

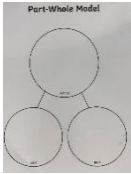






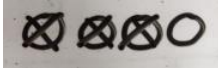
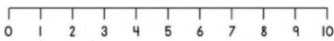
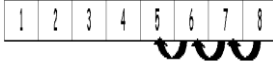

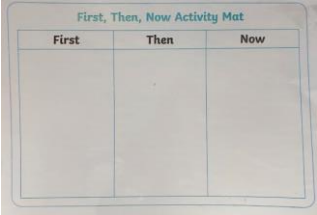
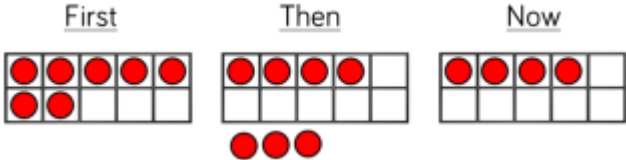



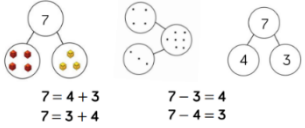
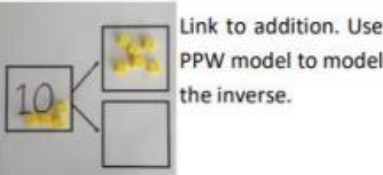
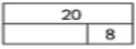



Year group	Mental strategies	Written methods	Models/images/representations	Vocabulary
4+	<p>Knowing the fact families (bonds to 10, doubles...) e.g. <math>3+7=10</math>. <math>10-2=8</math></p> <p>Knowing about zero</p> <p>Subtracting 1 (the number before your counting number – the number before 8 is one less than 8. It is 7)</p> <p>5 and how many more? e.g. Seeing 8 as 5 and 3), Seeing 7 as 5 and 2)</p>	<p>No formal written methods. Children can automatically recall number bonds to 10. They compare quantities up to 10 in different contexts and work out one more and one less. They can identify when quantities are greater than, less than or the same as other quantities. They solve simple 'real world' problems with numbers up to five.</p>	<p>5 frames /10 frames  </p> <p>Part/whole model  </p> <p>Fingers </p> <p>Numicon  <math>6 - 3 = ?</math> Cover over the starting number with the tile you are taking away. What's left?</p> <p>Cubes  – take away cubes from a group</p> <p>Using everyday objects (anything and everything!). Taking away from sets of objects: Use physical objects, counters, etc. to show how objects can be taken away. Count backwards as you take them away, or count the number you are taking away as you do it, then count how many are left </p> <p>bead strings – how many? One more, one less? </p>	<p>how many more to make..?</p> <p>how many more is ... than...?</p> <p>take (away) how many have gone? How many are left / left over?</p> <p>One less.... One more.... same different more than less than first then now equals part whole fewer</p>

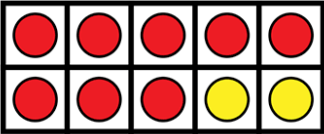
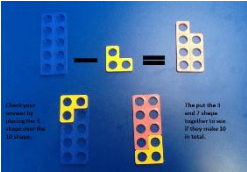
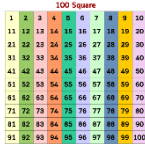


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			<p>Songs, rhymes, books, games, T.V. programmes e.g. 'Five little speckled frogs'; 'Ten green bottles'). Number jacks</p> <p>Whiteboards – making marks to subtract  <math>4 - 3 = 1</math></p> <p>Begin to use the symbols - and =</p> <p>Number lines/number tracks – jump back to subtract. Jump back under the line.  </p> <p>Problem solving within 5. They understand subtraction as removing some. They use the first, then, now model</p>   <p><b>First</b>                      <b>Then</b>                      <b>Now</b></p>  <p>Number sentence/story creation (<b>First</b>, there are 7 dogs at the park. <b>Then</b>, 3 run away. <b>Now</b> how many are left (at the park)?)</p> <p>Counting stick. </p>	



