



Nurtured we thrive

Calculation Policy

Compassion, Responsibility, Justice, Forgiveness

Member of Staff Responsible	Mrs C Prior
Position	Mathematics Lead
Dated	September 2025
Date of Next Review	September 2026

Thurnham Church of England Infant School

Progression towards a standard method of calculation

Introduction

The 2014 National Curriculum provides a structured and systematic approach to the teaching of calculation. At Thurnham Church of England Infant School, we followed the White Rose Maths Hub (WRMH) scheme of learning (version 3) in KS1 and Mastering Number for EYFS with the link to Numberblocks.

Providing a Context for Calculation

This calculation policy is organised according to age appropriate expectations as set out in the National Curriculum 2014. We have a mastery approach, which focuses on fluency, reasoning and problem solving.

It is important that any type of calculation is given a real-life context or problem-solving approach to help build children's understanding of the purpose of calculation, and to help them recognise when to use certain operations and methods. It is also important for children to be confident to use mental and written strategies to explain their thinking.

At Thurnham you will see children using a Concrete, Pictorial, Abstract approach when performing calculations. In practice this means that right across the school there will be a range of resources for the children to use, children will use jottings or pictorial representations of calculations and mental methods to help them with their calculations.

Aims

The aim of this policy is to ensure all children leave Thurnham Church of England Infant School with a secure understanding of the four operations and can confidently use both written and mental calculation strategies in a range of contexts. All our teaching and learning is underpinned by our Christian values of **Compassion, Responsibility, Justice and Forgiveness**.

Mathematical Vocabulary

See Appendix A for relevant Year group Mathematical Vocabulary.

Progression in Calculation

To develop efficient written calculation strategies, children need:

- Secure mental methods, which are developed from early years
- A solid understanding of the number system
- Practical hands-on experience, including a range of manipulatives
- Visual models and images including part-whole models, number lines and arrays
- Secure understanding of each stage before moving onto the next.

Children need to be taught and encouraged to use the following processes in deciding what approach they will take to a calculation, to ensure they select the most appropriate method for the numbers involved:

3. Can I do it in my head using a mental strategy or using a written method?

2. Could I use some jottings to help me?

1. What manipulatives will help me answer this question?

A Pathway to Teaching Calculation Methods


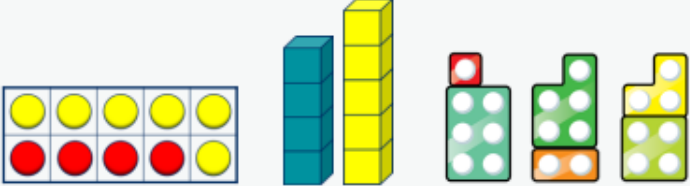


Expanded methods should be viewed as steps towards a standard method and not as methods in themselves. Before beginning to record in a more refined written format children must have had significant practical work reinforced with appropriate manipulative, models and images. Teachers will guide pupils to refine their written methods of recording by modelling and asking questions such as "What is the same? What's different?" Learning will be planned to ensure pupils are encouraged to use and apply what they have learnt to problem solving tasks. As children move along the pathway it is vital that they practice, reinforce, consolidate, use and apply it to mathematical learning and NOT simply move onto the next step.

The calculation policy follows the same concrete, pictorial, abstract approach as the White Rose schemes of learning that we use to plan our mathematics lessons. Where appropriate, sentence stems and key questions are included alongside the key representations.

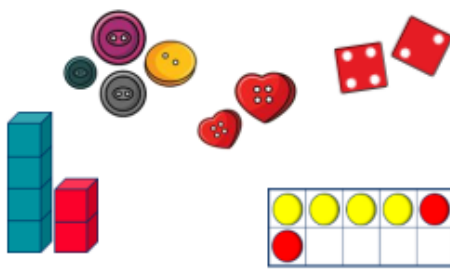
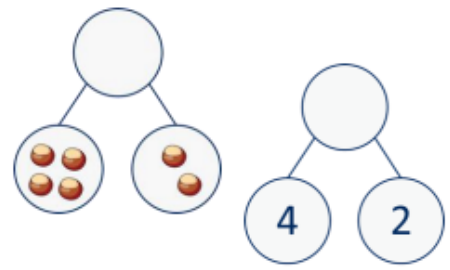
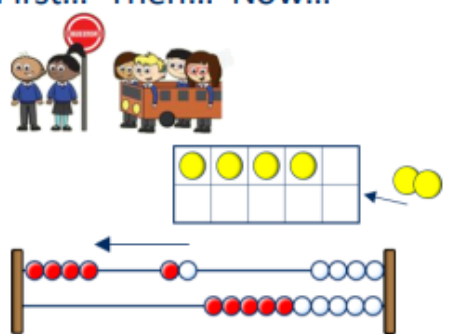
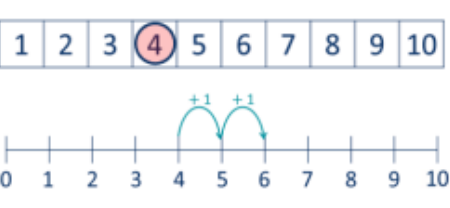
Addition

<p>Reception</p>	<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. 	
<p>Progression of skills</p>	<p>Key representations</p>	
<p>Conceptually subitise to 5</p> <p>Notice the parts that make up the whole.</p>	<p>What do you see? How do you see it?</p>	
<p>1 more</p> <p>Continue to link to stories, songs and rhymes.</p>	<p>1 more than ... is ...</p>	
<p>Notice the composition of numbers within 10</p> <p>Link to stories, songs and rhymes.</p>	<p>How many...? How many...? How many altogether?</p>	<p>How many ways can you make...?</p>

