

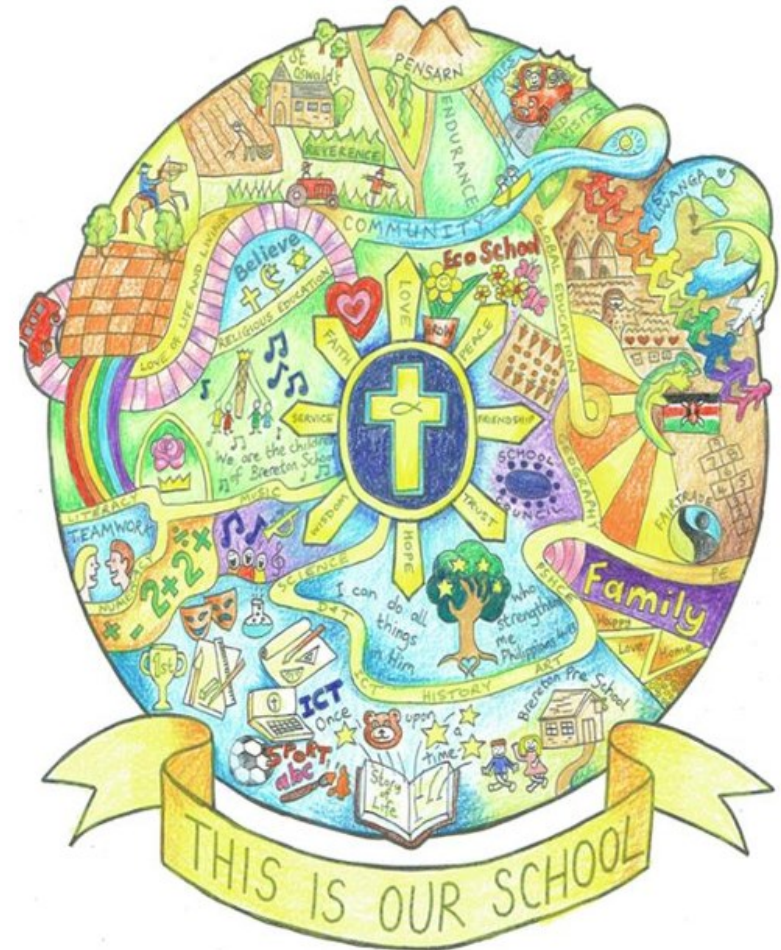


BREERTON CHURCH OF ENGLAND
PRIMARY SCHOOL


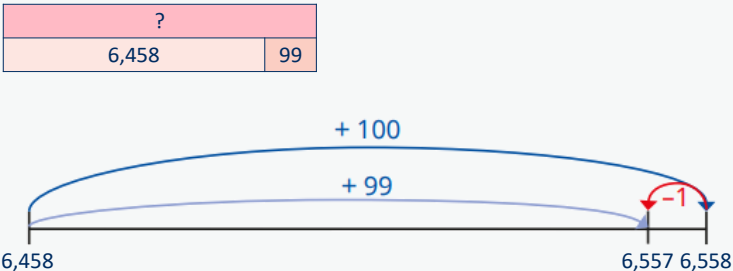
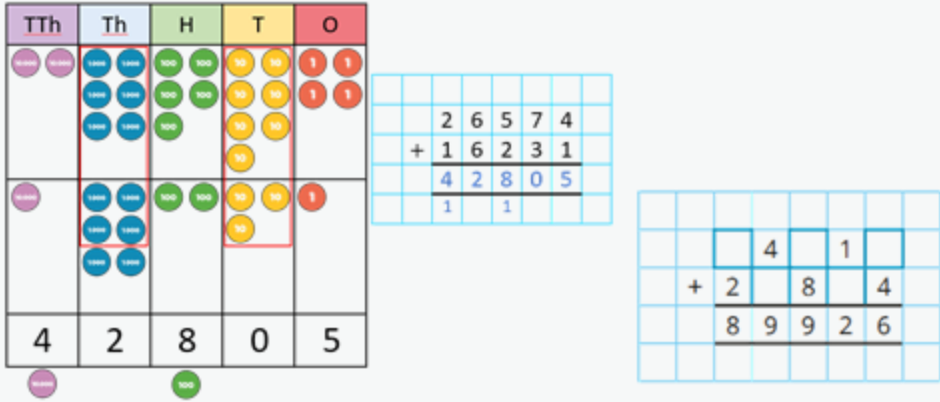


