



Primary maths

Calculation policy

Updated September 2024

Review Date: September 2026

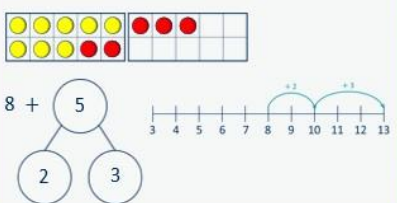
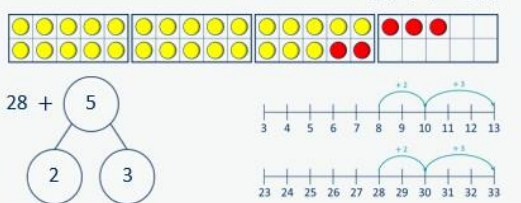
Guidance for teachers

The calculation policy is divided into four sections: addition, subtraction, multiplication and division. At the start of each section, you will find an overview of the progression of skills. Calculations involving decimal numbers and fractions are included.

The calculation policy follows the same concrete, pictorial, abstract approach as our main schemes of learning. Where appropriate, sentence stems and key questions are included alongside the key representations.

Where skills are divided into more than one section across the page, there is a progression in the level of difficulty from left to right.

For example, when adding across a 10, children need to be able to add across 10 itself, before making links with related facts.

Add across a 10 Partition the number you are adding to make a full ten.	<p>... can be partitioned into ... and ...</p>  <p>$8 + 5 = 13$</p>	<p>I add ... to get to ... then I add ...</p> <p>$8 + 5 = 13$ $28 + 5 = 33$</p>  <p>$28 + 5 = 33$</p>
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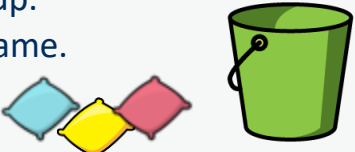


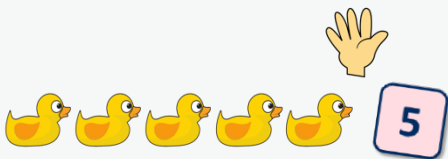

Progression of skills - Addition

Year group	Skill
Reception	<ul style="list-style-type: none">• Conceptually subitise to 5• 1 more• Notice the composition of numbers within 10• Combine 2 groups• Add more
Year 1	<ul style="list-style-type: none">• Add together• Add more• Bonds within 10• Related facts within 20• Missing numbers

Progression of skills - Addition

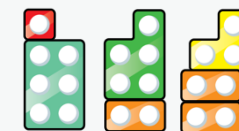
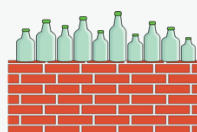
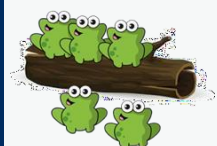
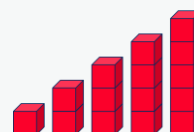
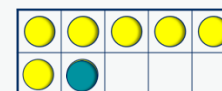
Year group	Skill
Year 2	<ul style="list-style-type: none">• Add 1s to any number (related facts)• Add three 1-digit numbers• Add across a 10• Add multiples of 10• Add 10s to any number• Add two 2-digit numbers (not across a ten)• Add two 2-digit numbers (across a ten)• Missing numbers

Addition


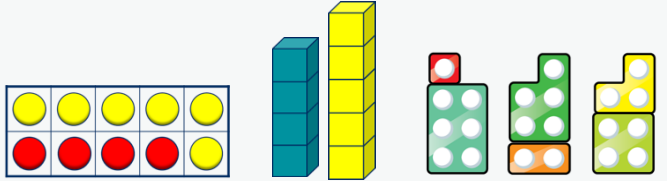
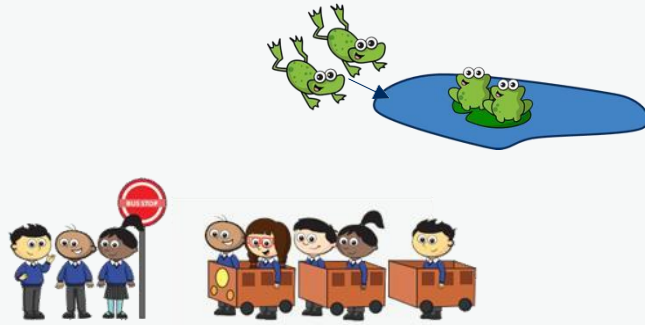
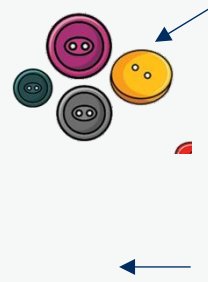
Nursery	<ul style="list-style-type: none"> Begin to have an understanding of numbers to 5 We recommend focusing on noticing and representing small quantities, perceptual subitising and counting. 	
Progression of skills	Key representations	
Subitise to 3 Instantly see how many.	How many do you see?     	
Count how many Begin to count objects using 1-1 correspondence.	How many are there?  	Count out ... from a larger group. E.g. Collect 3 beanbags for a game. 
Make numbers to 5 Start by showing 1, 2 and 3 using fingers.	Show me...  	Begin to link numerals to quantities. 
Add 1 more Through stories, songs and rhymes.	How many do I have now? 	

Addition

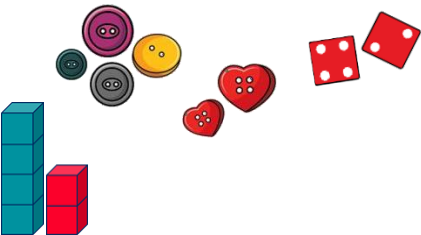
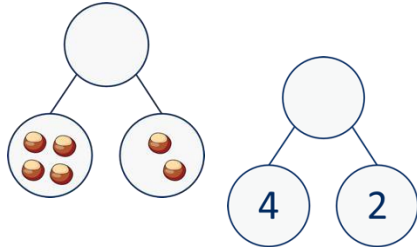
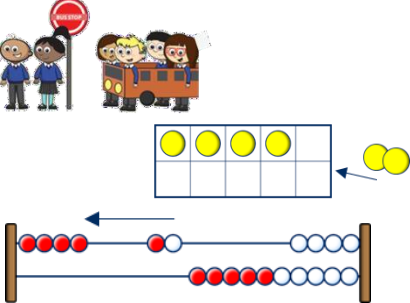
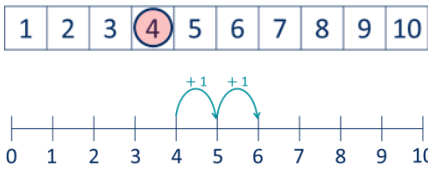
Reception	<ul style="list-style-type: none"> Have a deep understanding of numbers to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5 Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and some number bonds to 10, including double facts. 	
Progression of skills	Key representations	
Conceptually subitise to 5 Notice the parts that make up the whole.	What do you see? How do you see it?	
1 more Continue to link to stories, songs and rhymes.	1 more than ... is ...	
Notice the composition of numbers within 10 Link to stories, songs and rhymes.	How many...? How many...? How many altogether?	How many ways can you make...?