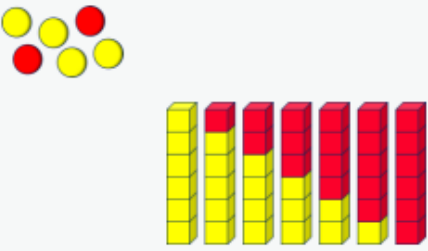
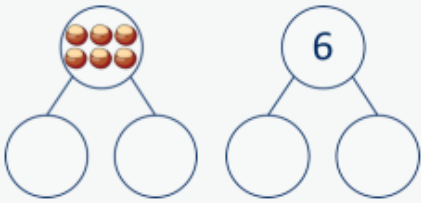
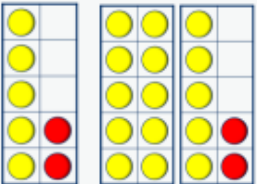
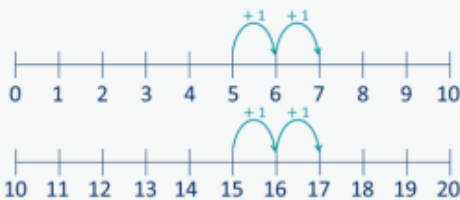
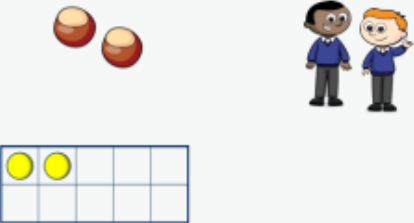
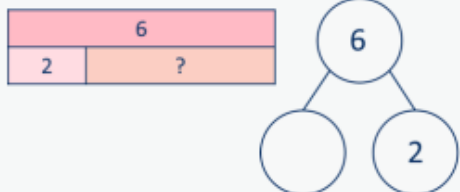

Addition

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> 

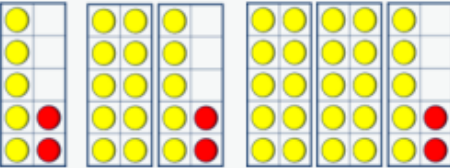
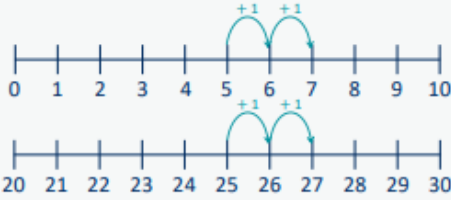
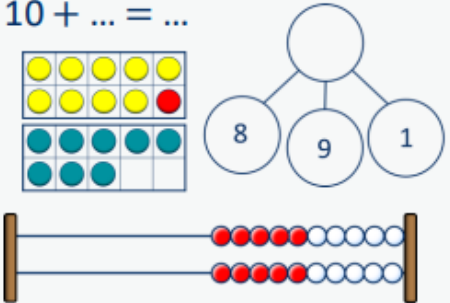
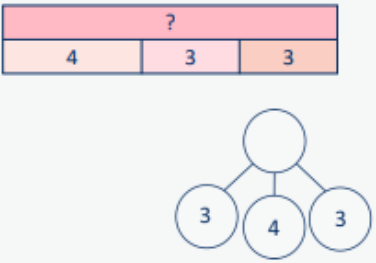
Addition

<p>Year 1</p>	<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 $7 = \square + 2$ 		
<p>Progression of skills</p>	<p>Key representations</p>		
<p>Add together (aggregation)</p> <p>2 quantities are combined to find the total.</p>	<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> $4 + 2 = 6$ $2 + 4 = 6$ $6 = 4 + 2$ $6 = 2 + 4$
<p>Add more (augmentation)</p> <p>A quantity is increased.</p>	<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> $4 + 2 = 6$ $2 + 4 = 6$ $6 = 4 + 2$ $6 = 2 + 4$

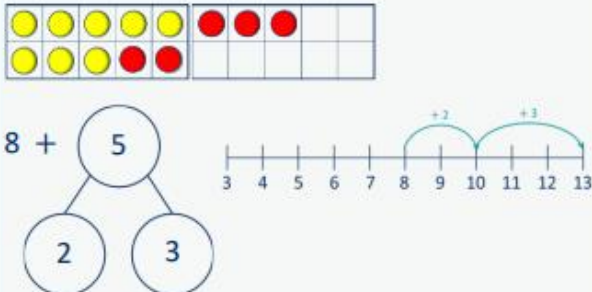
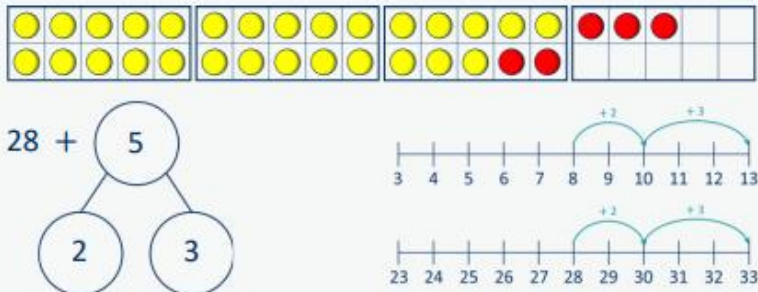
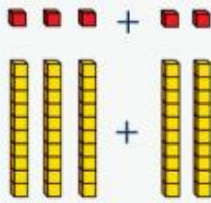
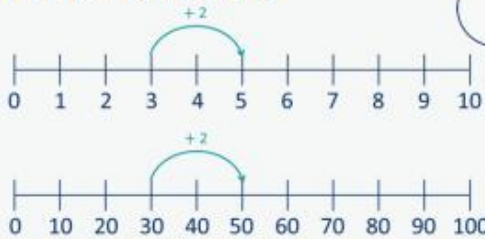
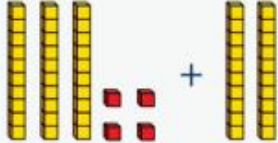
Addition

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

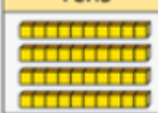

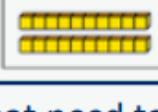

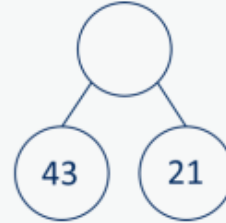
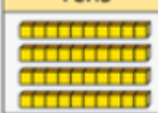