Chester Diocesan Academies Trust

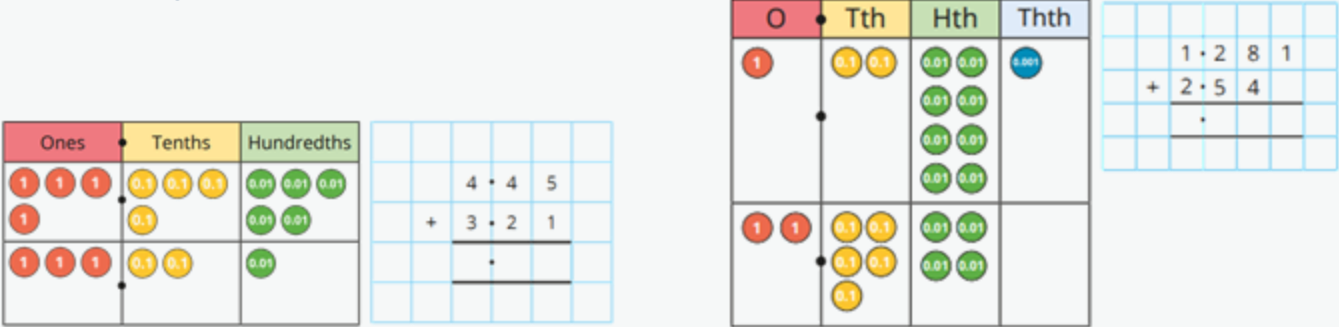

Year 5
Maths Calculation Policy



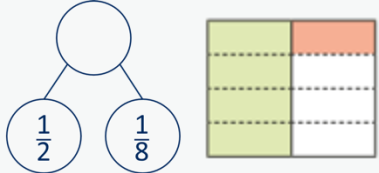
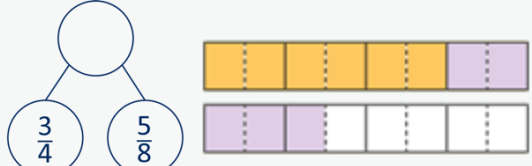

Addition

| | | |
|--|---|--|
| <p>Year 5</p> | <ul style="list-style-type: none"> Add whole numbers with more than 4 digits, including using formal written methods. Add numbers mentally with increasingly large numbers. Add decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 Add fractions with the same denominator, and denominators that are multiples of the same number. | |
| <p>Progression of skills</p> | <p>Key representations</p> | |
| <p>Add using mental strategies</p> <p>Add 1s, 10s, 100s, etc. to any number. Use number bonds and related facts.</p> |  <p>48,650 + 300 = 48,650 + 30,000 = 48,650 + 30 =</p> | <p>To add ..., I can add ... then subtract ...</p>  |
| <p>Add whole numbers with more than 4 digits</p> <p>Encourage children to estimate and use inverse operations to check answers to calculations.</p> | <p>I can exchange 10 ... for 1 ...</p>  | |