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			White Rose Maths Home Learning <a href="https://whiteroseeducation.com/parent-pupil-resources/maths/home-learning">https://whiteroseeducation.com/parent-pupil-resources/maths/home-learning</a>  TV programmes e.g. BBC iPlayer Newton Avenue , numberjacks <a href="https://www.bbc.co.uk/cbeebies/shows/number-one-newton-avenue">https://www.bbc.co.uk/cbeebies/shows/number-one-newton-avenue</a>	
<b>Year 1</b>	Using strategies from year/s before + teaching:  Counting back.  5 and a bit e.g. 7-5 (seeing 7 as 5 and 2).  10 and a bit e.g. 10 + 4 = 14 so 14 - 4 = 10.  A difference of 1 (consecutive numbers)	No formal written method. Children record their maths using different pictorial representations, models, number lines and mathematical statements. They use these models to represent and use their number bonds within 20 in different ways, and to subtract one digit and two digit numbers up to 20, including zero. They use these models to write mathematical statements and help them to solve simple 1 step problems, including those with missing numbers. Children are introduced to the term difference.	Part/whole model    If 10 is the whole and 6 is one of the parts, what is the other part? $10 - 6 = 4$  Bar modelling:  $20 - 8 =$  Tens frames:  $14 - 5 =$ Make 14 on the tens frame. Take 4 away to make ten, then take one more away so that you have taken away 5.	<u>as above and also:</u>  difference subtract minus number sentence tens ones

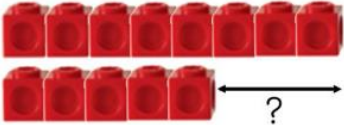
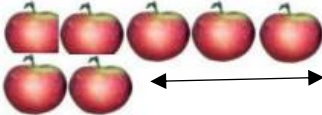
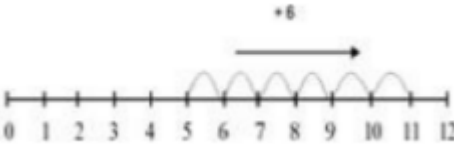
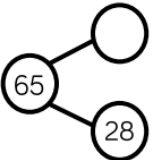


Year group	Mental strategies	Written methods	Models/images/representations	Vocabulary
	<p>A difference of 2 (consecutive odd or consecutive even numbers)</p>		<p>Tens frame and double sided counters:</p> <p>10 – 2 (put 10 counters on frame red side up, turn 2 over to subtract 2. Count how many red ones are left.)</p>  <p>Numicon</p>  <p><math>10 - 3 = 7</math></p> <p>Get 10, put 3 on top. How many are left? 7 (count). Check by doing <math>7 + 3 = 10</math></p> <p>Number square (count back)</p>  <p>Cubes/bead strings – make starting number. Take away.</p> <p>Taking away from sets of objects: Use physical objects, counters, cubes etc. to show how objects can be taken away. Count backwards as you take them away, or count the number you are taking away as you do it, then count how many are left. Do this with pictures and crossing out.</p>	

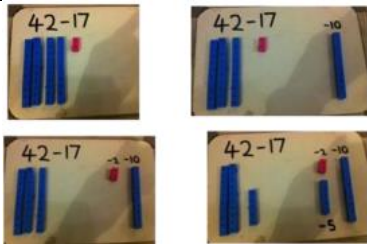

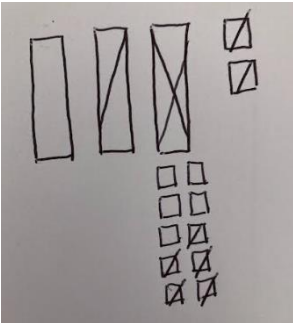


Year group	Mental strategies	Written methods	Models/images/representations	Vocabulary
			<div data-bbox="853 284 1151 555" data-label="Image"> </div> <p data-bbox="750 624 918 647">Number lines</p> <p data-bbox="750 655 1760 687">12- 5 (by counting back in ones or partitioning 5 to bridge the tens boundary; -2, -3)</p> <div data-bbox="750 724 1532 815" data-label="Figure"> </div> <p data-bbox="750 858 1070 882">Dienes base 10 equipment</p> <div data-bbox="770 935 842 1042" data-label="Image"> </div> <p data-bbox="860 932 1816 1031">12 - 5 = Make the number 12 and take 5 away. Make (exchange) the 10 rod into 10 ones if needed to subtract.</p>	