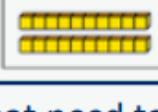

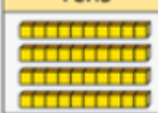

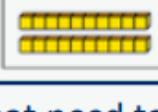



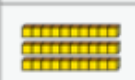


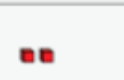


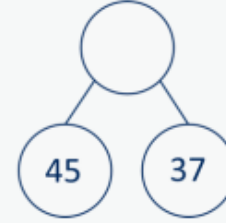


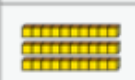


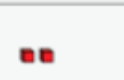




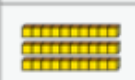


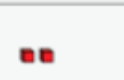


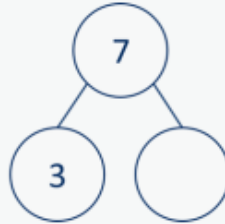
Addition

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

Addition

Progression of skills	Key representations																																																														
<p>Add across a 10</p> <p>Partition the number being added to make a full ten.</p>	<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>Add multiples of 10</p> <p>Make links to known facts within ten.</p>	<p>... ones + ... ones = ... ones so ... tens + ... tens = ... tens</p>  <p>$3 + 2 = 5$ $30 + 20 = 50$</p>	<p>What is the same? What is different?</p>  <table border="1"> <tr><td>?</td><td>?</td></tr> <tr><td>2</td><td>3</td></tr> <tr><td>?</td><td>?</td></tr> <tr><td>20</td><td>30</td></tr> </table>	?	?	2	3	?	?	20	30																																																					
?	?																																																														
2	3																																																														
?	?																																																														
20	30																																																														
<p>Add 10s to any number</p> <p>Make links to known facts.</p>	<p>... tens + ... tens = ... tens ... tens and ... ones = ...</p> 	<p>To add ... I need to add 10 ... times.</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> <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> <p>$30 + 20 = 50$ $34 + 20 = 54$</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																																																						
41	42	43	44	45	46	47	48	49	50																																																						
51	52	53	54	55	56	57	58	59	60																																																						


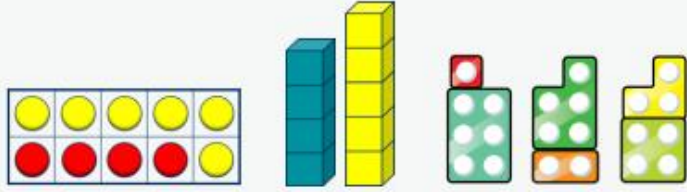
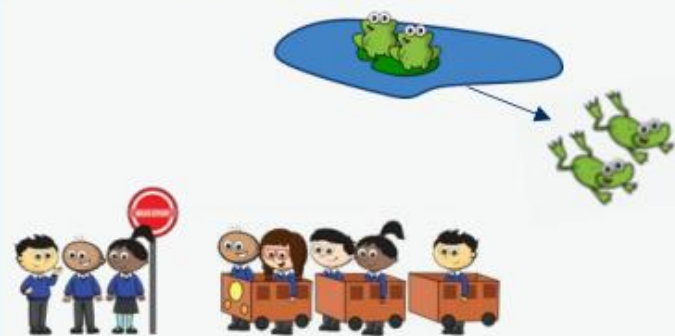

Addition

Progression of skills	Key representations																																													
<p>Add 2-digit numbers (not across a ten)</p> <p>Lining up ones and tens in columns will support with later written methods.</p>	<p>... ones + ... ones = ... ones ... tens + ... tens = ... tens</p> <div style="display: flex; align-items: center; justify-content: space-around;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <th style="background-color: #fff9c4;">Tens</th> <th style="background-color: #f8bbd0;">Ones</th> </tr> <tr> <td>  </td> <td>  </td> </tr> <tr> <td>  </td> <td>  </td> </tr> </table> <div style="text-align: center;">  </div> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td colspan="2" style="background-color: #f8bbd0;">?</td> </tr> <tr> <td style="background-color: #ffe0b2;">43</td> <td style="background-color: #ffe0b2;">21</td> </tr> </table> </div> <p>3 ones + 1 one = 4 ones 4 tens + 2 tens = 6 tens 6 tens + 4 ones = 64</p>			Tens	Ones					?		43	21																																	
Tens	Ones																																													
																																														
																																														
?																																														
43	21																																													
<p>Add 2-digit numbers (across a ten)</p> <p>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> <div style="display: flex; align-items: center; justify-content: center;"> <table border="1" style="border-collapse: collapse; text-align: center; margin-right: 20px;"> <tr> <th style="background-color: #fff9c4;">T</th> <th style="background-color: #f8bbd0;">O</th> </tr> <tr> <td>  </td> <td>  </td> </tr> <tr> <td>  </td> <td>  </td> </tr> </table> → <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <th style="background-color: #fff9c4;">T</th> <th style="background-color: #f8bbd0;">O</th> </tr> <tr> <td>  </td> <td>  </td> </tr> <tr> <td>  </td> <td>  </td> </tr> </table> </div> <div style="display: flex; align-items: center; justify-content: space-around; margin-top: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td colspan="2" style="background-color: #f8bbd0;">?</td> </tr> <tr> <td style="background-color: #ffe0b2;">45</td> <td style="background-color: #ffe0b2;">37</td> </tr> </table> <div style="text-align: center;">  </div> </div> <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>			T	O					T	O					?		45	37																											
T	O																																													
																																														
																																														
T	O																																													
																																														
																																														
?																																														
45	37																																													
<p>Missing numbers</p> <p>Solve missing number problems and use the inverse to check.</p>	<p>How many more do you need to make ...?</p> <div style="display: flex; align-items: center; margin-top: 10px;"> <table border="1" style="border-collapse: collapse; text-align: center; margin-right: 10px;"> <tr> <td style="background-color: #f8bbd0;">●</td> <td style="background-color: #f8bbd0;">●</td> <td style="background-color: #f8bbd0;">●</td> <td style="background-color: #f8bbd0;">●</td> <td style="background-color: #f8bbd0;">●</td> <td style="background-color: #f8bbd0;">●</td> <td style="background-color: #f8bbd0;">●</td> <td style="background-color: #f8bbd0;">●</td> <td style="background-color: #f8bbd0;">●</td> <td style="background-color: #f8bbd0;">●</td> <td style="background-color: #f8bbd0;">●</td> </tr> </table> <div style="margin-right: 10px;"> $6 + \square = 10$ $10 - \square = 6$ </div> </div>	●	●	●	●	●	●	●	●	●	●	●	<p>If ... is a whole and ... is a part, then ... is the other part.</p> <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="margin-right: 10px;"> $\square + 3 = 7$ $7 - 3 = \square$ </div> <div style="text-align: center;">  </div> </div>	<p>... can be partitioned into ... and ...</p> <p style="text-align: center;">$10 + 8 = 12 + \square$</p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td> </tr> <tr> <td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td> </tr> </table> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td> </tr> <tr> <td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td><td style="background-color: #f8bbd0;">●</td> </tr> </table> </div>	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●																																				
●	●	●	●	●	●	●	●																																							
●	●	●	●	●	●	●	●																																							
●	●	●	●	●	●	●	●																																							
●	●	●	●	●	●	●	●																																							