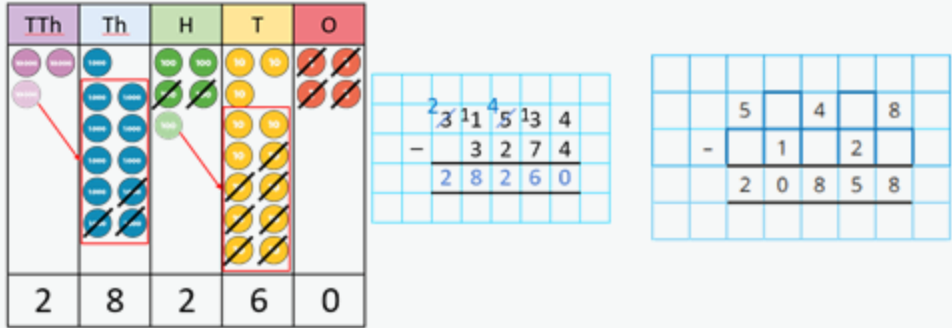
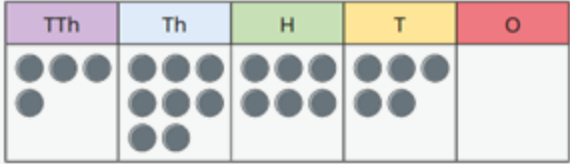
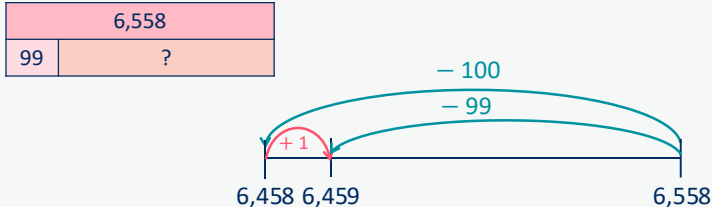
Addition

| Progression of skills | Key representations |
|--|---|
| <p>Add decimals with up to 2 decimal places</p> <p>Progress from the same number of decimal places to a different number of decimal places, and from no exchange to exchange.</p> | <p>I do/do not need to make an exchange because ... I can exchange 10 ... for 1 ...</p>  |
| <p>Complements to 1</p> <p>Pairs of numbers with up to 3 decimal places which total 1</p> <p>Encourage children to make links with bonds to 10 and complements to 100 and 1,000</p> |  <p> $0.3 + \square = 1$ $0.35 + \square = 1$ </p> <p> $4 + 6 = 10$ $0.4 + 0.6 = 1$ $44 + 56 = 100$ $0.44 + 0.56 = 1$ $444 + 556 = 1,000$ $0.444 + 0.556 = 1$ </p> |

Addition

| Progression of skills | Key representations |
|---|--|
| <p>Add fractions with denominators that are a multiple of one another</p> <p>Encourage children to convert fractions to the same denominator before adding.</p> <p>Progress from adding fractions within 1 whole to adding fractions beyond 1 whole.</p> | <p>The denominator has been multiplied by ..., so the numerator needs to be multiplied by... for the fractions to be equivalent.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  $\frac{1}{2} + \frac{1}{8} = \frac{4}{8} + \frac{1}{8} = \frac{5}{8}$ </div> <div style="text-align: center;">  $\frac{3}{4} + \frac{5}{8} = \frac{6}{8} + \frac{5}{8} = \frac{11}{8} = 1\frac{3}{8}$ </div> </div> <div style="margin-top: 20px;">  $\frac{1}{4} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$ </div> |



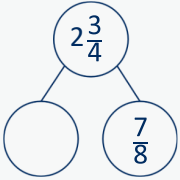

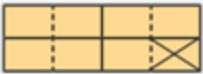
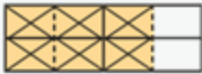
Subtraction

| | | |
|---|---|---|
| <p>Year 5</p> | <ul style="list-style-type: none"> Subtract whole numbers with more than 4 digits. Subtract numbers mentally with increasingly large numbers. Subtract decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 Subtract fractions with the same denominator, and denominators that are multiples of the same number. | |
| <p>Progression of skills</p> | <p>Key representations</p> | |
| <p>Subtract whole numbers with more than 4 digits</p> <p>Encourage children to estimate and use inverse operations to check answers to calculations.</p> | <p>I can exchange 1 ... for 10 ...</p>  | |
| <p>Subtract using mental strategies</p> <p>Subtract 1s, 10s, 100s etc from any number. Use number bonds and related facts.</p> |  $48,650 - 300 =$ $48,650 - 30,000 =$ $48,650 - 30 =$ | <p>To subtract ..., I can subtract ... then add ...</p>  |