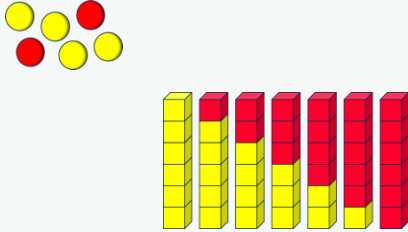
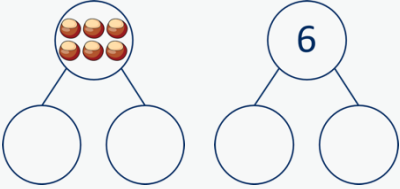
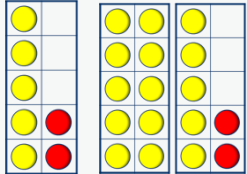
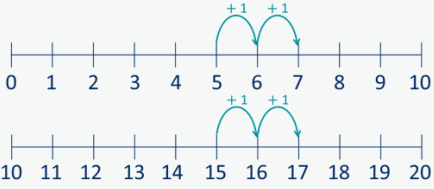
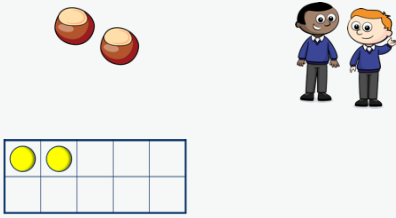


Addition

Progression of skills	Key representations	
<p>Combine 2 groups</p> <p>2 groups are combined to find the total.</p>	<p>There are There are There are altogether.</p> 	<p>.... and make</p> 
<p>Add more</p> <p>A quantity is increased.</p>	<p>First... Then.... Now....</p> 	<p>I have I add more. Now I have....</p> 

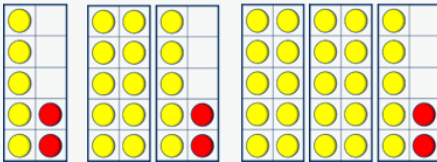
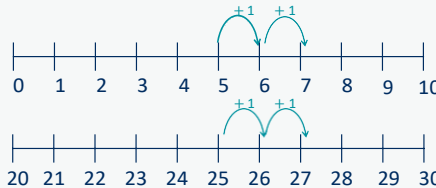
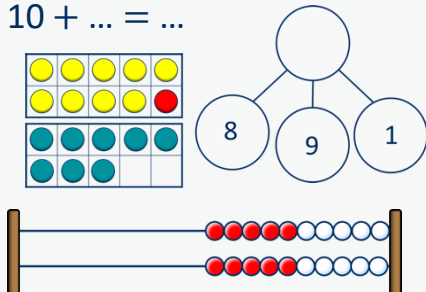
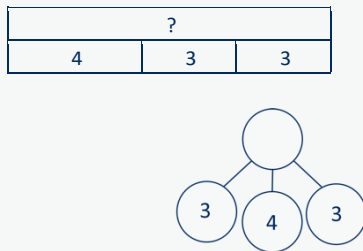
Addition

Year 1	<ul style="list-style-type: none"> Read, write and interpret mathematical statements involving addition (+) and equals (=) signs. Represent and use number bonds within 20 Add 1-digit and 2-digit numbers to 20, including zero. Solve one-step problems that involve addition, using concrete objects and pictorial representations, and missing number problems such as $7 = \square + 2$ 		
Progression of skills	Key representations		
Add together (aggregation) 2 quantities are combined to find the total.	<p>There are ... There are ... There are ... altogether.</p> 	<p>... is a part. ... is a part. ... is the whole.</p> 	<p>... plus ... is equal to is equal to ... + ...</p> $4 + 2 = 6$ $2 + 4 = 6$ $6 = 4 + 2$ $6 = 2 + 4$
Add more (augmentation) A quantity is increased.	<p>First... Then... Now...</p> 	<p>I start at ... I jump on ... I land on ...</p> 	<p>... plus ... is equal to is equal to ... + ...</p> $4 + 2 = 6$ $2 + 4 = 6$ $6 = 4 + 2$ $6 = 2 + 4$


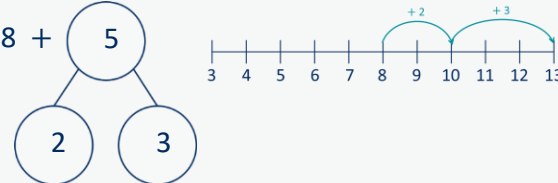
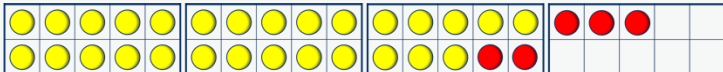
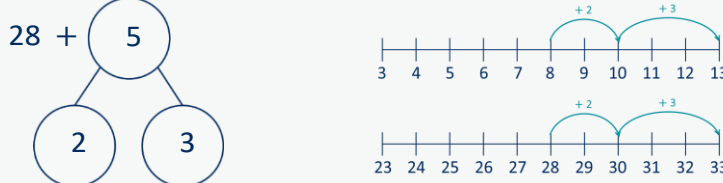
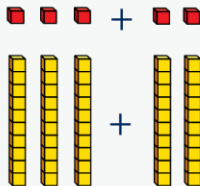

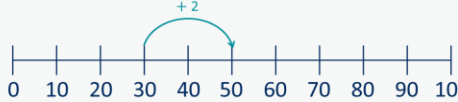
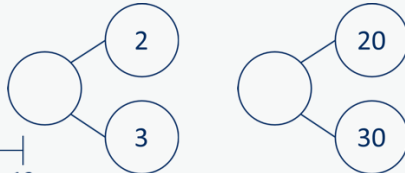