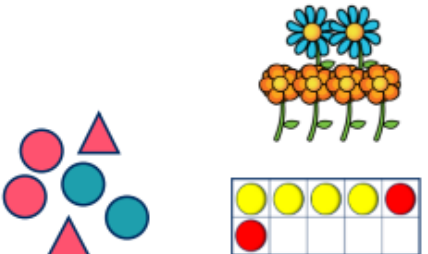
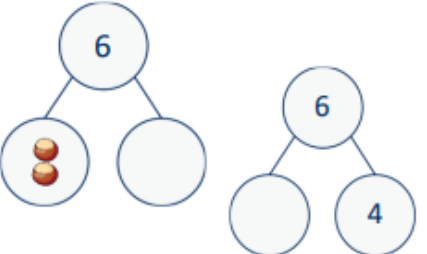
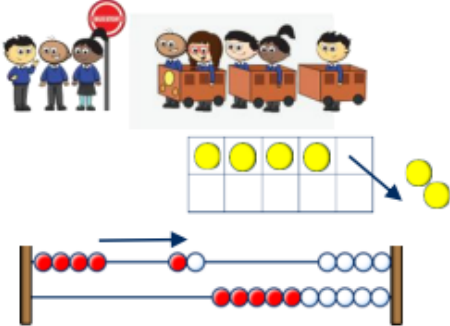
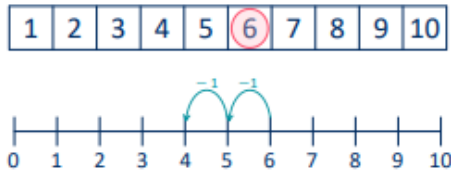
Subtraction

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

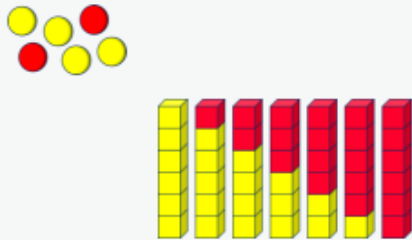
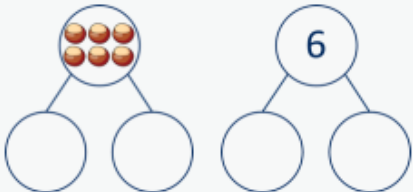
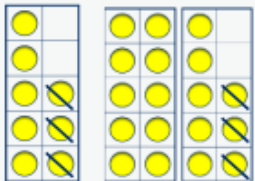
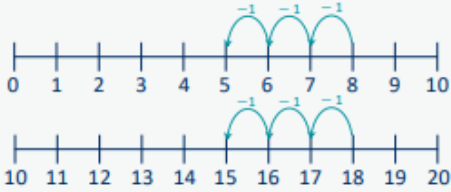
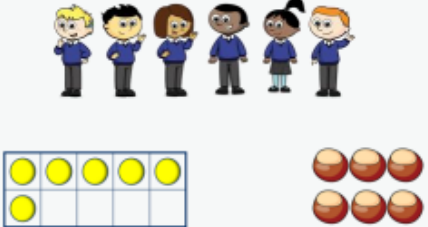
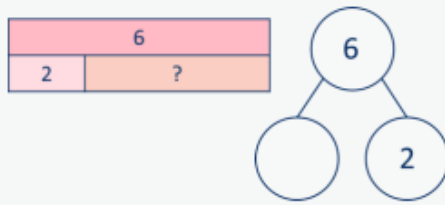

Subtraction

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


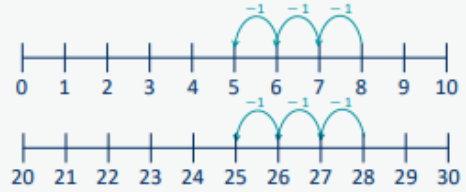
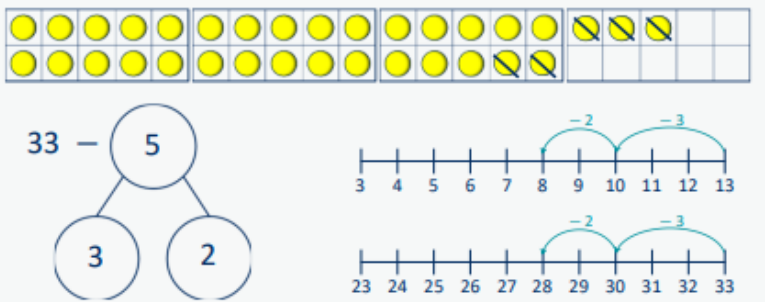
Subtraction

<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> $6 - 2 = 4$ $6 - 4 = 2$ $4 = 6 - 2$ $2 = 6 - 4$

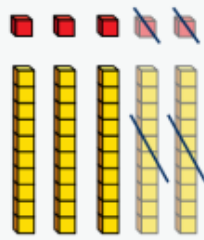
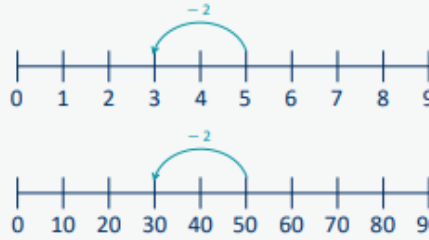
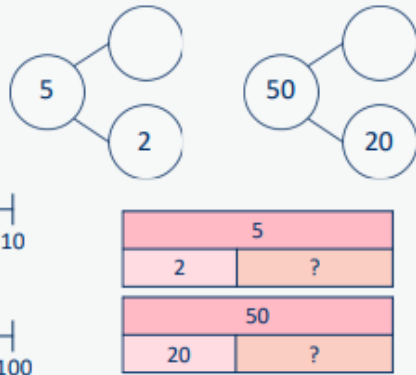
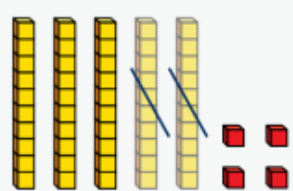
Subtraction