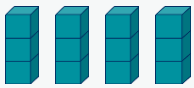


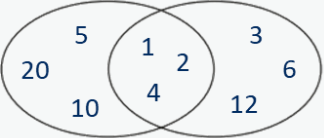






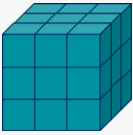
Subtraction

| Progression of skills | Key representations |
|--|---------------------|
| <p>Subtract decimals with up to 2 decimal places</p> <p>Progress from the same number of decimal places to a different number of decimal places and from no exchange to exchange.</p> | |
| <p>Complements to 1</p> <p>Encourage children to make links with bonds to 10 and complements to 100 and 1,000 when finding a missing part or subtracting from 1</p> | |

Subtraction

| Progression of skills | Key representations |
|---|---|
| <p>Subtract fractions with denominators that are a multiple of one another</p> <p>Convert fractions to the same denominator before subtracting. Progress from subtracting fractions within 1 whole to subtracting from a mixed number.</p> | <p>The denominator has been multiplied by ..., so the numerator needs to be multiplied by... for the fractions to be equivalent.</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  $\frac{1}{3} - \frac{1}{15} = \frac{5}{15} - \frac{1}{15} = \frac{4}{15}$ </div> <div style="margin-right: 20px;">  $\frac{2}{3} - \frac{2}{9} = \frac{6}{9} - \frac{2}{9} = \frac{4}{9}$ </div> <div>     </div> </div> |

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="576 903 1011 1025"> <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>  $1 \times 1 \times 1$ $1^3 = 1$  $2 \times 2 \times 2$ $2^3 = 8$  $3 \times 3 \times 3$ $3^3 = 27$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

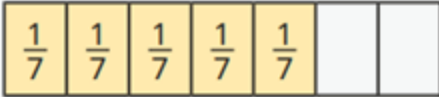
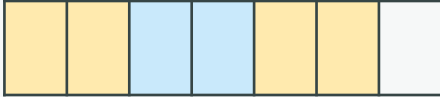
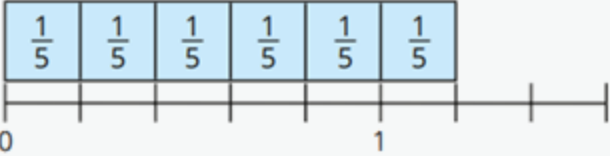
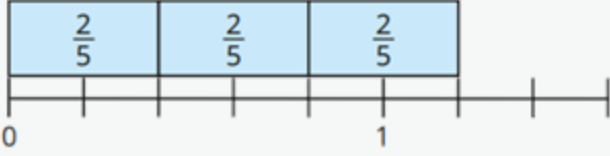
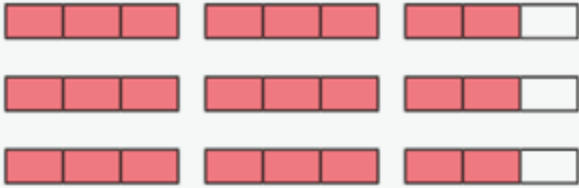
Multiplication

