



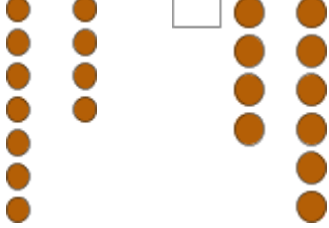
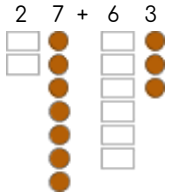
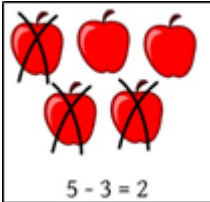
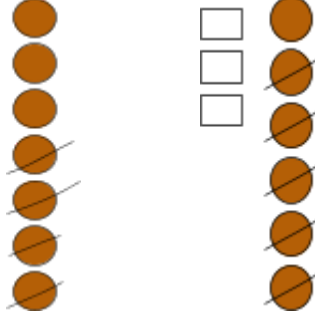


# Calculation Policy: FS

## Foundation Stage ELG:


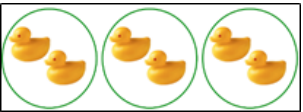

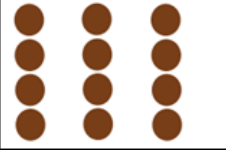
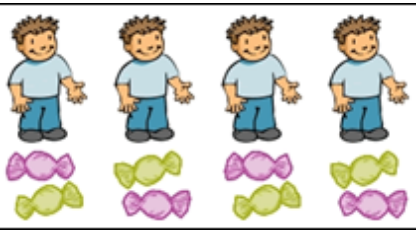
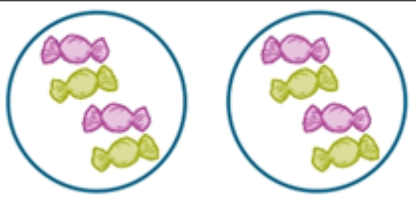
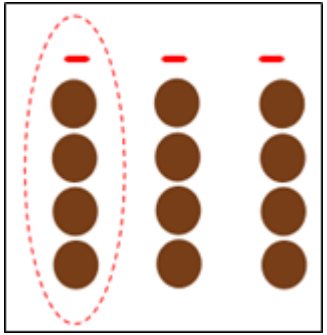
- Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number.
- Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer.
- They solve problems, including doubling, halving and sharing.

	Addition		Subtraction	
Mental Calculation Strategies	<p>Children to find one more than a given number by counting on.</p> <p>1→ 2→ 3→ 4→ 5→ 6→ 7→ 8→ 9→10</p>	<p>Use fingers as practical apparatus to solve addition calculations.</p>  <p>5 + 5 = 10</p>	<p>Children to find one less than a given number by counting backwards.</p> <p>10→ 9→ 8→ 7→ 6→ 5→ 4→ 3→ 2→1</p>	<p>Use fingers as practical apparatus to solve subtraction problems.</p>  <p>10 - 5 = 5</p>
Written Methods	<p>Solve simple addition problems using objects, pictures or practical apparatus.</p> <p>Combine two sets of objects and count all to find the total.</p> <p>3 + 3 = 6</p>  <p>Using pictures and marks to illustrate how they have solved an addition problem.</p> <p>3 + 2 = 5</p> 	<p>Use simplified illustrations (arrays of Maltesers) to create a picture of an addition problem.</p> <p>7 + 4 = 11      1 4 + 6 = 20</p>  <p>Addition of two numbers horizontally by partitioning into Maltesers and counting all.</p> <p>2 7 + 6 3 = 90</p> 	<p>Solve simple subtraction problems using objects, pictures or practical apparatus.</p> <p>Children to solve subtraction calculations by taking away objects.</p> <p>Cross out pictures to demonstrate taking away.</p>  <p>5 - 3 = 2</p>	<p>Use simplified illustrations (arrays of Maltesers) to create a picture of a subtraction problem.</p> <p>7 - 4 = 3      3      6 - 5 = 31</p>  <p>Subtraction of two numbers horizontally by partitioning the larger number into Maltesers, crossing out the number to be taken away (beginning at the bottom) and then counting all that are 'left'.</p>

# Calculation Policy: FS

## Foundation Stage ELG:

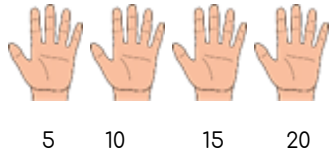
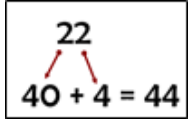
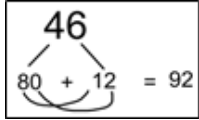
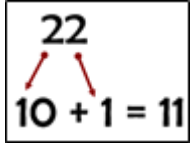
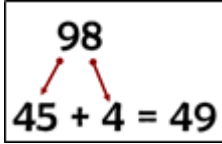
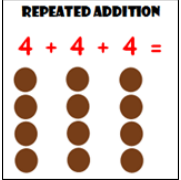
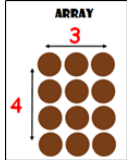
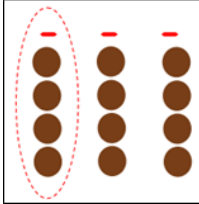
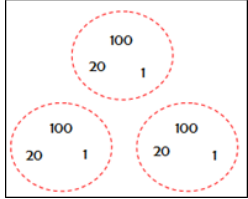
- Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number.
- Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer.
- They solve problems, including doubling, halving and sharing.


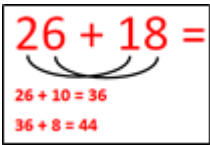

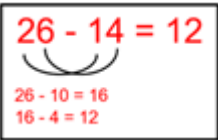
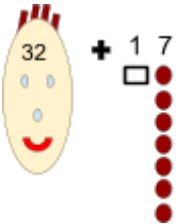
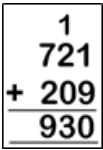
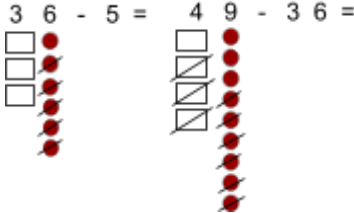
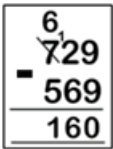
	Multiplication	Division		
Mental Calculation Strategies	<p><b>Counting by rote:</b> Children can count in 2s and 10s.</p> <p>Children can also count by rote using fingers to count in groups.</p> <p><b>Times tables:</b> Know by heart the facts for the 2x and 10x tables.</p>	<p><b>Doubling:</b> Children should be able to double each whole number to 5 (recall).</p> <p>Children can use fingers to double each number to 5 ...</p> <p>Example</p>  <p><math>3 + 3 = 6</math></p>	<p><b>Halving:</b> Children should be able to half each even number to 10 (recall).</p>	
Written Methods	<p><b>Count repeated sets of objects:</b></p> <p>Combine repeated sets of objects. Count objects by grouping into given amounts.</p>  <p>Skip Counting: 2, 4, 6</p> <p>Group pictorial arrays into sets i.e group socks into sets of two.</p> 	<p><b>Repeated Addition:</b></p> <p>Solve through repeated addition using simple illustrations (arrays of maltesers).</p> <p>E.g. There are 4 apples in a box. How many apples in 3 boxes?</p> <p><b>REPEATED ADDITION</b></p> <p><math>4 + 4 + 4 =</math></p> 	<p><b>Share objects equally.</b></p>  	<p><b>Sharing:</b></p> <p>Use simplified illustrations (arrays of Maltesers) to create pictures of a division problems.</p> <p><math>12 \div 3 =</math></p> 

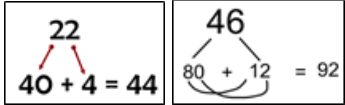
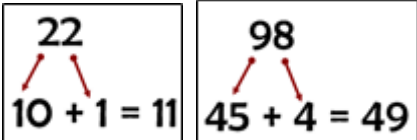
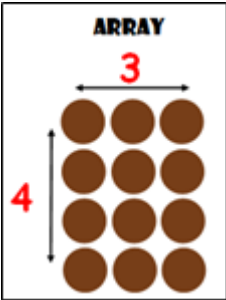
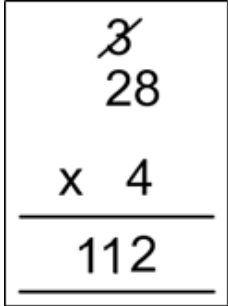
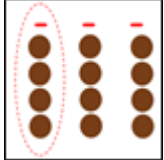
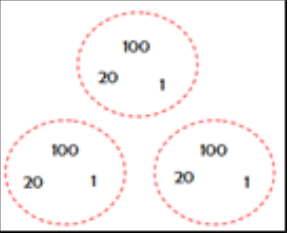
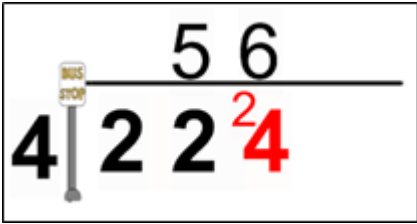
# Calculation Policy: KS1

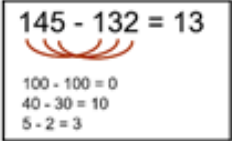
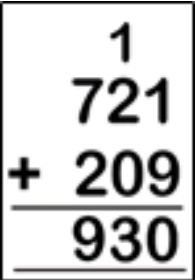
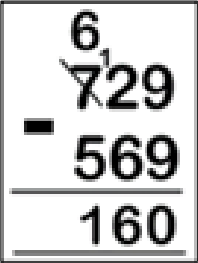
	Y1	Yr 2		
	<ul style="list-style-type: none"> <li>- Bonds to 10/20</li> <li>- Subtraction facts from 10/20</li> <li>- Add and subtract one-digit and two-digit numbers to 20, including zero</li> </ul>	<ul style="list-style-type: none"> <li>· Times tables: x2, x5, x10</li> <li>· Double numbers to 20</li> <li>· Double multiples of 10 (up to 100)</li> <li>· Halve even numbers to 20</li> <li>· Halve multiples of 10 (up to 100)</li> </ul>	<ul style="list-style-type: none"> <li>· Add and subtract:               <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> <li>- adding three one-digit numbers</li> </ul> </li> </ul>	
	<b>Addition</b>		<b>Subtraction</b>	
Mental Calculation Strategies	<p>Addition of a single digit number by counting on (possibly using fingers for support). Children put the big number in their head and count on the number of places indicated by the smaller number.</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <math>17 + 9 = 26</math> </div>	<p>Addition of a 2-digit number, using partitioning. First add the tens and then add the units.</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <math>26 + 18 =</math>  <math>26 + 10 = 36</math>  <math>36 + 8 = 44</math> </div>	<p>Subtraction of a single digit number by counting back (possibly using fingers to support). Children put the big number in their head and count the number of places indicated by the smaller number.</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <math>18 - 7 = 11</math> </div>	<p>Subtraction of a 2-digit number, using partitioning. First subtract the tens and then subtract the units.</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <math>26 - 14 = 12</math>  <math>26 - 10 = 16</math>  <math>16 - 4 = 12</math> </div>
Written Methods	<p>Addition of two numbers horizontally by partitioning into Maltesers and counting all (two digit + one digit, and two digit + two digit).</p> <p><math>14 + 6 = 20</math>   <math>27 + 63 = 90</math></p>	<p>Addition of two numbers horizontally by partitioning the smaller number into Maltesers and counting 'on' (putting the biggest number first)</p> <p><math>32 + 17</math>   <math>41 + 57 =</math></p>	<p>Subtraction of two numbers horizontally by partitioning the larger number into Maltesers, crossing out the number to be taken away (beginning at the bottom) and then counting all that are 'left'</p> <p><math>36 - 5</math></p>	<p>Subtraction of two numbers horizontally where a packet of 10 Maltesers needs to be opened - 'split'</p> <p><math>49 - 35 =</math>   <math>51 - 28 =</math></p>

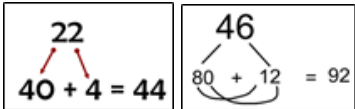
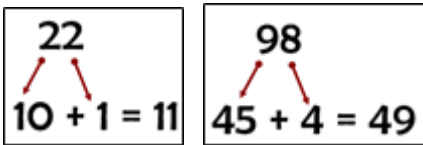
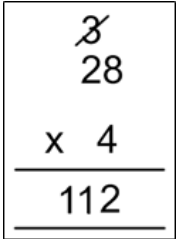
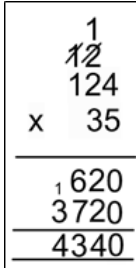
# Calculation Policy: KS1

	Y1	Yr 2		
	<ul style="list-style-type: none"> <li>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</li> <li>Add and subtract one-digit and two-digit numbers to 20, including zero</li> </ul>	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <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> <li>adding three one-digit numbers</li> </ul>	Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs.	
	<b>Multiplication</b>		<b>Division</b>	
Mental Calculation Strategies	<p><b>Counting by rote:</b> Children can count in 2s, 3s, 5s and 10s. e.g. counting fingers in 5s:</p>  <p>5    10    15    20</p> <p>Children can also count by rote using fingers to group in groups.</p> <p><b>Times tables:</b> Know by heart the facts for the 2x, 5x and 10x tables.</p>	<p><b>Doubling:</b> Children should be able to double each whole number to 10 (recall).</p> <p>For higher numbers, children should begin to use their knowledge of place value to partition, double each digit and then recombine.</p>  	<p><b>Counting by rote:</b> Children can use knowledge of the inverse to find division facts.</p> <p><b>Example:</b> <math>40 \div 10 = 4</math> Use fingers to count in groups of 10 until you reach 40. How many groups did they count?</p> <p>This strategy should be used for known tables (2x, 5x and 10x in KS1).</p>	<p><b>Halving:</b> Children should be able to half each even number to 20 (recall).</p> <p>For higher numbers, children should begin to use their knowledge of place value to partition, half each digit and then recombine (focus on even numbers to 100).</p>  
Written Methods	<p><b>Repeated Addition:</b> Solve through repeated addition. e.g. There are 4 apples in a box. How many apples in 3 boxes?</p> 	<p><b>Arrays:</b> Use arrays to create pictures of a multiplication problem. e.g. There are 4 apples in a box. How many apples in 3 boxes?</p> 	<p><b>Sharing:</b> Use arrays to create pictures of a division problems. e.g. <math>12 \div 3 =</math></p> 	<p><b>Grouping:</b> Use grouping to divide large numbers by a single digit. e.g. <math>363 \div 3 =</math></p> 

Calculation Policy: LKS2				
Y3		Y4		
<ul style="list-style-type: none"> <li>• multiplication and division facts for the 3, 4 and 8 X tables</li> <li>• through doubling, connect the 2, 4 and 8 multiplication tables</li> </ul>		<ul style="list-style-type: none"> <li>• multiplication and division facts for multiplication tables up to 12 x 12</li> <li>• recognise and use factor pairs and commutativity in mental calculations</li> </ul>		
<p>Yr 3 - Calculations (NC Links):</p> <ul style="list-style-type: none"> <li>• Pupils now use multiples of 2, 3, 4, 5, 8, 10, 50 and 100 when calculating.</li> <li>• Pupils should be taught to add and subtract numbers mentally, including:               <ul style="list-style-type: none"> <li>- a three-digit number and ones</li> <li>- a three-digit number and tens</li> <li>- a three-digit number and hundreds</li> </ul> </li> <li>• Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.</li> </ul>		<p>Yr 4 - Calculations (NC Links):</p> <ul style="list-style-type: none"> <li>• Show precision and fluency in their work.</li> <li>• Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</li> <li>• Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers</li> <li>• Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.</li> </ul>		
	Addition		Subtraction	
Mental Calculation Strategies	<p>Addition of a single digit number by counting on (possibly using fingers for support). Children put the big number in their head and count on the number of places indicated by the smaller number</p> 	<p>Addition of a 2-digit number, using partitioning. First add the tens and then add the units.</p> 	<p>Subtraction of a single digit number by counting back (possibly using fingers to support). Children put the big number in their head and count the number of places indicated by the smaller number.</p> 	<p>Subtraction of a 2-digit number, using partitioning. First subtract the tens and then subtract the units.</p> 
Written Methods	<p>Addition of two numbers horizontally by partitioning the smaller number into Maltesers and counting 'on' (putting the biggest number first)</p> 	<p>Column Addition: add the numbers by organising in columns. Top tips: 1) Line up your digits. 2) Carry your digits at the top. 3) Line up your decimals.</p> 	<p>Subtraction of two numbers horizontally by partitioning the larger number into Maltesers, crossing out the number to be taken away (beginning at the bottom) and then counting all that are 'left'.</p> 	<p>Column Subtraction: subtract the numbers by organising in columns. Top tips: 1) Line up your digits. 2) Borrow from your Neighbor. 3) Line up your decimals.</p> 