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

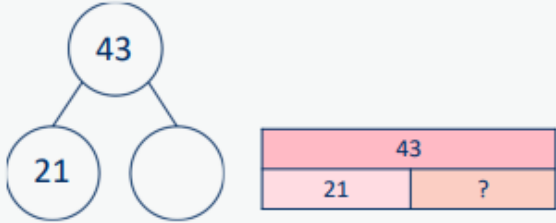
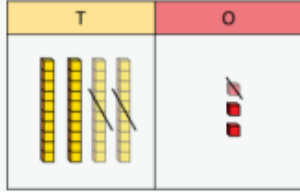
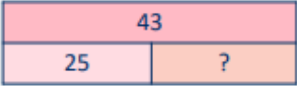
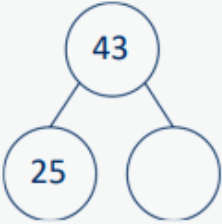
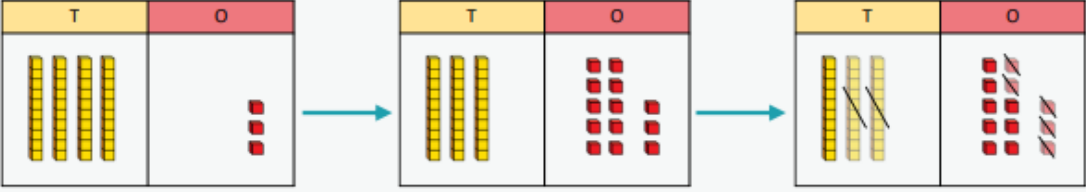
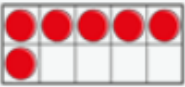
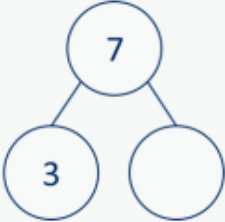
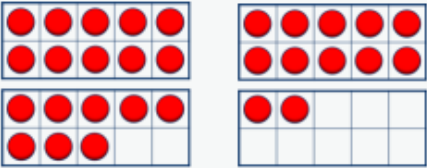
Subtraction

	<ul style="list-style-type: none"> Recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100 Subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> a two-digit number and 1s a two-digit number and 10s 2 two-digit numbers Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. 		
<p>Progression of skills</p>	<p>Key representations</p>		
<p>Subtract ones from any number (related facts)</p> <p>Make links to known facts.</p>	<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> $8 - 3 = 5$ $18 - 3 = 15$ $28 - 3 = 25...$
<p>Subtract across a 10</p> <p>Partition the number being subtracted to bridge through a ten.</p>	<p>... can be partitioned into ... and ...</p> 	<p>Make links with related facts.</p> 	



Subtraction

Progression of skills	Key representations																																																														
<p>Subtract multiples of 10</p> <p>Make links to known facts within ten.</p>	<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 border="1"> <tr><td colspan="2">5</td></tr> <tr><td>2</td><td>?</td></tr> </table> <table border="1"> <tr><td colspan="2">50</td></tr> <tr><td>20</td><td>?</td></tr> </table>	5		2	?	50		20	?																																																				
5																																																															
2	?																																																														
50																																																															
20	?																																																														
<p>Subtract 10s from any number</p> <p>Make links to known facts.</p>	<p>... tens – ... tens = ... tens ... tens and ... ones = ...</p> 	<p>To subtract ... I need to subtract 10 ... times.</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> <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>
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																																																						

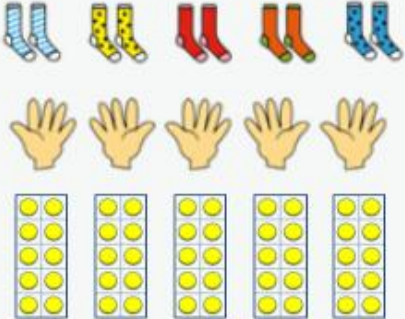


Subtraction

Progression of skills	Key representations		
<p>Subtract two 2-digit numbers (not across a ten)</p>	<p>... ones – ... ones = ... ones ... tens – ... tens = ... tens</p>   <p>3 ones – 1 one = 2 ones 4 tens – 2 tens = 2 tens 2 tens and 2 ones = 22</p>		
<p>Subtract two 2-digit numbers (across a ten)</p> <p>Begin to exchange 1 ten for 10 ones.</p>	<p>I need to make an exchange because I do not have enough ones to subtract ... ones.</p>    <p>3 ones – 5 ones (I need to exchange 1 ten for 10 ones)</p> <p>13 ones – 5 ones = 8 ones 3 tens – 2 tens = 1 ten 1 ten and 8 ones = 18</p>		
<p>Missing numbers</p> <p>Solve missing number problems and use the inverse to check.</p>	<p>How many do you need to subtract to make ...?</p>  <p>$10 - \square = 6$ $6 + \square = 10$</p>	<p>If ... is a whole and ... is a part, then ... is the other part.</p> <p>$7 - 3 = \square$ $\square + 3 = 7$</p> 	<p>... can be partitioned into ... and ...</p> <p>$18 - \square = 12 + 2$</p> 



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</p> <p>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</p> <p>Provide opportunities to make equal groups when tidying up or during snack time. Encourage children to check that each group has the same amount.</p>	<p>There are ... groups of ... There are ... altogether.</p> 









Multiplication

<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</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> 	<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> 	5	10	15	20				
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																																																				
5	10	15	20																																																										
<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>  <p>$10 + 10 + 10 = 30$</p> <p>$5 + 5 + 5 + 5 = 20$</p>		<p>What is the same? What is different?</p> <p>$2 + 2 + 2 =$</p> <p>$5 + 5 + 5 =$</p> <p>$10 + 10 + 10 =$</p> <p>Use objects or a drawing to represent the equal groups and find how many in total.</p>																																																										