| 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>1,000</td> <td>100</td> <td>10 10 10</td> <td>1 1</td> <td></td> </tr> <tr> <td>100</td> <td>100</td> <td>10 10 10</td> <td>1 1</td> <td></td> </tr> <tr> <td>100</td> <td>100</td> <td>10 10</td> <td>1 1</td> <td></td> </tr> </tbody> </table> <div style="border: 1px solid black; padding: 5px;"> <table style="border-collapse: collapse; text-align: center;"> <tr><td style="width: 20px;"></td><td style="width: 20px;">1</td><td style="width: 20px;">1</td><td style="width: 20px;">5</td><td style="width: 20px;">2</td></tr> <tr><td style="text-align: right;">x</td><td></td><td></td><td></td><td>3</td></tr> <tr><td colspan="5" style="border-top: 1px solid black;"></td></tr> <tr><td colspan="5" style="border-top: 1px solid black;"></td></tr> </table> </div> </div> | | | Th | H | T | O | 1,000 | 100 | 10 10 10 | 1 1 | | 100 | 100 | 10 10 10 | 1 1 | | 100 | 100 | 10 10 | 1 1 | | | 1 | 1 | 5 | 2 | x | | | | 3 | | | | | | | | | | | | | | | | | | | | | | | | |
| | Th | H | T | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1,000 | 100 | 10 10 10 | 1 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | 100 | 10 10 10 | 1 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | 100 | 10 10 | 1 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | 1 | 5 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| x | | | | 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;">x</td> <td style="width: 40px;">40</td> <td style="width: 40px;">4</td> </tr> <tr> <td>30</td> <td>1,200</td> <td>120</td> </tr> <tr> <td>2</td> <td>80</td> <td>8</td> </tr> </table> <div style="border: 1px solid black; padding: 5px;"> <table style="border-collapse: collapse; text-align: center;"> <tr><td style="width: 20px;"></td><td style="width: 20px;">3</td><td style="width: 20px;">2</td></tr> <tr><td style="text-align: right;">x</td><td></td><td>3</td></tr> <tr><td colspan="3" style="border-top: 1px solid black;"></td></tr> <tr><td colspan="3" style="border-top: 1px solid black;"></td></tr> </table> </div> </div> <p>$32 \times 44 = 1,200 + 80 + 120 + 8$ $32 \times 44 = 1,408$</p> | x | 40 | 4 | 30 | 1,200 | 120 | 2 | 80 | 8 | | 3 | 2 | x | | 3 | | | | | | | <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;">x</td> <td style="width: 40px;">10</td> <td style="width: 40px;">3</td> </tr> <tr> <td>30</td> <td>300</td> <td>90</td> </tr> <tr> <td>2</td> <td>20</td> <td>6</td> </tr> </table> <div style="border: 1px solid black; padding: 5px;"> <table style="border-collapse: collapse; text-align: center;"> <tr><td style="width: 20px;"></td><td style="width: 20px;">3</td><td style="width: 20px;">2</td></tr> <tr><td style="text-align: right;">x</td><td></td><td>3</td></tr> <tr><td colspan="3" style="border-top: 1px solid black;"></td></tr> <tr><td colspan="3" style="border-top: 1px solid black;"></td></tr> </table> </div> </div> <p>$300 + 90 + 20 + 6 = 416$</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: 20px;">3</td><td style="width: 20px;">2</td></tr> <tr><td style="text-align: right;">x</td><td></td><td>3</td></tr> <tr><td colspan="3" style="border-top: 1px solid black;"></td></tr> <tr><td colspan="3" style="border-top: 1px solid black;"></td></tr> </table> <div style="margin-left: 10px;"> <p>(32×3) (32×10)</p> </div> </div> | x | 10 | 3 | 30 | 300 | 90 | 2 | 20 | 6 | | 3 | 2 | x | | 3 | | | | | | | | 3 | 2 | x | | 3 | | | | | | |
| x | 40 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | 1,200 | 120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 80 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| x | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| x | 10 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | 300 | 90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 20 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| x | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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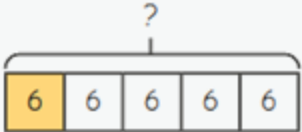
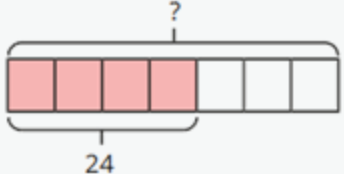
Multiplication

| 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 | | | | ● ● | ● ● | ● ● |
| M | HTh | TTh | Th | H | T | O | | | | | | | | | | | | | | | | | | | | | |
| | | | | ● ● | ● ● | ● ● | | | | | | | | | | | | | | | | | | | | | |
| Th | H | T | O | Tth | Hth | | | | | | | | | | | | | | | | | | | | | | |
| | | | ● ● | ● ● | ● ● | | | | | | | | | | | | | | | | | | | | | | |
| <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> | | | | | | | | | | | | | | | | | | | | | | | | | | |