Addition

Progression of skills	Key representations		
Bonds within 10 Include bonds for each number within 10 Encourage children to notice patterns.	... is made of ... and and ... make ... 	... can be partitioned into ... and ... 	... plus ... is equal to ... $6 + 0 = 6$ $5 + 1 = 6$ $4 + 2 = 6$ $3 + 3 = 6$ $2 + 4 = 6$ $1 + 5 = 6$ $0 + 6 = 6$
Related facts within 20 Make links to known facts.	I know that ... and ... = ... so ... and ... = ... 	... more than ... is ... so ... more than ... is ... 	What patterns do you notice? $5 + 2 = 7$ $15 + 2 = 17$ $7 = 5 + 2$ $17 = 15 + 2$
Missing numbers Make links to known facts.	How many more do you need to make ...? 	If ... is the whole and ... is a part, the other part must be... 	... plus ... is equal to ... $2 + \square = 6$ $6 = 2 + \square$ 

Addition

Year 2	<ul style="list-style-type: none">Recall and use addition facts to 20 fluently, and derive and use related facts up to 100Add numbers using concrete objects, pictorial representations, and mentally, including:<ul style="list-style-type: none">a two-digit number and 1sa two-digit number and 10s2 two-digit numbersadding 3 one-digit numbersRecognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.								
Progression of skills	Key representations								
Add ones to any number (related facts) Make links to known facts.	I know that ... and ... = ... so ... and ... = ... 	... more than ... is ... so ... more than ... is ... 	What do you notice? Can you continue the pattern? $5 + 2 = 7$ $15 + 2 = 17$ $25 + 2 = 27...$						
Add three 1-digit numbers Prompt children to understand that addition can be done in any order and to make links to known facts.	... and ... are a bond to 10 $10 + ... = ...$ 	Double ... + ... = ...  <table data-bbox="1089 1090 1417 1162"><tr><td colspan="3">?</td></tr><tr><td>4</td><td>3</td><td>3</td></tr></table> <div data-bbox="1257 1193 1450 1338"></div>	?			4	3	3	What do you notice? Which addition is the easiest to calculate? $8 + 9 + 1 =$ $8 + 1 + 9 =$ $9 + 1 + 8 =$
?									
4	3	3							

Addition

Progression of skills	Key representations																																																														
Add across a 10 Partition the number being added to make a full ten.	<p>... can be partitioned into ... and ...</p>  	<p>I add ... to get to ... then I add ...</p> $8 + 5 = 13$ $28 + 5 = 33$  																																																													
Add multiples of 10 Make links to known facts within ten.	<p>... ones + ... ones = ... ones so ... tens + ... tens = ... tens</p>  $3 + 2 = 5$ $30 + 20 = 50$	<p>What is the same? What is different?</p>    <table data-bbox="1643 885 1858 935"><tr><td>?</td></tr><tr><td>2 3</td></tr></table> <table data-bbox="1643 949 1858 999"><tr><td>?</td></tr><tr><td>20 30</td></tr></table>	?	2 3	?	20 30																																																									
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2 3																																																															
?																																																															
20 30																																																															
Add 10s to any number Make links to known facts.	<p>... tens + ... tens = ... tens ... tens and ... ones = ...</p> 	<p>To add ... I need to add 10 ... times.</p> <table data-bbox="1116 1135 1442 1320"><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><tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</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	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	<p>I know that ... and ... = ... so ... and ... = ...</p> $30 + 20 = 50$ $34 + 20 = 54$
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																																																						
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41	42	43	44	45	46	47	48	49	50																																																						
51	52	53	54	55	56	57	58	59	60																																																						

Addition

Progression of skills	Key representations																
Add 2-digit numbers (not across a ten) Lining up ones and tens in columns will support with later written methods.	<p>... ones + ... ones = ... ones ... tens + ... tens = ... tens</p> <div><table><tr><th>Tens</th><th>Ones</th></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table><div><table><tr><td colspan="2">?</td></tr><tr><td>43</td><td>21</td></tr></table><p>3 ones + 1 one = 4 ones 4 tens + 2 tens = 6 tens 6 tens + 4 ones = 64</p></div></div>			Tens	Ones					?		43	21				
Tens	Ones																
?																	
43	21																
Add 2-digit numbers (across a ten) Begin to exchange 10 ones for 1 ten.	<p>There are ones, so I do/do not need to make an exchange. ... ones = ... ten and ... ones</p> <div><table><tr><th>T</th><th>O</th></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table><table><tr><th>T</th><th>O</th></tr><tr><td></td><td></td></tr></table><div><table><tr><td colspan="2">?</td></tr><tr><td>45</td><td>37</td></tr></table><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></div></div>			T	O					T	O			?		45	37
T	O																
T	O																
?																	
45	37																
Missing numbers Solve missing number problems and use the inverse to check.	<p>How many more do you need to make ...?</p> <div><table><tr><td></td><td>$6 + \square = 10$</td></tr><tr><td></td><td>$10 - \square = 6$</td></tr></table></div>		$6 + \square = 10$		$10 - \square = 6$	<p>If ... is a whole and ... is a part, then ... is the other part.</p> <div>$\square + 3 = 7$ $7 - 3 = \square$</div>	<p>... can be partitioned into ... and ...</p> <div>$10 + 8 = 12 + \square$<div><table><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table></div></div>										
	$6 + \square = 10$																
	$10 - \square = 6$																

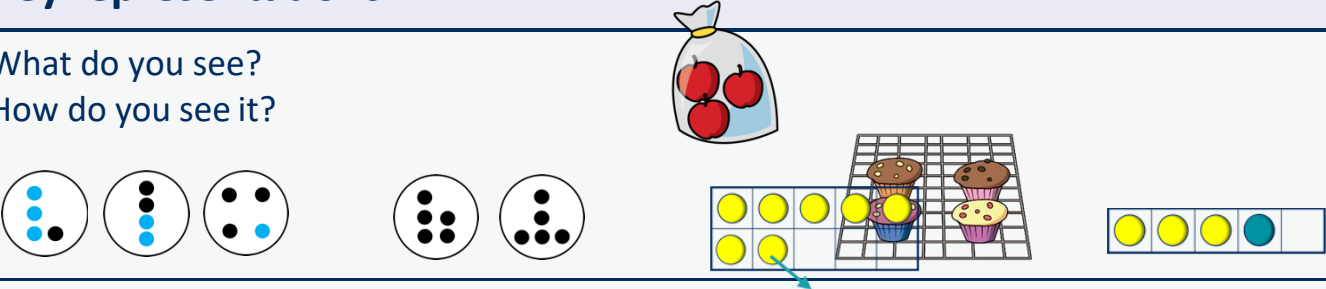
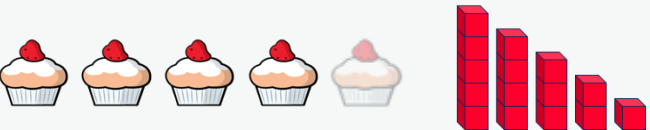
Progression of skills - Subtraction

