

Multiplication and Division Calculation Policy - [linked to White Rose](#) (tailored to fit our school)

[Link to models and images overview](#) Our familiar representation to support new learning progresses from use of arrays, to Base 10, to place value counters (when proportionality of base 10 system is secured) - once they secure concepts, they can work in the abstract.


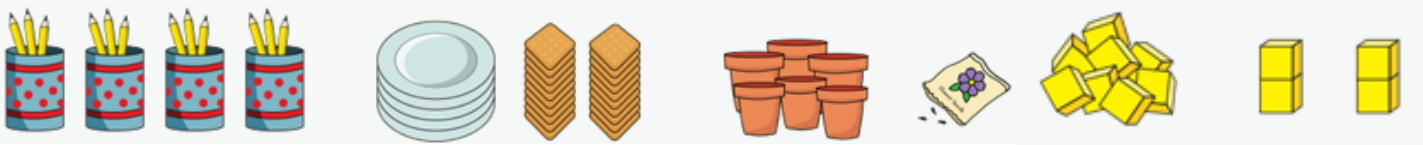
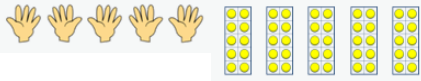
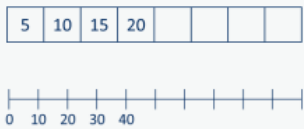
Progression of skills:

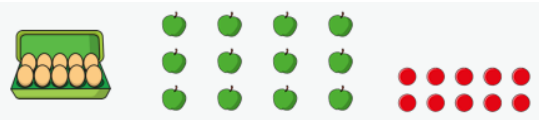
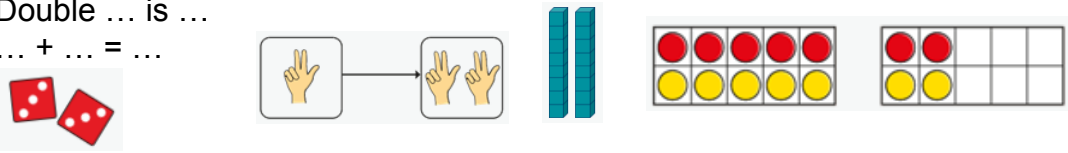
Year Group:	Multiplication Progression:	Division Progression:
Nursery	<ul style="list-style-type: none"> Continue with counting and subitising skills as a foundation for later work on equal groups. (see addition and subtraction) 	<ul style="list-style-type: none"> Continue with counting and subitising skills as a foundation for later work on equal groups. (see addition and subtraction)
Reception	<ul style="list-style-type: none"> Double to 10 Make equal groups 	<ul style="list-style-type: none"> Sharing Grouping
Year 1	<ul style="list-style-type: none"> Count in 2s, 5s and 10s Add equal groups Make arrays Make doubles 	<ul style="list-style-type: none"> Make equal groups – grouping Make equal groups – sharing Find a half Find a quarter
Year 2	<ul style="list-style-type: none"> Link repeated addition and multiplication Use arrays Double The 2 times-table The 10 times-table The 5 times-table Missing numbers 	<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"> The 3 times-table The 4 times-table The 8 times-table Related facts Multiply a 2-digit number by a 1-digit number - no exchange Multiply a 2-digit number by a 1-digit number - with exchange Scaling Correspondence problems 	<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
Year 4	<ul style="list-style-type: none"> Times-table facts to 12×12 Multiply by 1 and 0 Multiply 3 numbers Factor pairs Multiply by 10 and 100 Related facts 	<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

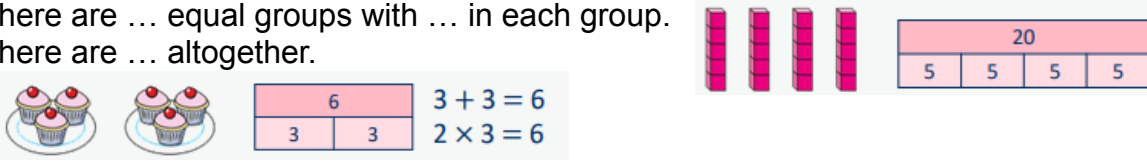

	<ul style="list-style-type: none"> • Mental strategies • Multiply a 2 or 3-digit number by a 1-digit number • Scaling • Correspondence problems 	
Year 5	<ul style="list-style-type: none"> • Multiples and factors • Square and cube numbers • Multiply numbers up to 4 digits by a 1-digit number • Multiply numbers up to 4 digits by a 2-digit number • Multiply by 10, 100 and 1,000 • Mental strategies • Multiply fractions by a whole number • Multiply mixed numbers by a whole number • Find the whole 	<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
Year 6	<ul style="list-style-type: none"> • Multiply numbers up to 4 digits by a 2-digit number • Multiply by 10, 100 and 1,000 • Order of operations • Multiply decimals by integers • Multiply fractions by fractions • Find the whole • Calculations involving ratio 	<ul style="list-style-type: none"> • Short division then 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 • Calculate percentages • Calculations involving ratio

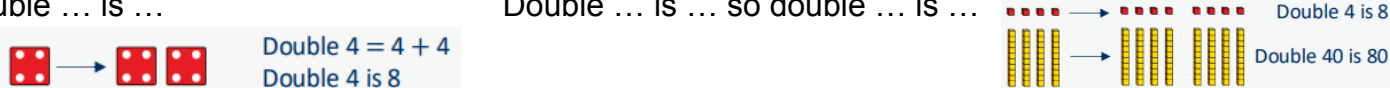

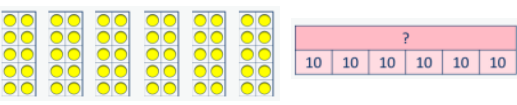

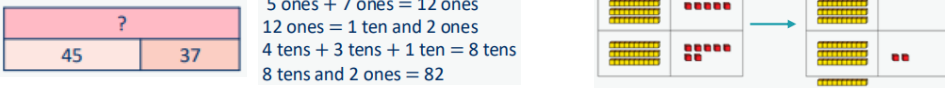

Click on the links to access the required year group and operation:		
Reception	Multiplication	Division
Year 1	Multiplication	Division
Year 2	Multiplication	Division
Year 3	Multiplication	Division
Year 4	Multiplication	Division
Year 5	Multiplication	Division
Year 6	Multiplication	Division

