5} = 0.6$</p> <div style="text-align: right; margin-top: 20px;"> <p>$\frac{3}{4}$ is equal to $\frac{\square}{100}$</p> <p>$\frac{3}{4} = \frac{75}{100} = 0.75$</p> </div>		1					$\frac{1}{2}$		$\frac{1}{2}$			$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$		$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	1					0.5		0.5			0.25	0.25	0.25	0.25		0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
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<p>Divide a fraction by an integer</p> <p>This is the first time children divide fractions by an integer.</p>	<p>... ones divided by 2 is ... ones so ... sevenths divided by 2 is ... sevenths.</p>  <p>$\frac{4}{7} \div 4 = \frac{1}{7}$</p> <p>$\frac{4}{7} \div 2 = \frac{2}{7}$</p>	<p>I am dividing by ... , so I can split each part into ... equal parts.</p>  <p>$\frac{1}{3} \div 2 = \frac{1}{6}$</p>	<p>... is equivalent to ... so ... \div ... = ... \div ...</p>  <p>$\frac{2}{3} = \frac{4}{6}$</p> <p>so $\frac{2}{3} \div 4 = \frac{4}{6} \div 4 = \frac{1}{6}$</p>
<p>Fraction of an amount</p> <p>Children divide and multiply to find fractions of an amount. Bar models can still be used to support understanding where needed.</p>	<p>To find $\frac{1}{\square}$ I divide by ...</p> <p>$\frac{1}{2}$ of 36 = $36 \div 2$</p> <p>$\frac{1}{12}$ of 36 = $36 \div 12$</p>	<p>If $\frac{1}{\square}$ is equal to ..., then $\frac{\square}{\square}$ are equal to ...</p>  <p>$\frac{7}{9}$ of 2,700 = $\frac{1}{9}$ of 2,700 \times 7</p>	<p>If $\frac{\square}{\square}$ is equal to ..., then the whole is equal to ...</p>  <p>$\frac{4}{9}$ of ___ = 48</p>

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<p>Calculate percentages</p> <p>Children first learn how to find 1%, 10%, 20%, 25% and 50% before using multiples of these amounts to find any percentage.</p>	<p>There are ... lots of ... % in 100%</p> <p>To find ... %, I need to divide by ...</p> <table border="1" data-bbox="576 368 1085 482"> <tr><td colspan="4">100%</td></tr> <tr><td colspan="2">50%</td><td colspan="2">50%</td></tr> <tr><td>25%</td><td>25%</td><td>25%</td><td>25%</td></tr> </table> <p>50% of ... = ... ÷ 2</p> <p>25% of ... = ... ÷ 4</p>	100%				50%		50%		25%	25%	25%	25%	<p>... % is made up of ... %, and ... %</p> <table border="1" data-bbox="1147 357 1910 445"> <tr><td colspan="10">100%</td></tr> <tr><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td></tr> </table> <p>To find 30%, I can find 10% and then multiply it by 3</p> <p>To find 23%, I can use 10% × 2 and 1% × 3</p> <p>To find 99%, I can find 1%, then subtract from 100%</p>	100%										10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
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<p>Calculations involving ratio</p> <p>Encourage children to see the multiplicative relationship between ratios. They will need to multiply or divide each value by the same number to keep the ratio equivalent. Double number lines and ratio tables help children to see both horizontal and vertical multiplicative relationships.</p>	<p>For every ... , there are ...</p> <p>For every 6 children on a school trip, there is 1 adult.</p> <p>adults </p> <p>children </p> <table border="1" data-bbox="1504 765 1827 958"> <tr><td colspan="2">÷ 6</td></tr> <tr><th>Adults</th><th>Children</th></tr> <tr><td>1</td><td>6</td></tr> <tr><td>2</td><td>12</td></tr> <tr><td>3</td><td>18</td></tr> </table> <p>÷ 3 ÷ 3</p> <p>÷ 6</p> <p>The ratio of children to adults is 6 : 1</p> <table data-bbox="1375 1129 1908 1282"> <tr><td>Adults</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr><td>Children</td><td>0</td><td>6</td><td>12</td><td>18</td><td></td><td></td><td></td></tr> </table>		÷ 6		Adults	Children	1	6	2	12	3	18	Adults	0	1	2	3	4	5	6	Children	0	6	12	18									
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