Year group	Skill
Reception	<ul style="list-style-type: none">• Conceptually subitise to 5• 1 less• Notice the composition of numbers within 10• Partition• Take away
Year 1	<ul style="list-style-type: none">• Find a part• Take away• Bonds within 10• Related facts within 20• Missing numbers

Progression of skills - Subtraction

Year group	Skill
Year 2	<ul style="list-style-type: none">• Subtract 1s from any number (related facts)• Subtract across a 10• Subtract multiples of 10• Subtract 10s from any number• Subtract two 2-digit numbers (not across a ten)• Subtract two 2-digit numbers (across a ten)• Missing numbers

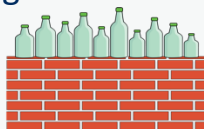
Subtraction

Reception	<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 subtraction facts) and some number bonds to 10, including double facts.
Progression of skills	Key representations
Conceptually subitise to 5 Notice the parts that make up the whole.	<p>What do you see? How do you see it?</p> 
1 less Continue to link to stories, songs and rhymes.	<p>1 less than ... is ...</p> 

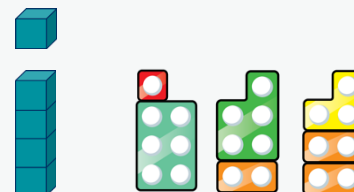
Notice the composition of numbers within 10

Link to stories, songs and rhymes.

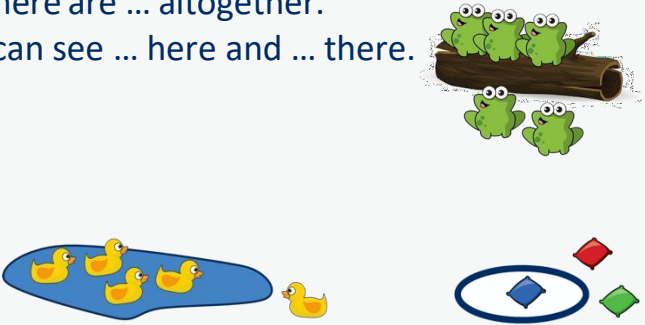
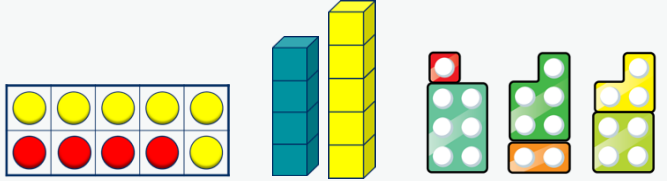
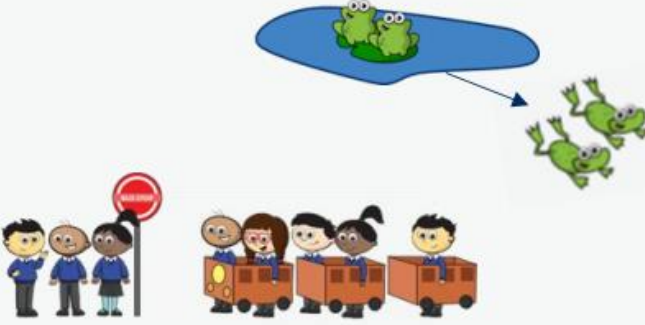
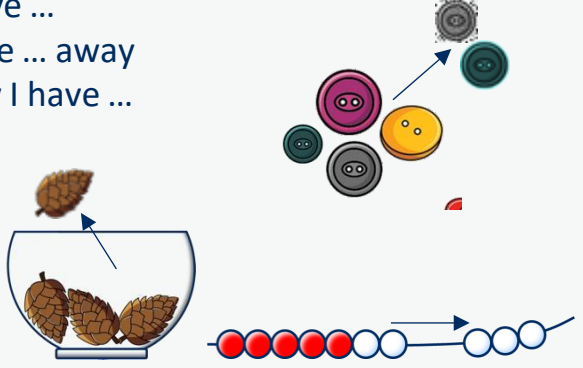
How many...?
How many...?
How many altogether?



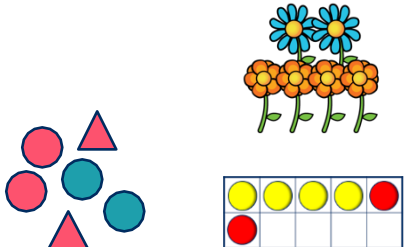
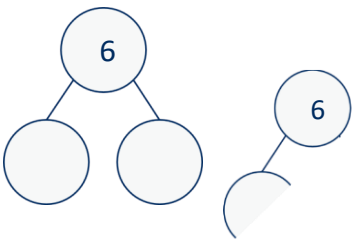
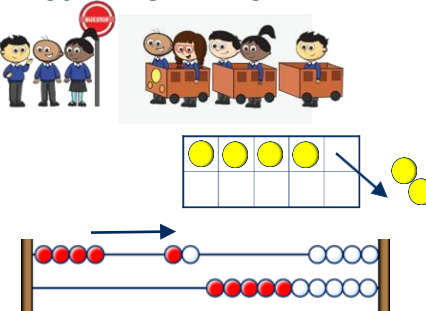
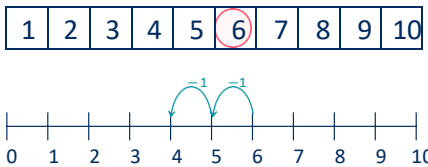
How many ways can you make...?