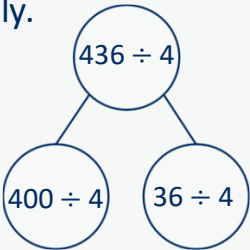
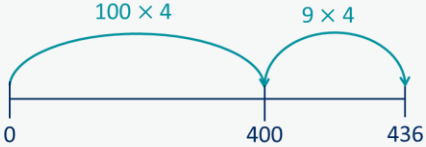
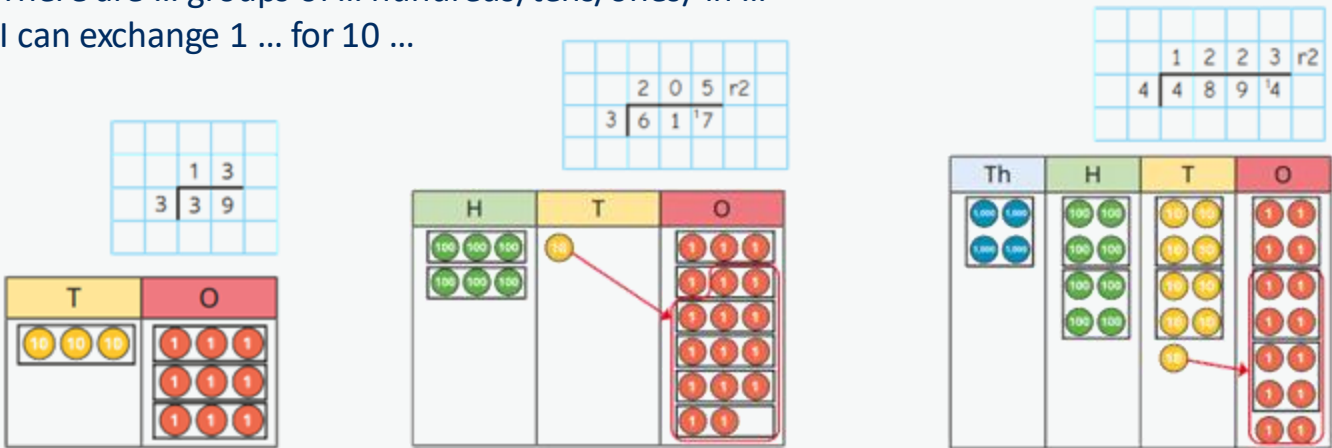
Multiplication

| 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 $\begin{array}{ c } \hline \square \\ \hline \square \\ \hline \end{array}$ into $\begin{array}{ c } \hline \square \\ \hline \end{array}$ and $\begin{array}{ c } \hline \square \\ \hline \square \\ \hline \end{array}$</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> |

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 | | | | | ● | ●● | | | |
| 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 1071 741 1150">$\frac{1}{5}$ of 20 =</p> <p data-bbox="582 1179 741 1259">$\frac{3}{5}$ of 20 =</p> <table border="1" data-bbox="990 953 1313 1031"> <tr><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td></tr> <tr><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr> </table> <p data-bbox="990 1071 1156 1150">$\frac{1}{4}$ of 84 =</p> <p data-bbox="990 1179 1156 1259">$\frac{3}{4}$ of 84 =</p> | ●● | ●● | ●● | ●● | ●● | ●● | ●● | ●● | ●● | ●● | 10 | 10 | 10 | 10 | 10 | 1 | 1 | 1 | 1 | 1 | <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="1752 953 1939 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="3">24</td><td colspan="4"></td></tr> </table> <p data-bbox="1752 1110 1939 1182">$\frac{4}{7}$ of ___ = 24</p> | ? | | | | | 6 | 6 | 6 | 6 | 6 | ? | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | 24 | | | | | | |
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| 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |