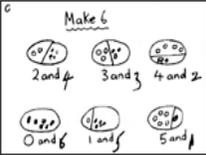
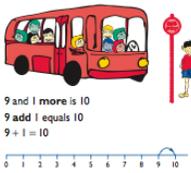
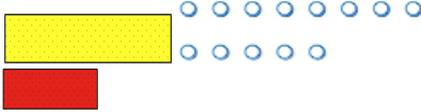
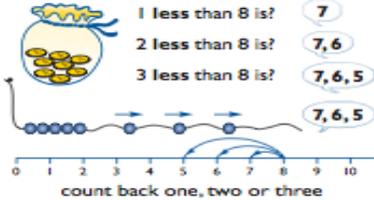
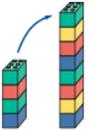
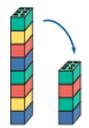
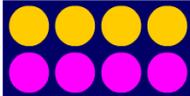


In order to encourage children to work mentally, calculations should always be presented horizontally so children can make decisions about how to tackle them.

	National Curriculum	Guidance	Addition To be taught alongside each other	Subtraction	Vocabulary
Y1	<p>Pupils will be taught to:</p> <p>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</p> <p>represent and use number bonds and related subtraction facts within 20</p> <p>add and subtract one-digit and two-digit numbers to 20 (9 + 9, 18 - 9), including zero</p> <p>solve simple one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.</p>	<p>Pupils will memorise and reason with number bonds to 10 and 20 in several forms (e.g. 9 + 7 = 16; 16 - 7 = 9; 7 = 16 - 9). They should realise the effect of adding or subtracting zero.</p> <p>Pupils will combine and increase numbers, counting forwards and backwards.</p> <p>They will discuss and solve problems in familiar practical contexts, including using quantities. Problems will include the terms put together, add, altogether, total, take away, difference between, more than and less than so that pupils develop the concept of addition and subtraction and are enabled to use these operations flexibly.</p>	<p>Children should be encouraged to show pictorial recordings of their calculations including number sentences.</p>   <p>Bead strings or bead bars should be used to illustrate addition including bridging through ten by counting on 2 then counting on 3. e.g. <math>8 + 5 = 8 + 2 + 3</math>.</p>  <p>The children should use number tracks and number lines marked out in jumps of one and practical resources to support calculation. They may begin to use number lines marked out in jumps of five and ten.</p> <p>Teachers will need to model the use of the number line. Children will then begin to use number lines, counting on in ones, to support their own calculations. <b>The link between the bead bar and number line must be made explicit.</b> Use to begin to illustrate that addition can be done in any order and to recognise that more than two numbers can be added.</p>  <p>Numicon should also be used to model bridging through ten by counting on 2 then counting on 3.</p>  <p><math>8 + 2 + 3 = 13</math></p> <p>Numicon software should also be used during teacher led whole class and guided groups. Children should also have access to this independently both on the interactive whiteboard and on class computers and laptops.</p> <p>Children must have access to a range of counters and resources such as to solve addition calculations. It is important that children are able to explore a range of resources and consider, <b>verbalise &amp; reason</b> which is most appropriate for a given calculation.</p>	<p>There were 8 balloons, 2 popped. How many were left?</p>  <p>Children need practical activities of 'taking away', that is finding how many are left from a collection of objects when some are removed.</p> <p>Children also need practical activities of 'finding the difference', which involves making a comparison between the numbers in two groups of objects.</p>  <p>The bead bar and the number line should also be used to show that <math>8 - 5</math> means the 'difference between 8 and 5' or 'the difference between 5 and 8' and how many jumps they are apart.</p> <p>Bead strings or bead bars can be used to illustrate subtraction including bridging through ten by counting back 3, then counting back 2</p> <p><math>13 - 5 = 8</math></p>  <p>Use the language of 'more than', 'less than' and 'difference between', together.</p> <p>Begin to use and show how to add or subtract 9 by adding or subtracting 10 and adjusting by 1. Refer to as 'over jumping 10'.</p> <p><b>Visualising <math>10 = 9 + 1</math>   <math>9 = 10 - 1</math></b></p> <p>Children should then begin to use number lines to support their own calculations, counting back in ones.</p> 	<p>+ , add, more, plus make, sum, total altogether score double, near double one more, two more... ten more how many more to make...? how many more is... than...? how much more is...? -, subtract, take (away), minus leave how many are left/left over? how many have gone? one less, two less, ten less... how many fewer is... than...? how much less is...? difference between half, halve =, equals, sign, is the same as</p>

In order to encourage children to work mentally, calculations should always be presented horizontally so children can make decisions about how to tackle them.

	National Curriculum	Guidance	Multiplication <span style="background-color: #00FFFF;">To be taught alongside each other</span> Division	Vocabulary	
Y1	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>Solve simple one-step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</li> </ul>	<p>Through grouping and sharing small quantities, pupils should begin to understand multiplication and division; doubling numbers and quantities, and finding simple fractions of objects, numbers and quantities.</p> <p>They should make connections between arrays, number patterns, and counting in twos, fives and tens.</p>	<p>Children will experience equal groups of objects.</p> <p>They will count in 2s and 10s and 5's.</p> <p>They will work on practical problem solving activities involving equal sets or groups.</p>   <p>Children should experience doubling numbers in a range of contexts.</p>  <p>double 4 is 8 <math>4 \times 2 = 8</math></p>  <p><math>2 + 2 = 4</math> double 2 is 4</p>  <p><math>4 - 2 = 2</math> half of 4 is 2</p> <p>They should begin to understand multiplication as repeated addition and as an array in context e.g. eggs in a box and cakes in a tin.</p> <p>Connective model: context, image and language and don't forget the symbols!</p> <p>e.g. <math>5 \times 2 = 5</math> multiplied by 2 = 5 '2 times' = <math>5+5</math> Also, 10 divided by 5 equals 2</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Make connections between arrays, number patterns and counting in 2's, 5's, 10's.</p> <p>Children will need to be taught the language of 'rows' and 'columns'. The multiplication ITP is a good visual image. They should explore them in the environment.</p> </div>  	<p>Children will understand equal groups and share items out in play and problem solving.</p>  <p>Children should experience halving numbers in a range of contexts. (Object, shape &amp; quantity)</p>  <p>half of 8 is 4 <math>8 \div 2 = 4</math></p>  <p><math>2 + 2 = 4</math> double 2 is 4</p>  <p><math>4 - 2 = 2</math> half of 4 is 2</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Children should experience finding, recognising &amp; naming one half as one of two equal parts and one quarter as one of four equal parts.</p> </div>  <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Make arrays to find division facts for <math>\frac{1}{2}</math> &amp; <math>\frac{1}{4}</math></p> </div>  <p>Teacher to model the recording of finding halve and quarter of an array, for example 8 divided by 2 is 4.</p>	<p>Equal sets/groups Half/halve, double Share, left over</p> <div style="border: 1px solid black; padding: 5px; margin-top: 100px;"> <p><b>Equipment:</b> Numicon Counters Beadstrings Cubes Numberlines Number tracks Number tiles Coat hangers &amp; pegs Practical Counting equipment Dishes/hoops Socks/Gloves ITP's</p> </div>