MULTIPLICATION

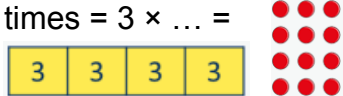
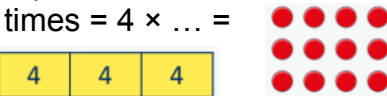
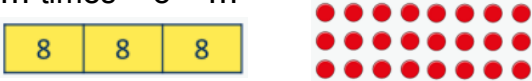


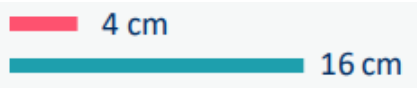
<p>Reception</p>	<ul style="list-style-type: none"> • Have a deep understanding of number to 10, including the composition of each number. • Subitise (recognise quantities without counting) up to 5 • Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and some 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>Double to 10 Prompt children to notice that double means twice as many and to notice that there are two equal groups.</p>	<p>Double ... is is double ...</p> 																																																				
<p>Make equal groups 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> 																																																				
<p>Year 1</p>	<ul style="list-style-type: none"> • Count in multiples of twos, fives and tens. • Solve one-step problems involving multiplication, using concrete objects, pictorial representations and arrays with the support of the teacher. 																																																				
<p>Progression of skills</p>	<p>Key representations</p>																																																				
<p>Count in 2s, 5s and 10s Begin by counting objects that naturally come in 2s, 5s and 10s, for example pairs of socks or fingers.</p>	<p>There are ... equal groups of ... There are ... altogether.</p> 	<p>Continue to colour in ...s What do you notice?</p> <table border="1" data-bbox="1178 1262 1435 1390"> <tbody> <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> <tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr> <tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td></tr> </tbody> </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	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	<p>Complete the number track/number line by counting in ...s.</p> 
1	2	3	4	5	6	7	8	9	10																																												
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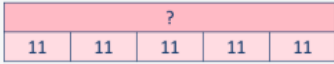
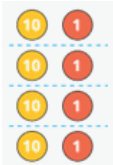



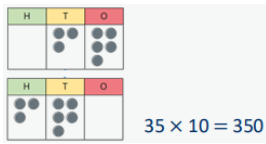
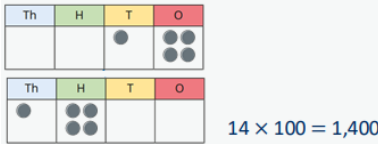
<p>Add equal groups (repeated addition) Children should be able to write a repeated addition to represent equal groups and to draw pictures or use objects to represent a repeated addition.</p>	<p>There are ... groups of ... There are ... altogether.</p> <p>What is the same? What is different?</p> <p>$2 + 2 + 2 =$ $5 + 5 + 5 =$ $10 + 10 + 10 =$</p> <p>$5 + 5 + 5 + 5 = 20$</p> <p>Use objects or a drawing to represent the equal groups and find how many in total.</p>
<p>Make arrays Children use their knowledge of adding equal groups to arrange objects in columns and rows.</p>	<p>There are ... rows of ... There are ... altogether. There are ... columns of ... There are ... altogether.</p> 
<p>Make doubles Children understand that doubles are two equal groups. Children may begin to explore doubles beyond 20 using base 10</p>	<p>Double ... is + ... = ...</p> 


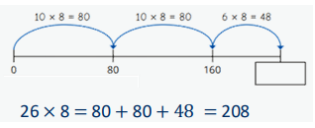

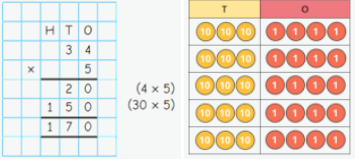
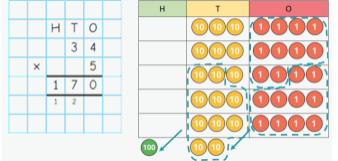
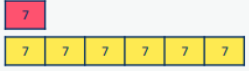
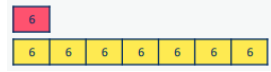
<p style="text-align: center;">Year 2</p>	<ul style="list-style-type: none"> Recall and use multiplication facts for the 2, 5 and 10 multiplication tables. Calculate mathematical statements for multiplication within the multiplication tables and write them using the multiplication (\times) and equals ($=$) signs. Show that multiplication of two numbers can be done in any order (commutative).
<p>Progression of skills</p>	<p>Key representations</p>
<p>Link repeated addition and multiplication Encourage children to make the link between repeated addition and multiplication.</p>	<p>There are ... equal groups with ... in each group. There are ... altogether.</p>  <p>$3 + 3 = 6$ $2 \times 3 = 6$</p> <p>$5 + 5 + 5 + 5 = 20$ $4 \times 5 = 20$</p>
<p>Use arrays Encourage children to see that multiplication is commutative.</p>	<p>There are ... rows with ... in each row. There are ... columns with ... in each column.</p> <p>I can see ... \times ... and ... \times ...</p>  <p>$3 \text{ lots of } 5 = 15$ $5 + 5 + 5 = 15$</p> <p>$5 \text{ lots of } 3 = 15$ $3 + 3 + 3 + 3 + 3 = 15$</p> <p>$3 \times 5 = 15$ $5 \times 3 = 15$ $3 \times 5 = 5 \times 3$</p>