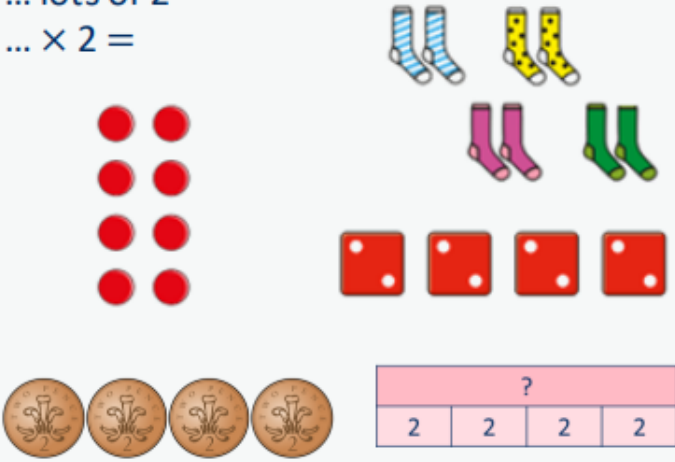

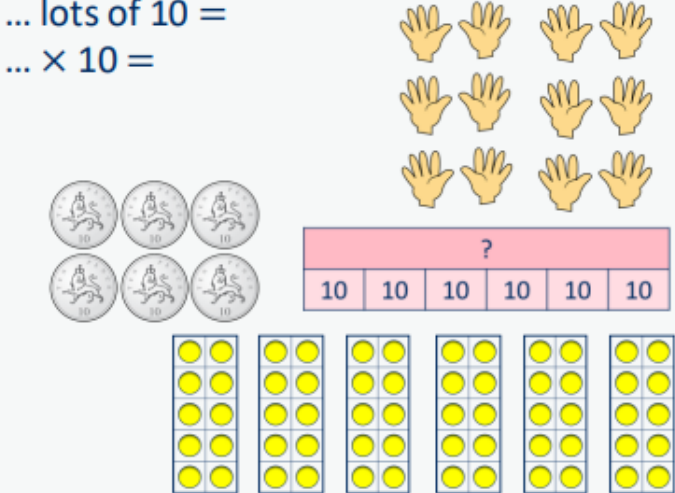

Multiplication

Progression of skills	Key representations
<p>Make arrays</p> <p>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</p> <p>Children understand that doubles are two equal groups. Children may begin to explore doubles beyond 20 using base 10</p>	<p>Double ... is + ... = ...</p> 




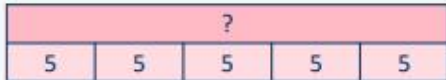
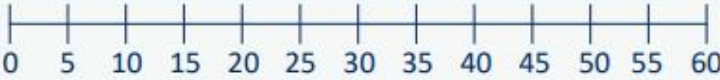

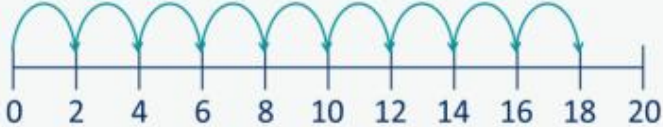
Multiplication

<p>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</p> <p>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> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;"> <table border="1" style="border-collapse: collapse;"> <tr><td colspan="2" style="text-align: center;">6</td></tr> <tr><td style="text-align: center;">3</td><td style="text-align: center;">3</td></tr> </table> </div> <div style="text-align: left;"> <p>$3 + 3 = 6$ $2 \times 3 = 6$</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;"> <table border="1" style="border-collapse: collapse;"> <tr><td colspan="4" style="text-align: center;">20</td></tr> <tr><td style="text-align: center;">5</td><td style="text-align: center;">5</td><td style="text-align: center;">5</td><td style="text-align: center;">5</td></tr> </table> </div> <div style="text-align: left;"> <p>$5 + 5 + 5 + 5 = 20$ $4 \times 5 = 20$</p> </div> </div>		6		3	3	20				5	5	5	5
6														
3	3													
20														
5	5	5	5											
<p>Use arrays</p> <p>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> <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">  <p>3 lots of 5 = 15 $5 + 5 + 5 = 15$</p> </div> <div style="text-align: center;">  <p>5 lots of 3 = 15 $3 + 3 + 3 + 3 + 3 = 15$</p> </div> </div>	<p>I can see ... \times ... and ... \times ...</p> <p style="text-align: center;">$3 \times 5 = 15$ $5 \times 3 = 15$ $3 \times 5 = 5 \times 3$</p>												
<p>Double</p> <p>Encourage children to make links with related facts.</p>	<p>Double ... is ...</p> <div style="display: flex; align-items: center;">  →  <div style="margin-left: 20px;"> <p>Double 4 = 4 + 4 Double 4 is 8</p> </div> </div> <p>Double ... is ... so double ... is ...</p> <div style="display: flex; align-items: center;">  →  <div style="margin-left: 20px;"> <p>Double 4 is 8 Double 40 is 80</p> </div> </div>													


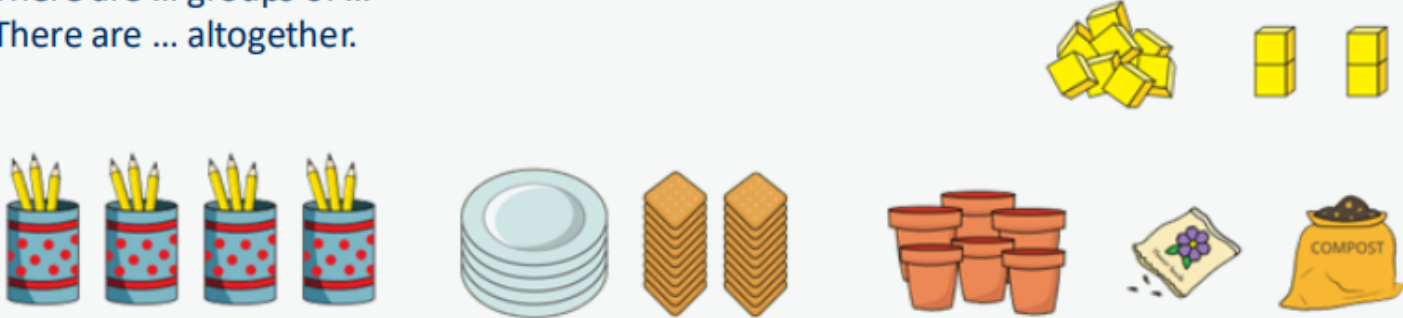
Multiplication

Progression of skills	Key representations																																									
<p>The 2 times-table</p> <p>Encourage daily counting in multiples both forwards and back. Notice that all multiples of 2 are even numbers.</p>	<p>... lots of 2 =</p> <p>... $\times 2 =$</p> 	<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> 	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										
1	2	3	4	5	6	7	8	9	10																																	
11	12	13	14	15	16	17	18	19	20																																	
21	22	23	24	25	26	27	28	29	30																																	
<p>The 10 times-table</p> <p>Encourage daily counting in multiples both forwards and back. Notice the pattern in the numbers.</p>	<p>... lots of 10 =</p> <p>... $\times 10 =$</p> 	<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> 	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
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																																	


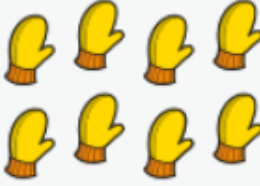

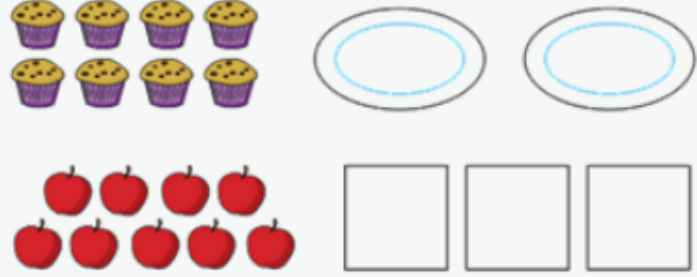

Multiplication

Progression of skills	Key representations																																									
<p>The 5 times-table</p> <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>    	<p>... times 5 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> $1 \times 5 = 5$ $5 = 1 \times 5$ $2 \times 5 = 10$ $10 = 2 \times 5$ $3 \times 5 = 15$ $15 = 3 \times 5$ </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
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																																	
<p>Missing numbers</p> <p>Make links to known facts.</p>	<p>... is equal to ... groups of ...</p> <p>18 socks, how many pairs?</p>  	<p>... times ... is equal to ...</p> <p>$\square \times 2 = 18$</p> <p>$18 = 2 \times \square$</p>																																								

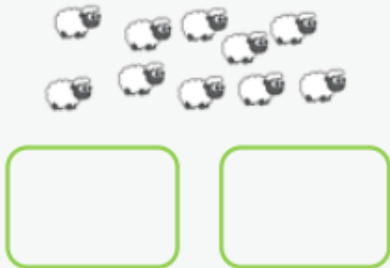
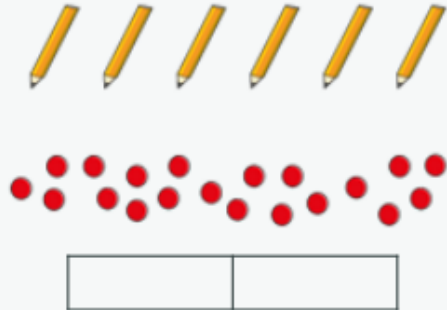
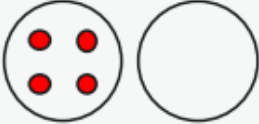

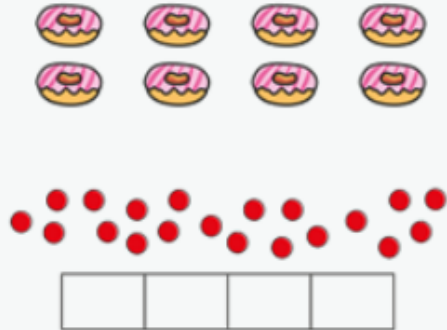
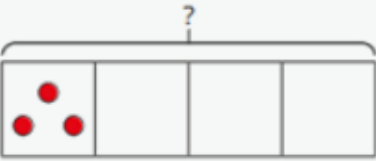
Division

<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</p> <p>Provide practical activities such as sharing items during snack time. Encourage children to check whether items have been shared fairly (equally).</p>	<p>There are ... altogether. They are shared equally between ... groups.</p> 
<p>Grouping</p> <p>Provide opportunities to make equal groups when tidying up or during snack time. Encourage children to check that each group has the same amount.</p>	<p>There are ... groups of ... There are ... altogether.</p> 






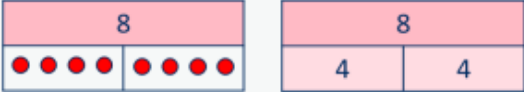
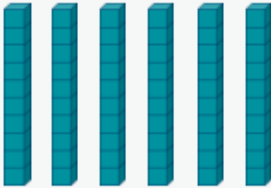
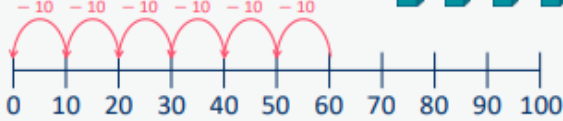
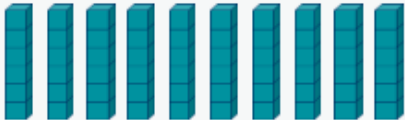
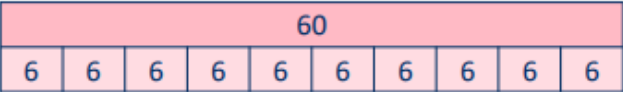
Division

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



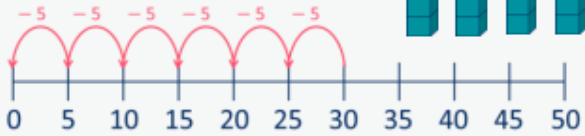


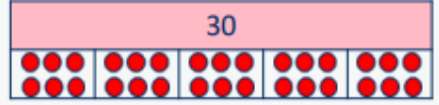
Division

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

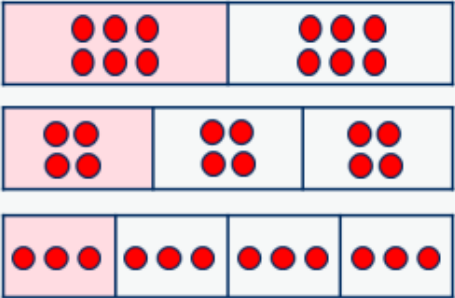

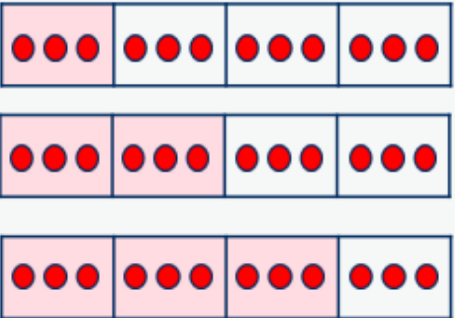
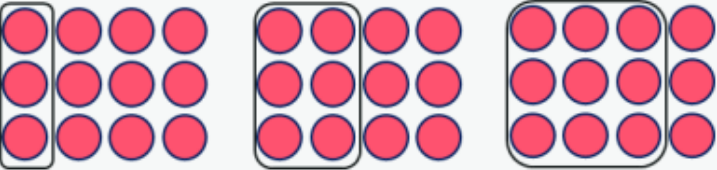
Division