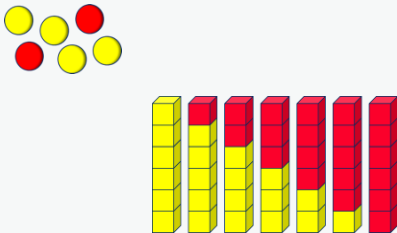
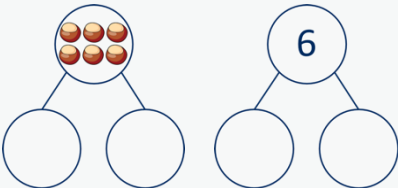
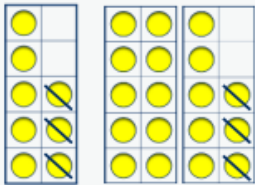
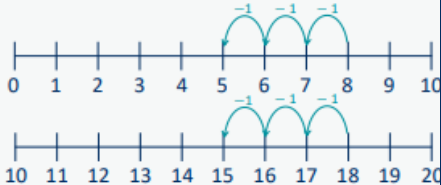
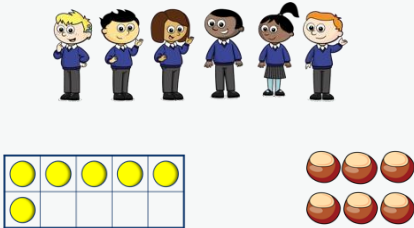
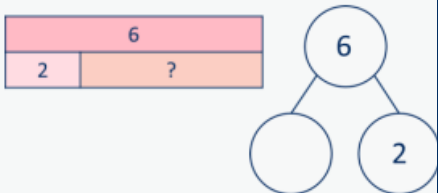

Subtraction

Progression of skills	Key representations	
Partition Using objects, explore different ways to partition a number into 2 or more parts.	<p>There are ... altogether. I can see ... here and ... there.</p> 	<p>... and ... make ...</p> 
Take away A quantity is reduced.	<p>First... Then... Now...</p> 	<p>I have ... I take ... away Now I have ...</p> 


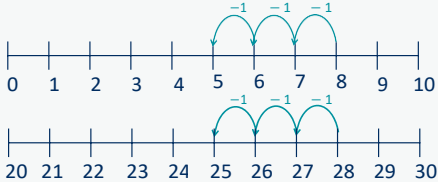
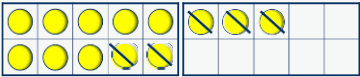
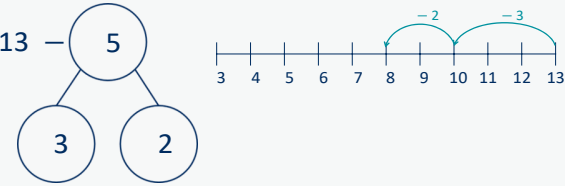
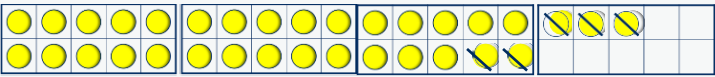
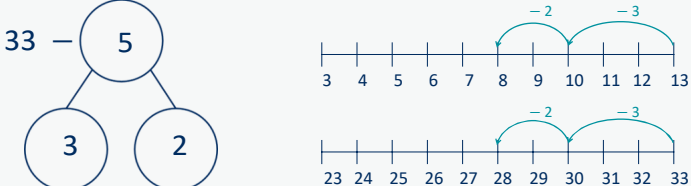
Subtraction

<p>Year 1</p>	<ul style="list-style-type: none"> Read, write and interpret mathematical statements involving subtraction (–) and equals (=) signs. Represent and use number bonds and related subtraction facts within 20 Subtract one-digit and two-digit numbers to 20, including zero. Solve one-step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$ 		
<p>Progression of skills</p>	<p>Key representations</p>		
<p>Find a part</p> <p>Link to number bonds and known facts. E.g. $2 + 4 = 6$ so if 6 is the whole and 4 is a part, the other part must be 2</p>	<p>There are ... in total. ... are ... How many are not ...?</p> 	<p>... is the whole. ... is a part. ... is a part.</p> 	<p>... subtract ... is equal to is equal to ... – ...</p> $6 - 2 = 4$ $6 - 4 = 2$ $4 = 6 - 2$ $2 = 6 - 4$
<p>Take away</p> <p>A quantity is decreased.</p>	<p>First... Then... Now...</p> 	<p>I start at ... I jump back ... I land on ...</p> 	<p>... minus ... is equal to is equal to ... – ...</p> $6 - 2 = 4$ $6 - 4 = 2$ $4 = 6 - 2$ $2 = 6 - 4$

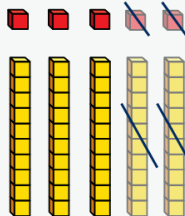
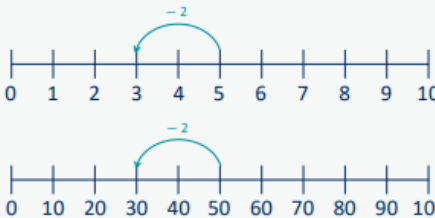

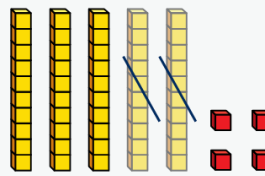
Subtraction

Progression of skills	Key representations		
Bonds within 10 Focus on subtraction facts. Encourage children to notice patterns.	<p>... is made of ... and and ... make ...</p> 	<p>... can be partitioned into ... and ...</p> 	<p>... minus ... is equal to ...</p> $6 - 0 = 6$ $6 - 1 = 5$ $6 - 2 = 4$ $6 - 3 = 3$ $6 - 4 = 2$ $6 - 5 = 1$ $6 - 6 = 0$
Related facts within 20 Make links to known facts.	<p>I know that ... minus ... = ... so ... minus ... = ...</p> 	<p>... less than ... is ... so ... less than ... is ...</p> 	<p>What patterns do you notice?</p> $8 - 3 = 5$ $18 - 3 = 15$ $5 = 8 - 3$ $15 = 18 - 3$
Missing numbers Make links to known facts.	<p>How many do you need to subtract to make ...?</p> 	<p>If ... is the whole and ... is a part, the other part must be...</p> 	<p>... minus ... is equal to ...</p> $6 - \square = 2$ $2 = 6 - \square$ 