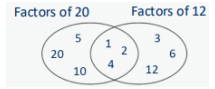
<p>Double Encourage children to make links with related facts.</p>	<p>Double ... is ... Double ... is ... so double ... is ...</p>  <p>Double 4 = 4 + 4 Double 4 is 8</p> <p>Double 40 = 40 + 40 Double 40 is 80</p>
<p>The 2 times-table Encourage daily counting in multiples both forwards and back. Notice that all multiples of 2 are even numbers.</p>	<p>... lots of 2 = ... times 2 is equal to ...</p> <p>... × 2 =</p>  <p>1 × 2 = 2 2 = 1 × 2 2 × 2 = 4 4 = 2 × 2 3 × 2 = 6 6 = 3 × 2</p>
<p>The 10 times-table Encourage daily counting in multiples both forwards and back. Notice the pattern in the numbers.</p>	<p>... lots of 10 = ... times 10 is equal to ...</p> <p>... × 10 =</p>  <p>1 × 10 = 10 10 = 1 × 10 2 × 10 = 20 20 = 2 × 10 3 × 10 = 30 30 = 3 × 10</p>
<p>The 5 times-table Encourage daily counting in multiples both forwards and back. Notice the pattern in the numbers.</p>	<p>... lots of = ... times is equal to ...</p> <p>... × 5 =</p>  <p>1 × 5 = 5 5 = 1 × 5 2 × 5 = 10 10 = 2 × 5 3 × 5 = 15 15 = 3 × 5</p>
<p>Add 2-digit numbers (across ten) Begin to exchange 10 ones for 1 ten.</p>	<p>There are ones, so I do/do not need to make an exchange.</p> <p>... ones = ... ten and ... ones</p>  <p>5 ones + 7 ones = 12 ones 12 ones = 1 ten and 2 ones 4 tens + 3 tens + 1 ten = 8 tens 8 tens and 2 ones = 82</p>
<p>Missing numbers Make links to known facts.</p>	<p>... is equal to ... groups of times ... is equal to ...</p> <p>18 socks, how many pairs? </p> <p><input type="text"/> × 2 = 18 18 = 2 × <input type="text"/></p>



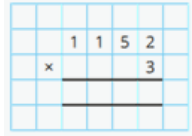
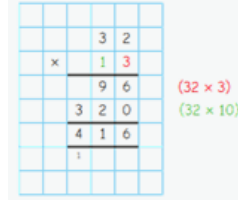
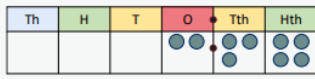
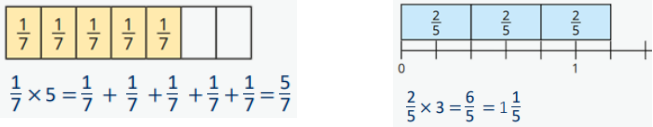
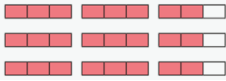
<p>Year 3</p>	<ul style="list-style-type: none"> Recall and use multiplication facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. Solve problems, including missing number problems, involving multiplication, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.
<p>Progression of skills</p>	<p>Key representations</p>

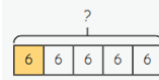
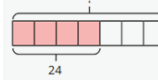
<p>The 3 times-table Encourage daily counting in multiples both forwards and back, along with chanting of times tables.</p>	<p>... groups of 3 = ... \times 3 = 3, ... times = $3 \times \dots =$</p> 	<p>... times 3 is equal to ...</p> <p>$4 \times 3 = 12$ $12 = 4 \times 3$</p>								
<p>The 4 times-table Encourage daily counting in multiples both forwards and back, along with chanting of times tables.</p>	<p>... groups of 4 = ... \times 4 = 4, ... times = $4 \times \dots =$</p> 	<p>... times 4 is equal to ...</p> <p>$3 \times 4 = 12$ $12 = 3 \times 4$</p>								
<p>The 4 times-table Encourage daily counting in multiples both forwards and back, along with chanting of times tables. Encourage children to notice links between the 2, 4, 8 times-tables.</p>	<p>... groups of 8 = ... \times 8 = 8, ... times = $8 \times \dots =$</p> 	<p>... times 8 is equal to ...</p> <p>$3 \times 8 = 24$ $24 = 3 \times 8$</p>								
<p>Related facts Use knowledge of multiplying by 10 to scale times-table facts.</p>	<p>... \times ... ones is equal to ... ones so ... \times ... tens is equal to ... tens.</p>	 <p>$3 \times 4 = 12$ $3 \times 40 = 120$</p>								
<p>Multiply a 2-digit number by a 1-digit number - no exchange Children apply their understanding of partitioning to represent and solve calculations using the expanded method.</p>	<p>... tens multiplied by ... is equal to ... tens. ...ones multiplied by ... is equal to ... ones.</p>	<table border="1" data-bbox="1473 774 1691 925"> <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>$30 \times 2 = 60$ $2 \times 2 = 4$ $32 \times 2 = 64$</p>	Tens	Ones						
Tens	Ones									
<p>Multiply a 2-digit number by a 1-digit number - with exchange Children apply their understanding of partitioning to represent and solve calculations using the expanded method.</p>	<p>... tens multiplied by ... is equal to ... tens. ... ones multiplied by ... is equal to ... ones.</p>	<table border="1" data-bbox="1473 949 1646 1109"> <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> </tbody> </table> <p>$20 \times 4 = 80$ $4 \times 4 = 16$ $24 \times 4 = 96$</p>	Tens	Ones						
Tens	Ones									
<p>Scaling Children focus on multiplication as scaling (... times the size) as opposed to repeated addition.</p>	<p>There are ... times as many ... as ... There are 3 times as many triangles as circles.</p> 	<p>... is ... times the size of is ... times the length/height of...</p> 								
<p>Correspondence problems (How many ways?) Encourage children to work systematically to find all the different possible combinations.</p>	<p>For every ... , there are ... possible ... There are ... \times ... possibilities altogether.</p>	<table border="1" data-bbox="1422 1300 1556 1452"> <thead> <tr> <th>hats</th> <th>scarves</th> </tr> </thead> <tbody> <tr> <td>blue</td> <td></td> </tr> <tr> <td>orange</td> <td></td> </tr> <tr> <td>purple</td> <td></td> </tr> </tbody> </table> <p>$3 \times 2 = 6$</p> <p>For every hat, there are two possible scarves. There are 6 possibilities altogether.</p>	hats	scarves	blue		orange		purple	
hats	scarves									
blue										
orange										
purple										