Year group	Mental strategies	Written methods	Models/images/representations	Vocabulary
			<p>Find the difference by comparing numbers practically (cubes/Numicon/cuisinare) then pictorially:</p>  <p>8 is 3 more than 5. The difference between 8 and 5 is 3.</p>  <p>The difference is 3.</p> <p>My sister is 7 and I am 5. My sister is 2 years older than me.</p> <p>Count on to find the difference using a number line.</p> 	
Year 2	<p>Using strategies from year/s before + teaching:</p> <p>Bridging through 10 e.g. 11-4=11-1-3</p>	<p>The children move onto subtracting:</p> <ul style="list-style-type: none"> <li>a two-digit number and ones</li> <li>a two-digit number and tens</li> <li>two two-digit numbers</li> </ul> <p>They should continue to use a range of practical apparatus, models and methods to subtract.</p>	<p>Part whole model: <math>65 - 28 = ?</math></p>  <p>Using Dienes practically then drawing tens and ones and place value charts. Beginning with subtracting 'friendly numbers' e.g. <math>32 - 11</math> and move onto those where an exchange of a ten is needed 'take and make - take a 10 and make 10 ones'. e.g. <math>65-28 = 37</math></p>	<p><u>as above and also:</u></p> <ul style="list-style-type: none"> <li>exchange</li> <li>take and make</li> <li>tens boundary</li> <li>calculate</li> <li>calculation</li> <li>inverse</li> <li>mental calculation</li> <li>jotting</li> <li>correct</li> <li>incorrect</li> </ul>




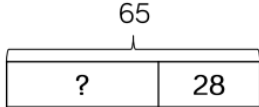
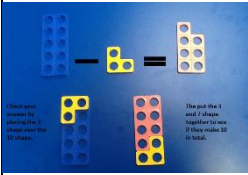

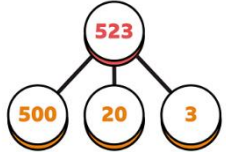
Year group	Mental strategies	Written methods	Models/images/representations	Vocabulary
	<p>Subtracting from 10 e.g. 12-4 (take 4 from the ten and add the 2 on)</p> <p>Counting up to find the difference.</p> <p>Take away 10's, then take away 1's. e.g. 56 – 24</p> <p>Take away 20, then take away 4.</p> <p>Using knowledge of number bonds to 10 e.g. 60 -4. 30-6.</p>	<p>Children should have a range of strategies to choose from to answer a subtraction question and know how they will 'exchange' a ten when needed: 'Take a ten, and make ten ones' including number lines and drawing 10's and 1's (see right).</p> <p>Continue to develop understanding of difference and that this can be found by counting on (easier with bigger numbers), or subtracting (smaller numbers only or when no exchange is needed) using the models/strategies.</p>	<p></p> <p>Practically</p> <p><u>Drawing 10's and 1's</u></p> <p>No exchange needed: <math>22 - 11 = 11</math>            Draw 2 tens blocks (20) and 2 ones (2 squares) to make 22. Cross out to take 11 (10 and 1) away.</p> <p></p> <p>Exchange needed: <math>32 - 17 = 15</math>            Draw 32. Exchange one ten for 10 ones by crossing it out. Then subtract 17 (one ten and seven ones).</p> <p></p>	<p>digit</p>



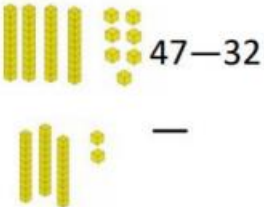
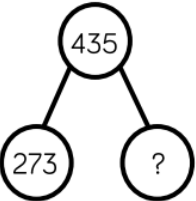
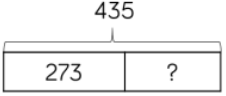