	Multiplication		Division	
Mental Calculation Strategies	<p><b>Counting by rote:</b> Children can count from 0 in 4s, 8s, 50s and 100s (Yr3) and count from 0 in 6s, 7s, 9s, 25s and 1000 (Yr4). Children can also count by rote using fingers to group in groups. Times tables: Know by heart the facts for the 2x, 3x, 4x, 5x, 8x and 10x tables (Yr3). By the end of Yr4, children should know by heart the facts for all tables up to x12.</p>	<p><b>Doubling:</b> Children should be able to double each whole number to 100.  For higher numbers, children should begin to use their knowledge of place value to partition, double each digit and then recombine.</p> 	<p><b>Counting by rote:</b> Children can use knowledge of the inverse to find division facts.  Example: <math>40 \div 10 = 4</math> Use fingers to count in groups of 10 until you reach 40. How many groups did they count?  This strategy should be used for known tables (2x, 3x, 4x, 5x, 8x and 10x in Yr3). It should be used for all tables to x12 in Yr4.</p>	<p><b>Halving:</b> Children should be able to half each number to 100.  For higher numbers, children should begin to use their knowledge of place value to partition, half each digit and then recombine (focus on even numbers to 100).</p> 
Written Methods	<p><b>Arrays:</b> Use simplified illustrations (arrays of Maltesers) to create pictures of a multiplication problem.  E.g. There are 4 apples in a box. How many apples in 3 boxes?</p> 	<p><b>Short Multiplication:</b> children need to use the multiplication tables they know to solve 2/3-digit numbers times 1-digit numbers. (They should progress from mental methods to formal written methods).</p> 	<p><b>Arrays and Grouping:</b> Use simplified illustrations (arrays of Maltesers) to create pictures of a division problems. Arrays – sharing:</p>  <p><math>12 \div 3 =</math></p> <p><b>Grouping:</b></p>  <p><math>363 \div 3 =</math></p>	<p><b>Short Division (bus stop):</b> Children should use known multiplication tables to solve 2/3-digit numbers divided by 1 digit. (They should progress from mental methods to formal written methods).</p> 

Calculation Policy: UKS2			
Y5	Y6		
Multiply and divide numbers mentally drawing upon known facts	Use all the multiplication tables to calculate mathematical statements.		
<p>Yr 5 - Calculations (NC Links):</p> <ul style="list-style-type: none"> <li>• Add and subtract whole numbers with more than 4 digits, including mentally and using formal written methods (columnar addition and subtraction).</li> <li>• Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.</li> <li>• Divide numbers up to 4 digits by a one-digit number using the formal written method of short division</li> </ul> <p>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p>	<p>Yr 6 - Calculations (NC Links):</p> <ul style="list-style-type: none"> <li>• Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</li> <li>• Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context</li> <li>• Divide numbers up to 4 digits by a two-digit number using the formal written method of short division</li> </ul>		
	<b>Addition</b>		<b>Subtraction</b>
Mental Calculation Strategies	Addition of a 2/3-digit number, using partitioning. First add the hundred, tens and then add the units.	Subtraction of a 2/3-digit number, using partitioning. First subtract the hundreds, then the tens and then the units.	
Written Methods	<p>Column Addition: add the numbers by organising in columns.</p> <p>Top tips:            1) Line up your digits.            2) Carry your digits at the top.            3) Line up your decimals.</p> 	<p>Column Subtraction: subtract the numbers by organising in columns.</p> <p>Top tips:            1) Line up your digits.            2) Borrow from your neighbour.            3) Line up your decimals.</p> 	

	Multiplication	Division	
Mental Calculation Strategies	<p><b>Doubling:</b></p> <p>Children should be able to double each whole number to 1000.</p> <p>For higher numbers, children should begin to use their knowledge of place value to partition, double each digit and then recombine.</p> 	<p><b>Mental multiplication using partitioning:</b></p> $17 \times 5 =$ $10 \times 5 = 50$ $7 \times 5 = 35$ $50 + 35 = 85$	<p><b>Halving:</b></p> <p>Children should be able to half each number to 1000.</p> <p>For higher numbers, children should begin to use their knowledge of place value to partition, half each digit and then recombine (focus on even numbers to 100).</p> 
Written Methods	<p><b>Short Multiplication:</b></p> <p>Use the multiplication tables they know to solve 2-digit numbers times 1-digit numbers (they should progress from mental methods to formal written methods).</p> 	<p><b>Long Multiplication:</b></p> <p>Use long multiplication to multiply up to 4-digits by a 2-digit number.</p> <p><b>Top Tips:</b> Line up the digits Carry at the top – cross out the digits you have carried to avoid adding them Twice.</p> 	<p><b>Short Division (bus stop):</b></p> <p>Children should use known multiplication tables to solve 2/3-digit numbers divided by 1 digit.</p> <p>(They should progress from mental methods to formal written methods).</p> 