<p style="text-align: center;">Year 4</p>	<ul style="list-style-type: none"> Recall multiplication facts for multiplication tables up to 12×12 Use place value, known and derived facts to multiply mentally, including: multiplying by 0 and 1; multiplying together three numbers. Recognise and use factor pairs and commutativity in mental calculations. Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. 									
<p>Progression of skills</p>	<p>Key representations</p>									
<p>Times-table facts to 12×12 Encourage daily counting in multiples both forwards and back. Encourage children to notice links between related times-tables.</p>	<p>... groups of ... = ... times ... is equal to ... \times ... =</p> 									
<p>Multiply by 1 and 0</p>	<p>Any number multiplied by 1 is equal to ... Any number multiplied by 0 is equal to ...</p> 	<p>... \times ... = ...</p> <table border="0"> <tr> <td>$1 \times 1 = 1$</td> <td>$1 \times 0 = 0$</td> </tr> <tr> <td>$2 \times 1 = 2$</td> <td>$2 \times 0 = 0$</td> </tr> <tr> <td>$3 \times 1 = 3$</td> <td>$3 \times 0 = 0$</td> </tr> <tr> <td>$4 \times 1 = 4$</td> <td>$4 \times 0 = 0$</td> </tr> </table>	$1 \times 1 = 1$	$1 \times 0 = 0$	$2 \times 1 = 2$	$2 \times 0 = 0$	$3 \times 1 = 3$	$3 \times 0 = 0$	$4 \times 1 = 4$	$4 \times 0 = 0$
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$4 \times 1 = 4$	$4 \times 0 = 0$									
<p>Multiply 3 numbers Children use their understanding of commutativity to multiply more efficiently.</p>	<p>To work out ... \times ... \times ..., I can first calculate ... \times ... and then multiply the answer by ...</p>	 <table border="0"> <tr> <td>$4 \times 2 \times 3 = 8 \times 3 = 24$</td> </tr> <tr> <td>$2 \times 3 \times 4 = 6 \times 4 = 24$</td> </tr> <tr> <td>$3 \times 4 \times 2 = 12 \times 2 = 24$</td> </tr> </table>	$4 \times 2 \times 3 = 8 \times 3 = 24$	$2 \times 3 \times 4 = 6 \times 4 = 24$	$3 \times 4 \times 2 = 12 \times 2 = 24$					
$4 \times 2 \times 3 = 8 \times 3 = 24$										
$2 \times 3 \times 4 = 6 \times 4 = 24$										
$3 \times 4 \times 2 = 12 \times 2 = 24$										
<p>Factor pairs Children explore equivalent calculations using different factors pairs.</p>	<p>$12 = \dots \times \dots$, so ... $\times 12 = \dots \times \dots \times \dots$</p>	 <table border="0"> <tr> <td>$6 \times 8 = 6 \times 4 \times 2$</td> </tr> <tr> <td>$6 \times 8 = 24 \times 2$</td> </tr> </table>	$6 \times 8 = 6 \times 4 \times 2$	$6 \times 8 = 24 \times 2$						
$6 \times 8 = 6 \times 4 \times 2$										
$6 \times 8 = 24 \times 2$										
<p>Multiply by 10 and 100 Some children may overgeneralise that multiplying by 10 or 100 always results in adding zeros. This will cause issues later when multiplying decimals.</p>	<p>When I multiply by 10, the digits move ... place value column to the left. ... is 10 times the size of ...</p>  <p>$35 \times 10 = 350$</p>	<p>When I multiply by 100, the digits move ... place value columns to the left. ... is 100 times the size of ...</p>  <p>$14 \times 100 = 1,400$</p>								

<p>Related facts Use knowledge of multiplying by 10 and 100 to scale times-table facts.</p>	<p>... × ... ones is equal to ... ones so ... × ... tens is equal to ... tens and ... × ... hundreds is equal to ... hundreds.</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid gray; padding: 5px;"> $3 \times 7 = 21$ $3 \times 70 = 210$ $3 \times 700 = 2,100$ </div> <div style="border: 1px solid gray; padding: 5px;"> $7 \times 3 = 21$ $7 \times 30 = 210$ $7 \times 300 = 2,100$ </div> </div> 
<p>Mental strategies Partition 2 or 3-digit numbers to multiply using informal methods.</p>	<p>... tens multiplied by ... is equal to ... tens. ...ones multiplied by ... is equal to ... ones.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>$26 \times 8 = 80 + 80 + 48 = 208$</p> </div> <div style="text-align: center;">  <p>$3 \times 26 = 60 + 18 = 78$</p> </div> </div>
<p>Multiply a 2 or 3-digit number by a 1-digit number The short multiplication method is introduced for the first time, initially in an expanded form.</p>	<p>To multiply a 2-digit number by ... , I multiply the ones by ... and the tens by ... To multiply a 3-digit number by ... , I multiply the ones by ... , the tens by ... and the hundreds by ...</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div>
<p>Scaling Children focus on multiplication as scaling (... times the size).</p>	<p>... is ... times the size of ...</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>A computer mouse costs £7</p> </div> <div style="text-align: center;">  <p>A keyboard costs 6 times as much.</p> </div> </div> <p>A red ribbon is 6 cm. A yellow ribbon is 7 times as long.</p>

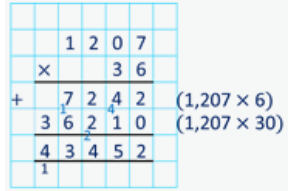
<h2 style="margin: 0;">Year 5</h2>	<ul style="list-style-type: none"> Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers Recognise and use square numbers and cube numbers, and the notation ² and ³ Multiply numbers up to 4 digits by a one- 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/diagrams.
<p>Progression of skills</p>	<p>Key representations</p>
<p>Multiples and factors Encourage children to notice patterns and make links with known facts.</p>	<p>... is a multiple of ... because ... × ... = ...</p> <p>... is a factor of ... because ... × ... = ...</p> <p>1, 2, 4 and 8 are factors of 8</p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;">  <p>1×8</p> </div> <div style="text-align: center;">  <p>2×4</p> </div> </div> <p>The common factors of ... and ... are ...</p> <div style="text-align: center;">  </div>