Year group	Mental strategies	Written methods	Models/images/representations	Vocabulary
			<p><u>Place value charts</u></p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><math>65 - 28 = 37</math> Exchange is needed. Take away 20 by crossing out. Haven't got 8 ones so 'take a 10, and make 10 ones'. Then continue to subtract by crossing out.</p> </div> <div style="text-align: center;"> <p>Use place value <math>65 - 28 = 37</math>. Take away 20, then take away 8 by counting back (or using other mental strategies for smaller numbers).</p> </div> </div> <p>Number lines. Using a marked number line (as Year 1), moving on to using a blank number line and subtracting in more efficient jumps (10's etc.) Move backwards under the numberline showing jumps.</p> <p><b><math>145 - 32 =</math></b></p> <p><b><math>84 - 73</math></b> <b>Counting up to find the difference</b></p> <p style="text-align: right;"><b><math>= 11</math></b></p> <p>Firstly counting on to the next ten.</p>	





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			<p>Use a number square</p>  <p>Bar modelling</p> <p>There are 65 children are at a party. 28 leave. How many are left on the bus?</p>  <p>Numicon</p>  <p><math>10 - 3 = 7</math> Get 10, put 3 on top. How many are left? 7 (count). Check by doing <math>7 + 3 = 10</math> Use the same method with larger numbers.</p>	
Year 3	<p>Using strategies from year/s before + teaching:</p> <p>Partitioning the minuend e.g. 63-48 (partition 63 into 50+13,</p>	<p>Children set out a subtraction vertically with the largest number on the top of the working out. Begin with numbers that do not require exchanging. This should be taught in parallel with children using expanded addition method.</p> <p>Keep the numbers manageable for the</p>	<p>Place value cards/interactives/base 10/Numicon/part whole model to help with partitioning</p>  	<p><u>as above and also:</u></p> <p>hundreds boundary method increase decrease strategy place value place holder</p>