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

Division

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

Division

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

Appendix A

Mathematical Vocabulary

COUNTING, PROPERTIES OF NUMBERS AND NUMBER SEQUENCES

number, zero, one, two, three... to twenty and beyond, zero, ten, twenty... one hundred, zero, one hundred, two hundred... one thousand
none how many...? count, count (up), to count on, (from, to) count back, (from, to) count in ones, twos, threes, fours, fives... count in tens,
more, less, many, few, tally, odd, even, every other, how many times? multiple of, sequence, continue, predict, pattern, pair, rule, =, <, >
signs

PLACE VALUE AND ORDERING

units, ones, tens, hundreds, digit, one-, two- or three-digit number 'teens' number, place, place value, stands for, represents, exchange,
the same number as, as many as, equal to, of two objects/amounts: greater, more, larger, bigger less, fewer, smaller, of three or more
objects/amounts: greatest, most, biggest, largest, least, fewest, smallest, one more, ten more one less, ten less, compare, order, size,
first, second, third... tenth... twentieth twenty-first, twenty-second... last, last but one, before, after next between, half-way between,
above, below

ESTIMATING

guess how many, estimate, nearly, roughly, close to, about the same as, just over, just under, exact, exactly, too many, too few, enough,
not enough, round, nearest, round to the nearest ten

FRACTIONS

part, equal parts, fraction, one whole, one half, two halves, one quarter, two... three... four quarters

ADDITION AND SUBTRACTION

+, add, addition, more, plus, make, sum, total, altogether, score, double, near double, one more, two more... ten more... one hundred more, how many more to make...? how many more is... than...? how much more is...?, -, subtract, subtraction, take (away), minus leave, how many are left/left over? one less, two less... ten less... one hundred less, how many fewer is... than...? how much less is...? difference between, half, halve, = equals, sign, is the same as tens boundary, inverse, part whole.

MULTIPLICATION AND DIVISION

lots of, groups of, ×, times, multiply, multiplied by multiple of once, twice, three times... ten times... times as (big, long, wide... and so on) repeated addition array row, column double, halve share, share equally one each, two each, three each... group in pairs, threes... tens equal groups of, ÷, divide, divided by, divided into left, left over

MEASUREMENT

(GENERAL) measure, size, compare, measuring, scale, guess, estimate, enough, not enough, too much, too little, too many, too few, nearly, roughly, about, close to, about the same as, just over, just under

LENGTH

length, width, height, depth, long, short, tall, high, low, wide, narrow, deep, shallow, thick, thin, longer, shorter, taller, higher... and so on longest, shortest, tallest, highest... and so on far, further, furthest, near, close, metre (m), centimetre (cm) ruler, metre stick, tape measure

MASS

weigh, weighs, balances, heavy/light, heavier/lighter, heaviest/lightest, kilogram (kg), half-kilogram, gram (g) balance, scales, weight

CAPACITY

capacity, full, half full, empty, holds, contains, litre (l), half-litre, millilitre (ml), container

TIME

time days of the week: Monday, Tuesday... months of the year: January, February... seasons: spring, summer, autumn, winter, day, week, fortnight, month, year, weekend, birthday, holiday, morning, afternoon, evening, night, midnight, bedtime, dinnertime, playtime, today, yesterday, tomorrow, before, after next, last, now, soon, early, late, quick, quicker, quickest, quickly, fast, faster, fastest, slow, slower, slowest, slowly, old, older, oldest, new, newer, newest, takes longer, takes less time, how long ago? how long will it be to...? how long will it take to...? hour, minute, second, o'clock, half past, quarter to, quarter past, clock, watch, hands, digital/analogue clock/watch, timer, how often? always, never, often, sometimes, usually, once, twice

TEMPERATURE

degrees °C

MONEY

coin, penny (p), pence, pound (£), price, cost, buy, bought, sell, sold, spend, spent, pay, change, dear, costs, more, cheap, costs less, cheaper, how much...? how many...? total

GEOMETRY

SHAPE AND SPACE

shape, pattern, flat, curved, straight, round, hollow, solid, corner, point, pointed face, side, edge, end, sort, make, build, draw, surface, edges, vertices, faces

3D SHAPES

cube, cuboid, pyramid, sphere, cone, cylinder

2D SHAPES

circle, circular, triangle, triangular, square, rectangle, rectangular, star, pentagon, hexagon, octagon

PATTERNS AND SYMMETRY

size, bigger, larger, smaller, symmetrical, line of symmetry, fold, match, mirror line, reflection, pattern, repeating pattern

POSITION, DIRECTION AND MOVEMENT

position over, under, underneath, above, through, to, from, towards, away from, clockwise, anti-clockwise, movement, slide, roll, whole turn, half turn, quarter turn, right angle, straight line, stretch, bend

STATISTICS

organising, data, count, tally, sort, vote, graph, block graph, pictogram, represent, group, set, same, different, list, table, label, title, most popular, most common, least popular, least common

MAKING DECISIONS AND REASONING

pattern, puzzle, calculate, calculation, mental calculation jotting, answer, right, correct, wrong what could we try next? how did you work it out? number sentence, sign, operation, symbol

INSTRUCTIONS

listen, join in, say, recite, think, imagine, remember, start from, start with, start at, look at, point to, show me, put, place, fit, arrange, rearrange, change, change over, split, separate, carry on, continue, repeat, what comes next? Predict, describe, the pattern, describe the rule, find, find all, find different, investigate, choose, decide, collect, use, make, build, tell me, describe, name, pick out, discuss, talk about, explain, explain your method, explain how you got your answer, give an example of... show how you... read, write, record, write in figures, present, represent, trace, copy, complete, finish, end, fill in, shade, colour, label, tick, cross, draw, draw a line between, join (up), ring, arrow, cost, count, tally, calculate, work out, solve, answer, check

GENERAL

same, different, missing number/s, number facts, number pairs, number bonds, number line, number track, number square, hundred square, number cards, number grid, abacus, counters, cubes, blocks, rods, die, dice, dominoes, pegs, peg board, geo-strips, same way, different way, best way, another way, in order, in a different order, not, all, every, each.