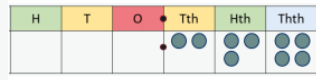
<p>Square and cube numbers</p>	<p>... squared means ... × ...</p>  <p> $1 \times 1 = 1^2 = 1$ $2 \times 2 = 2^2 = 4$ $3 \times 3 = 3^2 = 9$ $4 \times 4 = 4^2 = 16$ </p>	<p>... cubed means ... × ... × ...</p>  <p> $1 \times 1 \times 1 = 1^3 = 1$ $2 \times 2 \times 2 = 2^3 = 8$ $3 \times 3 \times 3 = 3^3 = 27$ </p>
<p>Multiply numbers up to 4 digits by a 1-digit number 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> 	
<p>Multiply numbers up to 4 digits by a 2-digit number Numbers are first partitioned using an area model then long multiplication is introduced for the first time.</p>	<p>I can partition ... into ... and ... First, I multiply by the ... Then I multiply by the ...</p> <p> $32 \times 44 = 1,200 + 80 + 120 + 8$ $32 \times 44 = 1,408$ </p> 	
<p>Multiply by 10, 100 and 1,000 Some children may overgeneralise 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> <p> $234 \times 10 = 2,340$ $234 \times 100 = 23,400$ $234 \times 1,000 = 234,000$ </p>  <p> $2.34 \times 10 = 23.4$ $2.34 \times 100 = 234$ $2.34 \times 1,000 = 2,340$ </p>	
<p>Mental strategies 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 ... × ... is ... For example: 121×12 To calculate ... × 12, I can do ... × ... × ... I could calculate 100×12 plus 20×12 plus 1×12 I could calculate 121×10 plus 121×2 I could calculate $121 \times 6 \times 2$ I could calculate $121 \times 4 \times 3$</p>	
<p>Multiply fractions by a whole number Make links with repeated addition.</p>	<p>To multiply a fraction by an integer, I multiply the numerator by the integer and the denominator remains the same.</p>  <p> $\frac{1}{7} \times 5 = \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{5}{7}$ $\frac{2}{5} \times 3 = \frac{6}{5} = 1\frac{1}{5}$ </p>	
<p>Multiply mixed numbers by a whole number</p>	<p>I can partition $\frac{2}{3}$ into $\frac{2}{3}$ and $\frac{2}{3}$</p> <p> $2\frac{2}{3} \times 3 = 2 \times 3 + \frac{2}{3} \times 3 = 6 + 2 = 8$ </p> 	

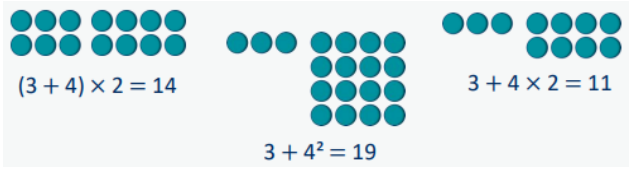
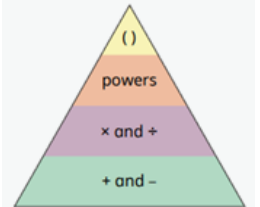
<p>Find the whole Children multiply to find the whole from a given part.</p>	<p>If $\frac{1}{\square}$ is ... , then the whole is ... \times ...</p> <p>$\frac{1}{5}$ of $\square = 6$</p> <p>$5 \times 6 = 30$</p> <p>$\frac{1}{5}$ of $30 = 6$</p> 	<p>If $\frac{1}{\square}$ is ... , then $\frac{1}{\square}$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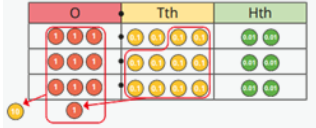
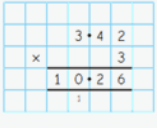
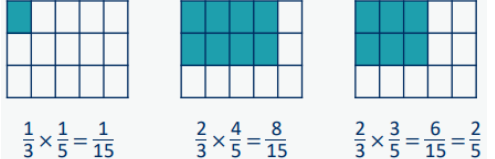
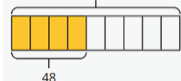
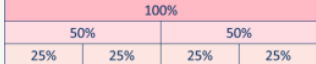



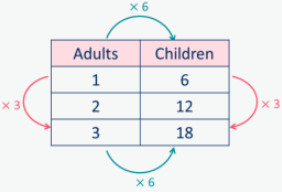
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| <h2>Year 6</h2> | <ul style="list-style-type: none"> • Identify common factors and common multiples. • Multiply numbers up to 4 digits by a 2-digit number using the formal method of long multiplication. • Multiply numbers by 10, 100 and 1,000 • Multiply 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. |
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<p>Progression of skills</p>	<p>Key representations</p>
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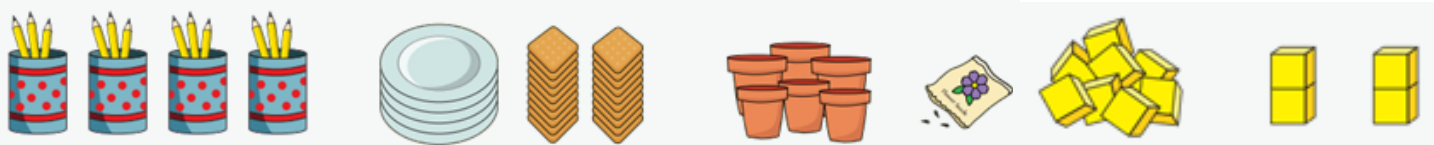


<p>Multiply numbers up to 4 digits by a 2-digit number</p>	<p>To multiply by a 2-digit number, first multiply by the ones, then multiply by the tens and then find the total.</p>	
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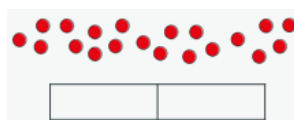
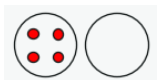
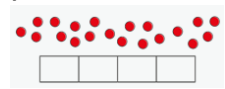