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	<p>then 50-40 and 13-8) – compare with exchanging.</p> <p>Taking away near 10 (to subtract 9 – take away 10, add 1) To subtract 11, take away 10, take away 1)</p>	<p>individual children. Start with 2 digit numbers moving onto 3 digits once secure with the method.</p> <p>Using the expanded form helps the children to understand the process of exchanging.</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <math display="block">65 - 23 = 42</math> <math display="block">\begin{array}{r} 60 + 5 \\ - 20 + 3 \\ \hline 40 + 2 \end{array}</math> <p style="text-align: center; border: 1px solid black; border-radius: 15px; padding: 2px;">No exchange needed</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <math display="block">165 - 123 = 42</math> <math display="block">\begin{array}{r} 100 + 60 + 5 \\ - 100 + 20 + 3 \\ \hline 0 + 40 + 2 \end{array}</math> </div> <div style="border: 1px solid black; padding: 5px;"> <math display="block">62 - 28 = 34</math> <math display="block">\begin{array}{r} 60 + 12 \\ - 20 + 8 \\ \hline 30 + 4 \end{array}</math> <p style="text-align: center; border: 1px solid black; border-radius: 15px; padding: 2px;">Exchanging</p> </div>	<div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>Model practically before moving to more abstract methods. Include modelling of exchanging (see Year 2).</p> </div> </div> <p style="font-size: small; margin-top: 10px;">Use base 10 or Numicon to model</p> <div style="text-align: center; margin: 20px 0;"> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: inline-block;"> <math>435 - 273 = 262</math> </div> </div> <table border="1" style="width: 100%; text-align: center; font-size: small;"> <thead> <tr style="background-color: #f2f2f2;"> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> <table border="1" style="width: 100%; text-align: center; font-size: small;"> <thead> <tr style="background-color: #f2f2f2;"> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <p style="margin-top: 20px;">Part whole model/bar model used for subtraction of whole numbers, and fractions and to find the difference.</p>	Hundreds	Tens	Ones							Hundreds	Tens	Ones							
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		$\begin{array}{r} 162 - 128 = 34 \\ 100 + 60 + 12 \\ - 100 + 20 + 8 \\ \hline 0 + 30 + 4 \end{array}$	<p>Cubes/counters/base10/Numicon used to support subtraction.</p>																	
<p><b>Year 4</b></p>	<p>Adjusting the subtrahend and seeing how this affects the difference e.g. 84-39 (84-40 is 44 so 84-39 increases the difference by 1)</p> <p>Adjusting the minuend and seeing how this affects the difference e.g. 67-28 (68-28 is 40)</p>	<p>Children move onto using the compact method of subtraction with numbers up to 4 digits. If not confident exchanging, they can continue to use the expanded method and equipment until fully understood.</p> $\begin{array}{r} 3 \ 1 \\ 4357 \\ - 2735 \\ \hline 1622 \end{array}$	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> </div> <div style="text-align: center;"> </div> </div> <div style="text-align: center; margin-top: 20px;"> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; display: inline-block;"> <math>4,357 - 2,735 = 1,622</math> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <table border="1" style="border-collapse: collapse; width: 100%;"> <thead> <tr> <th style="background-color: #f4a460;">Thousands</th> <th style="background-color: #f4a460;">Hundreds</th> <th style="background-color: #f4a460;">Tens</th> <th style="background-color: #f4a460;">Ones</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> </tbody> </table> </div> <div style="text-align: center;"> <table border="1" style="border-collapse: collapse; width: 100%;"> <thead> <tr> <th style="background-color: #f4a460;">Thousands</th> <th style="background-color: #f4a460;">Hundreds</th> <th style="background-color: #f4a460;">Tens</th> <th style="background-color: #f4a460;">Ones</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> </tbody> </table> </div> </div>	Thousands	Hundreds	Tens	Ones					Thousands	Hundreds	Tens	Ones					<p><i>as above</i></p>
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	so 67-28 decreases the difference by 1)																																					
Year 5	Using equivalent differences e.g. 56 - 39=57-40	Children continue to use the compact method (as in Year 4) to subtract. They move onto using numbers with more than 4 digits, and decimal numbers with up to 3 decimal places. A range of contexts are used to explore decimals including money and measures.	<p style="text-align: center;"><b>294,382 – 182,501 = 111,881</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>HTh</th> <th>TTh</th> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td><del>10000</del> <del>10000</del></td> <td><del>1000</del> <del>1000</del> <del>1000</del> <del>1000</del></td> <td><del>1000</del> <del>1000</del> <del>1000</del></td> <td>1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000</td> <td>100 100 100 100 100 100 100 100 100</td> <td>10 10 10 10 10 10 10 10 10</td> <td>1 <del>1</del></td> </tr> </tbody> </table> <table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td></td> <td>2</td> <td>9</td> <td><del>3</del></td> <td><sup>1</sup>3</td> <td>8</td> <td>2</td> </tr> <tr> <td>-</td> <td>1</td> <td>8</td> <td>2</td> <td>5</td> <td>0</td> <td>1</td> </tr> <tr> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>8</td> <td>8</td> <td>1</td> </tr> </tbody> </table>	HTh	TTh	Th	H	T	O	<del>10000</del> <del>10000</del>	<del>1000</del> <del>1000</del> <del>1000</del> <del>1000</del>	<del>1000</del> <del>1000</del> <del>1000</del>	1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000	100 100 100 100 100 100 100 100 100	10 10 10 10 10 10 10 10 10	1 <del>1</del>		2	9	<del>3</del>	<sup>1</sup> 3	8	2	-	1	8	2	5	0	1		1	1	1	8	8	1	<p><u>as above and also:</u></p> <p>tenths hundredths thousandths</p>
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-	1	8	2	5	0	1																																
	1	1	1	8	8	1																																



Year group	Mental strategies	Written methods	Models/images/representations	Vocabulary
			<p style="text-align: center;"><b>5.43 - 2.7 = 2.73</b></p>	
Year 6		Children continue to use the compact written method to subtract (see Year 4/5) with numbers up to 7 digits and decimals.	See Year 5	<i>as above</i>