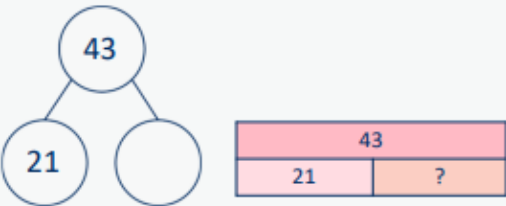
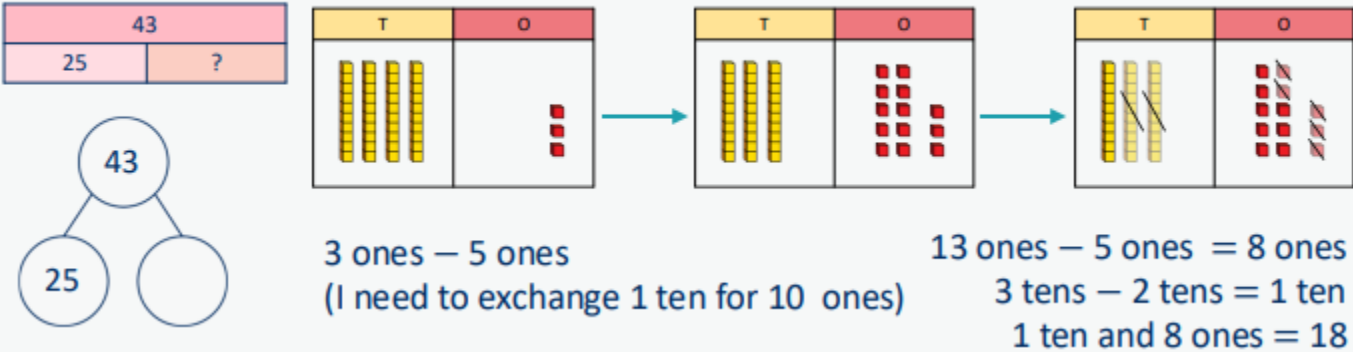
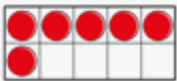
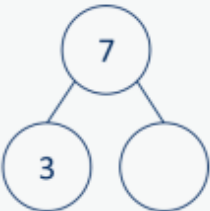
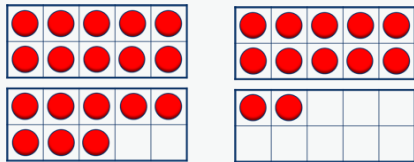
Subtraction

	<ul style="list-style-type: none">Recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100Subtract numbers using concrete objects, pictorial representations, and mentally, including:<ul style="list-style-type: none">a two-digit number and 1sa two-digit number and 10s2 two-digit numbersRecognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.		
Progression of skills	Key representations		
Subtract ones from any number (related facts) Make links to known facts.	<p>I know that ... minus ... = ... so ... minus ... = ...</p> 	<p>... less than ... is ... so ... less than ... is ...</p> 	<p>What do you notice? Can you continue the pattern?</p> $8 - 3 = 5$ $18 - 3 = 15$ $28 - 3 = 25...$
Subtract across a 10 Partition the number being subtracted to bridge through a ten.	<p>... can be partitioned into ... and ...</p>  	<p>Make links with related facts.</p>  	

Subtraction

Progression of skills	Key representations																																																														
Subtract multiples of 10 Make links to known facts within ten.	<p>... ones — ... ones = ... ones so ... tens — ... tens = ... tens</p>  <p>$5 - 2 = 3$ $50 - 20 = 30$</p>	<p>What is the same? What is different?</p>   <table data-bbox="1624 484 1873 634"><tr><td colspan="2">5</td></tr><tr><td>2</td><td>?</td></tr><tr><td colspan="2">50</td></tr><tr><td>20</td><td>?</td></tr></table>	5		2	?	50		20	?																																																					
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Subtract 10s from any number Make links to known facts.	<p>... tens — ... tens = ... tens ... tens and ... ones = ...</p> 	<p>To subtract ... I need to subtract 10 ... times.</p> <table data-bbox="1096 833 1479 1055"><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><tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</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	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	<p>I know that ... minus ... = ... so ... minus ... = ...</p> <p>$50 - 20 = 30$ $54 - 20 = 34$</p>
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Subtraction



Progression of skills	Key representations		
Subtract two 2-digit numbers (not across a ten)	<p>... ones – ... ones = ... ones ... tens – ... tens = ... tens</p> 		
Subtract two 2-digit numbers (across a ten) Begin to exchange 1 ten for 10 ones.	<p>I need to make an exchange because I do not have enough ones to subtract ... ones.</p> 		
Missing numbers Solve missing number problems and use the inverse to check.	<p>How many do you need to subtract to make ...?</p>  $10 - \square = 6$ $6 + \square = 10$	<p>If ... is a whole and ... is a part, then ... is the other part.</p> $7 - 3 = \square$ $\square + 3 = 7$ 	<p>... can be partitioned into ... and ...</p> $18 - \square = 12 + 2$ 

Progression of skills - Multiplication

Year group	Skill
Reception	<ul style="list-style-type: none">• Double to 10• Make equal groups
Year 1	<ul style="list-style-type: none">• Count in 2s, 5s and 10s• Add equal groups• Make arrays• Make doubles

Year 2



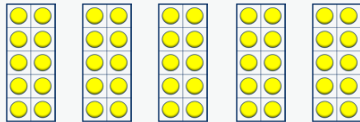



- Link repeated addition and multiplication
- Use arrays
- Double
- The 2 times-table
- The 10 times-table
- The 5 times-table
- Missing numbers

Reception	<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.
Progression of skills	Key representations
Double to 10 Prompt children to notice that double means twice as many and to notice that there are two equal groups.	<p>Double ... is is double ...</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>There are ... groups of ... There are ... altogether.</p> 



Double ... is ...
... + ... = ...

The illustrations show various objects being doubled. On the left, two boxes show a hand with one finger pointing up, followed by an arrow pointing to two hands with one finger pointing up each. Below this, another two boxes show a single yellow stick with two red dots, followed by an arrow pointing to two such sticks. In the center, there are two bags of apples, each containing three apples. Below the bags are two stacks of three pots each. To the right of the pots is a single bag of compost. Further right are two dice, each showing a different face. On the far right, there are two tall stacks of blue blocks, each containing five blocks. Below the dice and compost bag are two rows of colored circles (red and yellow) arranged in a grid pattern.