<p>Multiply by 10, 100 and 1,000 Some children may overgeneralise that multiplying by a power of 10 always results in adding zeros.</p>	<p>To multiply by 10/100/1,000, I move all the digits ... places to the left. ... is 10/100/1,000 times the size of ...</p> <p>$234 \times 10 = 2,340$ $234 \times 100 = 23,400$ $234 \times 1,000 = 234,000$</p>	<p>$0.234 \times 10 = 2.34$ $0.234 \times 100 = 23.4$ $0.234 \times 1,000 = 234$</p> 
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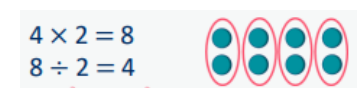



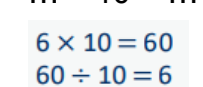
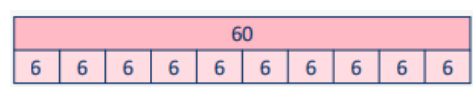

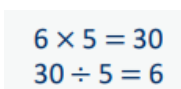
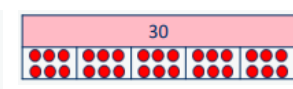
<p>Order of operations Calculations in brackets should be done first. Multiplication and division should be performed before addition and subtraction. *When no brackets are shown and the operations have the same priority, work left to right.</p>	<p>... has greater priority than ..., so the first part of the calculation I need to do is ...</p> 	
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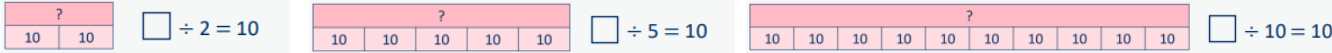
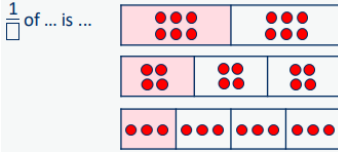
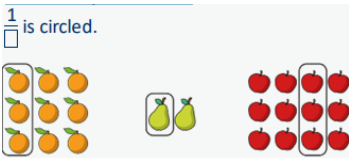

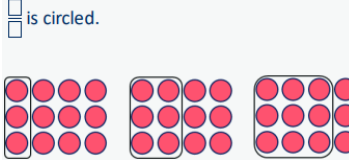
<p>Multiply decimals by integers</p> <p>This is the first time children multiply decimals by numbers other than 10, 100 or 1,000. Encourage them to make links with known facts and whole number multiplication.</p>	<p>I know that ... × ... = ..., so I also know that ... × ... = ... I need to exchange 10 ... for 1 ...</p>  <p>$6 \times 2 = 12$ $6 \times 0.2 = 1.2$</p>  								
<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>  <p>$\frac{1}{3} \times \frac{1}{5} = \frac{1}{15}$ $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$ $\frac{2}{3} \times \frac{3}{5} = \frac{6}{15} = \frac{2}{5}$</p>								
<p>Find the whole</p> <p>Children multiply to find the whole from a given part.</p>	<p>If $\frac{1}{9}$ is ... , then $\frac{1}{9}$ is ... and the whole is ... × ... $\frac{4}{9}$ of ... = 48</p>  <p>$\frac{1}{9} = 48 \div 4 = 12$ $9 \times 12 = 108$</p>								
<p>Calculate percentages</p> <p>Children first learn how to find 1%, 10%, 25% and 50% before using multiples of these amounts to find any percentage.</p>	<p>There are ... lots of ... % in 100% ... % is made up of ... %, and ... %</p> <p>To find ... %, I need to divide by ...</p>  <p>50% of ... = ... ÷ 2 25% of ... = ... ÷ 4</p> <p>To find 30%, I can find 10% and then multiply it by 3 To find 23%, I can use 10% × 2 and 1% × 3 To find 99%, I can find 1%, then subtract from 100%</p>								
<p>Calculations involving ratio</p> <p>Encourage them to see the multiplicative relationship between ratios. They will need to multiply or divide values by the same number to keep the ratio equivalent. Double number lines, ratio tables help 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> <p>adults </p> <p>children </p> <p>The ratio of adults to children is 1 : 6</p>   <table border="1" data-bbox="1758 925 1948 1029"> <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>	Adults	Children	1	6	2	12	3	18
Adults	Children								
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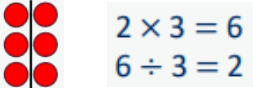
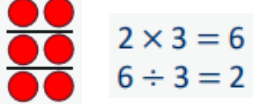


DIVISION



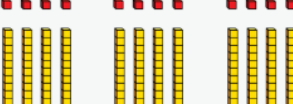

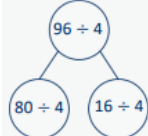
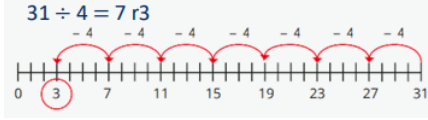
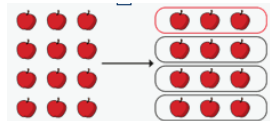
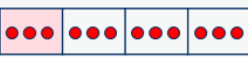
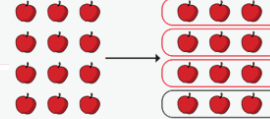
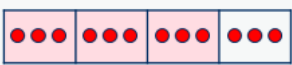
<p>Reception-</p>	<ul style="list-style-type: none"> • Have a deep understanding of number to 10, including the composition of each number. • Subitise (recognise quantities without counting) up to 5 • Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and 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 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 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> 		
<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 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>


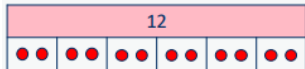


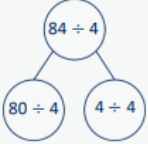

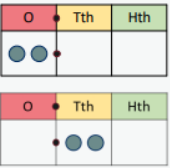
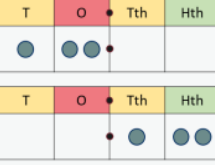
<p>Make equal groups – sharing Encourage children to check that the objects have been shared fairly and each group is the same.</p>	<p>... have been shared equally between... There are ... on/in each ...</p> 	<p>Take ... cubes. Share them between ...</p> 	
<p>Find a half Start with practical opportunities to share a quantity into 2 groups. Progress to circling half of the objects in a picture and then to finding the whole.</p>	<p>To find half, I need to share into 2 equal groups. There are ... in each group.</p>	<p>Half of ... is ...</p> 	<p>If ... is half, what is the whole?</p> 
<p>Find a quarter Start with practical opportunities to share a quantity into 4 groups. Progress to using pictures, bar models to find a quarter and then to finding the whole.</p>	<p>To find a quarter, I need to share into 4 equal groups. There are ... in each group.</p>	<p>A quarter of ... is ...</p> 	<p>If ... is a quarter, what is the whole?</p> 

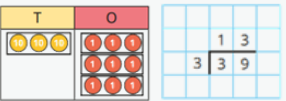
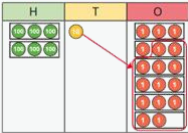
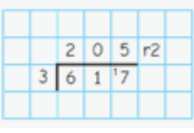
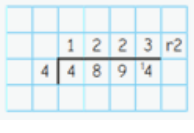


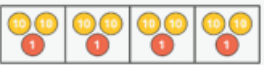
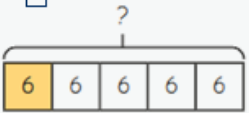
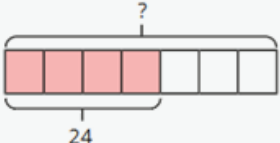
<p>Year 2-</p>	<ul style="list-style-type: none"> Recall and use division facts for the 2, 5 and 10 multiplication tables. Calculate mathematical statements for division within the multiplication tables and write them using the division (÷) and equals (=) signs. Recognise, find, name and write fractions $\frac{1}{2}$ $\frac{1}{4}$ $\frac{2}{4}$ and $\frac{3}{4}$ of a quantity. 		
<p>Progression of skills</p>	<p>Key representations</p>		
<p>Divide by 2 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 $\dots \div 2 = \dots$</p> 	<p>... shared equally between 2 is ... Half of ... is ... $\dots \div 2 = \dots$</p> 	
<p>Divide by 10 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 $\dots \div 10 = \dots$</p> 	<p>... shared equally between 10 is ... $\dots \div 10 = \dots$</p> 	
<p>Divide by 5 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 $\dots \div 5 = \dots$</p> 	<p>... shared equally between 5 is ... $\dots \div 5 = \dots$</p> 	

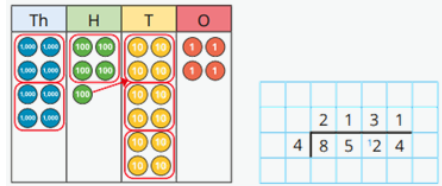
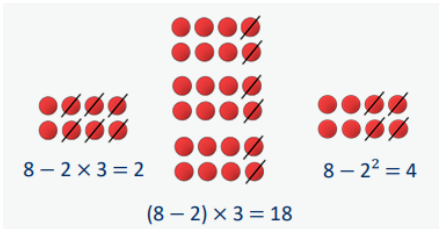
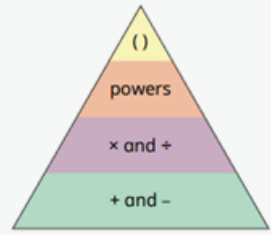

<p>Missing numbers Bar models are useful to show the link between multiplication and division.</p>	<p>... divided by 2 / /10 is equal to ...</p> 	
<p>Unit fractions In Y2 the focus is on finding 1/2, 1/4 and 1/3. Bar models are useful to show the link between division and finding a fraction.</p>	<p>The objects have been shared fairly into ...groups.</p> 	<p>There are ... equal parts. There is ... part circled.</p> 
<p>Non-unit fractions In Y2 the focus is on finding 2/4 and 3/4. Prompt children to notice that 2/4 is equivalent to 1/2</p>	<p>The objects have been shared fairly into ...groups.</p> 	<p>There are ... equal parts. There are ... parts circled.</p> 


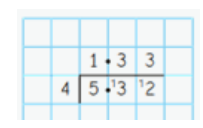
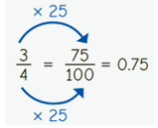
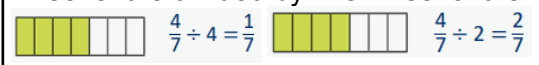

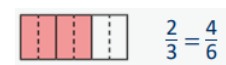



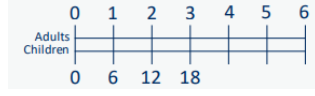
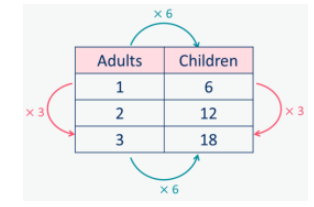
<p>Year 3-</p>	<ul style="list-style-type: none"> Recall and use division facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing 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 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 ÷ 3 =</p> 	<p>... has been shared equally into 3 equal groups. ... ÷ 3 =</p> 
<p>Divide by 4 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 ÷ 4 =</p> 	<p>... has been shared equally into 4 equal groups. ... ÷ 4 =</p> 