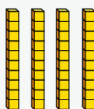
Year 1	<ul style="list-style-type: none"> Count in multiples of twos, fives and tens. Solve one-step problems involving multiplication, using concrete objects, pictorial representations and arrays with the support of the teacher.
Progression of skills	Key representations

<p>Count in 2s, 5s and 10s</p> <p>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> <div>  </div>	<p>Continue to colour in ...s What do you notice?</p> <table border="1"><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></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> <table border="1"><tr><td>5</td><td>10</td><td>15</td><td>20</td><td></td><td></td><td></td><td></td></tr></table> <div></div>	5	10	15	20				
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<p>Add equal groups (repeated addition)</p> <p>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> <div> $10 + 10 + 10 = 30$  $5 + 5 + 5 + 5 = 20$</div>	<p>What is the same? What is different?</p> $2 + 2 + 2 =$ $5 + 5 + 5 =$ $10 + 10 + 10 =$ <p>Use objects or a drawing to represent the equal groups and find how many in total.</p>																																																											

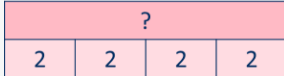




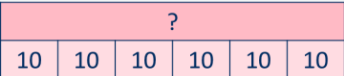
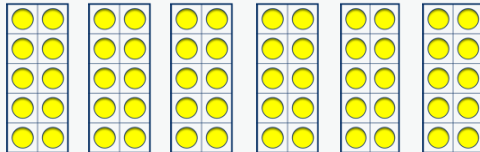
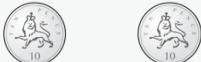
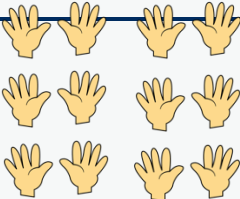
Multiplication






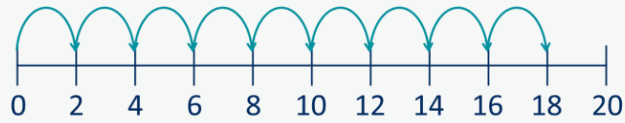
Progression of skills	Key representations
Make arrays Children use their knowledge of adding equal groups to arrange objects in columns and rows.	<p>There are ... rows of ... There are ... altogether. There are ... columns of ... There are ... altogether.</p> 
Make doubles Children understand that doubles are two equal groups. Children may begin to explore doubles beyond 20 using base 10	<p>Double ... is ... $\dots + \dots = \dots$</p> 

Multiplication

Year 2	<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 (×) and equals (=) signs.Show that multiplication of two numbers can be done in any order (commutative).														
Progression of skills	Key representations														
Link repeated addition and multiplication Encourage children to make the link between repeated addition and multiplication.	There are ... equal groups with ... in each group. There are ... altogether. <div><div></div><div><table border="1" data-bbox="1394 519 1601 605"><tr><td colspan="2">6</td></tr><tr><td>3</td><td>3</td></tr></table><div><div>$3 + 3 = 6$</div><div>$2 \times 3 = 6$</div></div></div></div> <div><div></div><div><table border="1" data-bbox="1292 679 1601 763"><tr><td colspan="4">20</td></tr><tr><td>5</td><td>5</td><td>5</td><td>5</td></tr></table><div><div>$5 + 5 + 5 + 5 = 20$</div><div>$4 \times 5 = 20$</div></div></div></div>			6		3	3	20				5	5	5	5
6															
3	3														
20															
5	5	5	5												
Use arrays Encourage children to see that multiplication is commutative.	There are ... rows with ... in each row. There are ... columns with ... in each column. <div><div></div><div><div>$3 \text{ lots of } 5 = 15$</div><div>$5 + 5 + 5 = 15$</div><div>$5 \text{ lots of } 3 = 15$</div><div>$3 + 3 + 3 + 3 + 3 = 15$</div></div></div>		I can see ... × ... and ... × ... <div><div>$3 \times 5 = 15$</div><div>$5 \times 3 = 15$</div><div>$3 \times 5 = 5 \times 3$</div></div>												
Double Encourage children to make links with related facts.	Double ... is ... <div><div> → </div><div><div>$\text{Double } 4 = 4 + 4$</div><div>$\text{Double } 4 \text{ is } 8$</div></div></div>	Double ... is ... so double ... is ... <div><div> → </div><div><div>$\text{Double } 4 \text{ is } 8$</div><div> → </div><div><div>$\text{Double } 40 \text{ is } 80$</div></div></div></div>													

Multiplication

Progression of skills	Key representations																																									
<h3>The 2 times-table</h3> <p>Encourage daily counting in multiples both forwards and back. Notice that all multiples of 2 are even numbers.</p>	<p>... lots of 2 = ... $\times 2 =$</p> <div></div>	<p>... times 2 is equal to ...</p> <table border="1"><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> <p>$1 \times 2 = 2$ $2 = 1 \times 2$ $2 \times 2 = 4$ $4 = 2 \times 2$ $3 \times 2 = 6$ $6 = 3 \times 2$</p> <p>0 2 4 6 8 10 12 14 16 18 20 22 24</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										
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<h3>The 10 times-table</h3> <p>Encourage daily counting in multiples both forwards and back. Notice the pattern in the numbers.</p>	<p>... lots of 10 = ... $\times 10 =$</p> <div></div>	<p>... times 10 is equal to ...</p> <table border="1"><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></table> <p>$1 \times 10 = 10$ $10 = 1 \times 10$ $2 \times 10 = 20$ $20 = 2 \times 10$ $3 \times 10 = 30$ $30 = 3 \times 10$</p> <p>0 10 20 30 40</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	31	32	33	34	35	36	37	38	39	40
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Progression of skills	Key representations																																																					
<h3>The 5 times-table</h3> <p>Encourage daily counting in multiples both forwards and back. Notice the pattern in the numbers.</p>	<p>... lots of 5 =</p> <p>... $\times 5 =$</p> <div></div> <div></div> <div></div> <div><table border="1" data-bbox="582 648 994 719"><tr><td colspan="5"></td><td>?</td></tr><tr><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td></td></tr></table></div>						?	5	5	5	5	5		<p>... times 5 is equal to ...</p> <table border="1" data-bbox="1386 319 1810 484"><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></table> <div>$1 \times 5 = 5$$5 = 1 \times 5$</div> <div>$2 \times 5 = 10$$10 = 2 \times 5$</div> <div>$3 \times 5 = 15$$15 = 3 \times 5$</div> <div></div>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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<h3>Missing numbers</h3> <p>Make links to known facts.</p>	<p>... is equal to ... groups of ...</p> <p>18 socks, how many pairs? </p> <div></div>	<p>... times ... is equal to ...</p> <div>$\square \times 2 = 18$</div> <div>$18 = 2 \times \square$</div>																																																				



Progression of skills - Division

Year group	Skill
Reception	<ul style="list-style-type: none">• Sharing• Grouping
Year 1	<ul style="list-style-type: none">• Make equal groups – grouping• Make equal groups – sharing• Find a half• Find a quarter