<p>Divide by 8 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 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 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>  <p>$60 \div 2 = 30$ $4 \div 2 = 2$ $64 \div 2 = 32$</p>
<p>Divide a 2-digit number by a 1-digit number - remainders 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>  <p>$80 \div 4 = 20$ $16 \div 4 = 4$ $96 \div 4 = 24$</p> <p>There are ... groups of ... There are ... remaining.</p>  <p>$31 \div 4 = 7 \text{ r}3$</p> <p>$94 \div 4 = 23 \text{ r}2$ $80 \div 4 = 20$ $14 \div 4 = 3 \text{ r}2$ $94 \div 4 = 23 \text{ r}3$</p>
<p>Unit fractions of a set of objects 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>Non-unit fractions of a set of objects 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 style="text-align: center;">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 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 has been shared equally into ... equal groups.</p> <p>$\dots \div \dots =$ $\dots \div \dots =$</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>$2 \times 6 = 12$ $12 \div 6 = 2$</p> </div> <div style="text-align: center;">  <p>$2 \times 6 = 12$ $12 \div 6 = 2$</p> </div> </div>	
<p>Divide a number by 1 and itself 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. 5 shared between 1 is 5 There are 5 groups of 1 in 5</p> 	<p>When I divide a number by itself, the answer is 1 5 shared between 5 is 1 There is 1 group of 5 in 5</p>
<p>Related facts Link to known times-table facts.</p>	<p>$\dots \div \dots$ 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>$21 \div 7 = 3$ $210 \div 7 = 30$ $2,100 \div 7 = 300$</p> </div> <div style="text-align: center;"> <p>$21 \div 3 = 7$ $210 \div 3 = 70$ $2,100 \div 3 = 700$</p> </div> <div style="text-align: center;">  </div> </div>	
<p>Divide a 2 or 3-digit number by a 1-digit number 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;">  <div style="margin-left: 20px;"> <p>$80 \div 4 = 20$ $4 \div 4 = 1$ $84 \div 4 = 21$</p> </div> </div>	<p>I cannot share the hundreds/tens equally, so I need to exchange 1 ... for 10 ...</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>$300 \div 3 = 100$ $120 \div 3 = 40$ $15 \div 3 = 5$ $435 \div 3 = 145$</p> </div> </div>
<p>Divide by 10 and 100 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; align-items: center;"> <div style="text-align: center;">  <p>$2 \div 10 = 0.2$</p> </div> <div style="text-align: center;">  <p>$12 \div 100 = 0.12$</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>	

<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. I can show groups of ... on a number line. To divide by ..., I can divide by ... and then divide the result by ...</p>
<p>Divide numbers up to 4 digits by a 1-digit number 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>    
<p>Divide by 10, 100 and 1,000 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> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> $120 \div 10 = 12$ $120 \div 100 = 1.2$ $120 \div 1,000 = 0.12$ </div>  </div>
<p>Fraction of an amount 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>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>To find $\frac{\square}{\square}$ of ... , I need to divide by ... and multiply by ...</p>   <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> $\frac{1}{5}$ of 20 = </div> <div style="text-align: center;"> $\frac{1}{4}$ of 84 = </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> $\frac{3}{5}$ of 20 = </div> <div style="text-align: center;"> $\frac{3}{4}$ of 84 = </div> </div> </div> <div style="width: 45%;"> <p>If $\frac{1}{\square}$ is ... , then the whole is ... \times ...</p>  <div style="margin-left: 20px; margin-top: 10px;"> $\frac{1}{5}$ of ___ = 6 </div>  <div style="margin-left: 20px; margin-top: 10px;"> $\frac{4}{7}$ of ___ = 24 </div> </div> </div>

<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 • Solve problems involving the calculation of percentages.
<p>Progression of skills</p>	<p>Key representations</p>
<p>Short division Encourage children to interpret remainders in context, for example knowing that “remainder 1” could mean 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> 
<p>Order of operations Calculations in brackets should be done first. Multiplication and division should be performed before addition and subtraction. *When no brackets are shown and the operations have the same priority, work left to right.</p>	<p>... has greater priority than ..., so the first part of the calculation I need to do is ...</p>  
<p>Long division The long division method is introduced for the first time. Two alternative methods are shown.</p>	
<p>Divide by 10, 100 and 1,000 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;"> <div style="text-align: left;"> <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="text-align: left;"> <p>$906 \div 10 = 90.6$</p> <p>$906 \div 100 = 9.06$</p> <p>$906 \div 1,000 = 0.906$</p> </div> </div>

<p>Divide decimals by integers This is the first time children divide decimals by numbers other than 10, 100 or 1,000</p>	<p>I know that $\dots \div \dots = \dots$, so I also know that $\dots \div \dots = \dots$</p> <p>I need to exchange 1 ... for 10 ...</p>  <p>$39 \div 3 = 13$ $3.9 \div 3 = 1.3$ $0.39 \div 3 = 0.13$</p> 
<p>Decimal and fraction equivalents</p>	<p>The fraction ... is equivalent to the decimal ...</p> <p>$\frac{1}{5} = 0.2$ $\frac{2}{5} = 0.4$ $\frac{3}{5} = 0.6$</p> <p>$\frac{\square}{\square}$ is equal to $\frac{\square}{100}$</p>  <p>$\frac{3}{4} = \frac{75}{100} = 0.75$</p>
<p>Divide a fraction by an integer 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>$\frac{4}{7} \div 4 = \frac{1}{7}$ $\frac{4}{7} \div 2 = \frac{2}{7}$</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 $\dots \div \dots = \dots \div \dots$</p>  <p>$\frac{2}{3} = \frac{4}{6}$ so $\frac{2}{3} \div 4 = \frac{4}{6} \div 4 = \frac{1}{6}$</p>
<p>Fraction of an amount 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>$\frac{1}{12}$ 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>$\frac{1}{9}$ of 48 = 48</p>
<p>Calculate percentages 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> <p>50% of ... = $\dots \div 2$ 25% of ... = $\dots \div 4$...</p> <p>% is made up of ... %, and ... %</p> <p>To find 30%, I can find 10% and then multiply it by 3 To find 23%, I can use 10% $\times 2$ and 1% $\times 3$ To find 99%, I can find 1%, then subtract from 100%</p>
<p>Calculations involving ratio 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> <p>adults </p> <p>children </p> <p>The ratio of adults to children is 1 : 6</p>  

Array – An ordered collection of counters, cubes or other item in rows and columns.

Commutative – Numbers can be multiplied in any order.

Dividend – In division, the number that is divided.

Divisor – In division, the number by which another is divided.

Exchange – Change a number or expression for another of an equal value.

Factor – A number that multiplies with another to make a product.

Multiplicand – In multiplication, a number to be multiplied by another.

Partitioning – Splitting a number into its component parts.

Product – The result of multiplying one number by another.

Quotient – The result of a division

Remainder – The amount left over after a division when the divisor is not a factor of the dividend.

Scaling – Enlarging or reducing a number by a given amount, called the scale factor