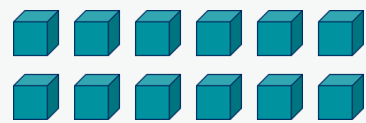




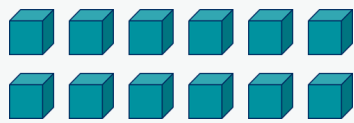
Progression of skills - Division

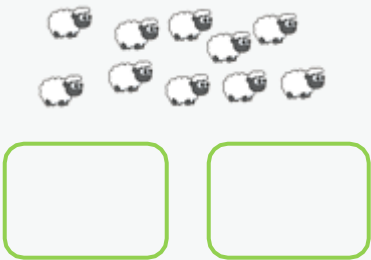
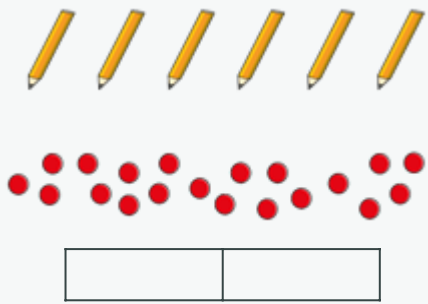
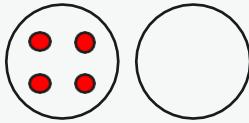
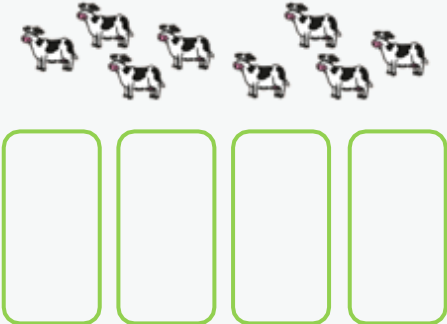
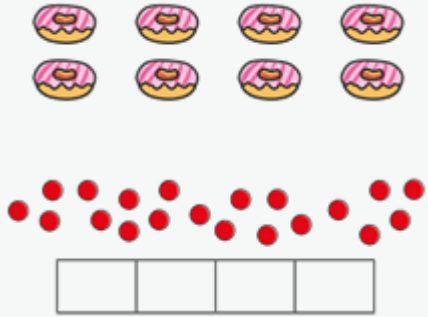

Year group	Skill
Year 2	<ul style="list-style-type: none">• Divide by 2• Divide by 10• Divide by 5• Missing numbers• Unit fractions• Non-unit fractions

Division

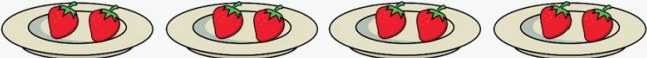

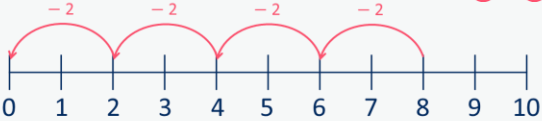

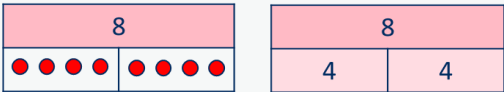
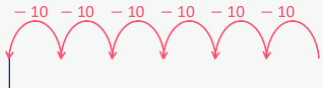
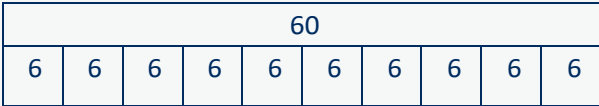
Reception	<ul style="list-style-type: none"> Have a deep understanding of number to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5 Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and some number bonds 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.
Progression of skills	Key representations
Sharing Provide practical activities such as sharing items during snack time. Encourage children to check whether items have been shared fairly (equally).	<p>There are ... altogether. They are shared equally between ... groups.</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>There are ... groups of ... There are ... altogether.</p> 

Division

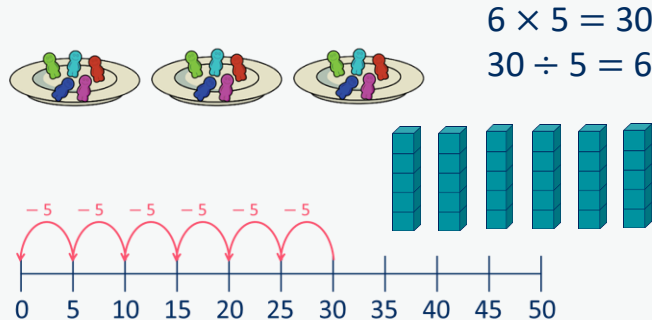
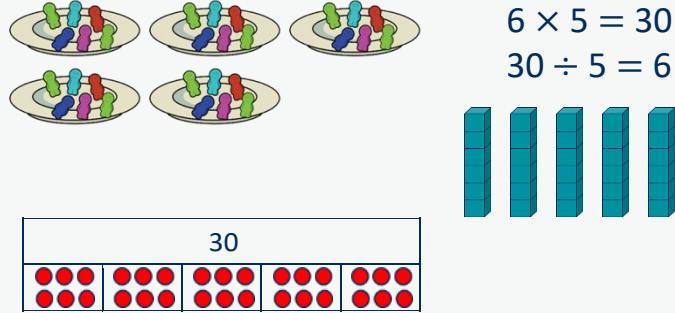
Year 1	<ul style="list-style-type: none"> Solve simple one-step problems involving division, using concrete objects, pictorial representations and arrays with the support of the teacher. Recognise, find and name a half as one of two equal parts of a quantity. Recognise, find and name a quarter as one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

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

Division

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

Division

Progression of skills	Key representations																																			
<div>Divide by 5</div> <div>Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.</div>	<div>There are ... equal groups of 5</div> <div>... ÷ 5 = ...</div> <div></div> <div>$6 \times 5 = 30$ $30 \div 5 = 6$</div>	<div>... shared equally between 5 is ...</div> <div>... ÷ 5 = ...</div> <div></div> <div>$6 \times 5 = 30$ $30 \div 5 = 6$</div>																																		
<div>Missing numbers</div> <div>Bar models are useful to show the link between multiplication and division.</div>	<div>... divided by 2/5/10 is equal to ...</div> <div><table border="1" data-bbox="571 825 758 905"><tr><td colspan="2">?</td></tr><tr><td>10</td><td>10</td></tr></table><div><input type="text"/> ÷ 2 = 10</div></div> <div><table border="1" data-bbox="571 925 1011 1006"><tr><td colspan="5">?</td></tr><tr><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td></tr></table><div><input type="text"/> ÷ 5 = 10</div></div> <div><table border="1" data-bbox="571 1026 1357 1108"><tr><td colspan="10">?</td></tr><tr><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td></tr></table><div><input type="text"/> ÷ 10 = 10</div></div>		?		10	10	?					10	10	10	10	10	?										10	10	10	10	10	10	10	10	10	10
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