

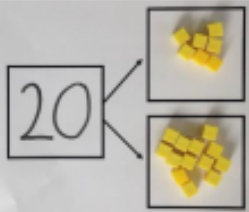

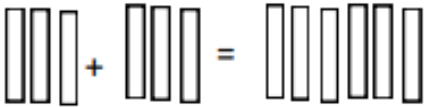
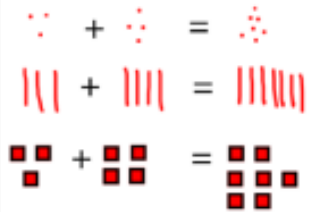


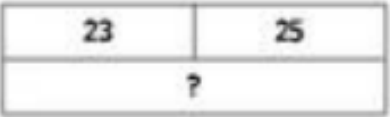
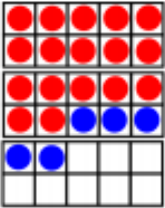
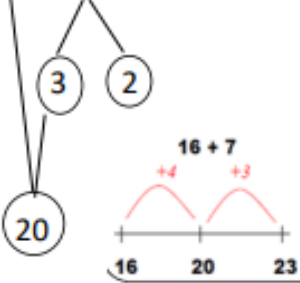
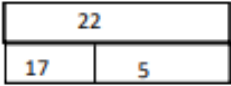

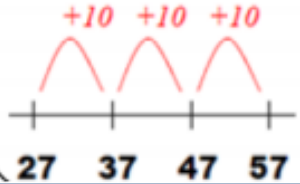

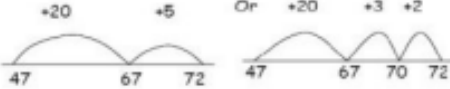
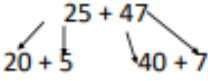

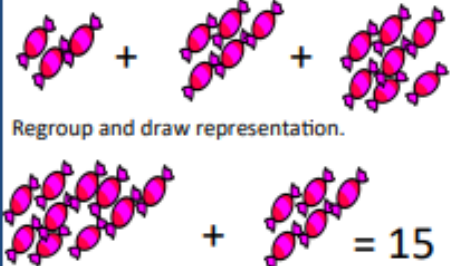




## **Maths Calculation Policy 2019**

**Year 2**

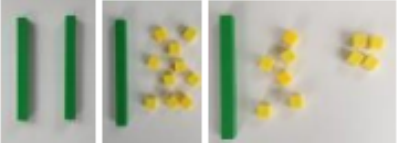
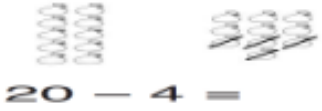

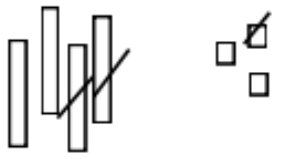
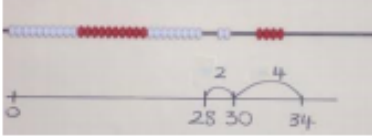
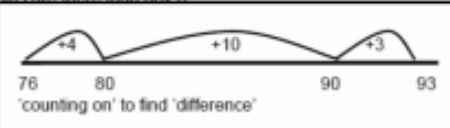
Objective & Strategy	Concrete	Pictorial	Abstract
Adding multiples of ten	$50 = 30 + 20$  Model using dienes and bead strings	 $3 \text{ tens} + 5 \text{ tens} = \text{---} \text{ tens}$ $30 + 50 = \text{---}$ Use representations for base ten.	$20 + 30 = 50$ $70 = 50 + 20$ $40 + \square = 60$
Use known number facts <i>Part part whole</i>	 Children explore ways of making numbers within 20	 $\square + \square = 20$ $20 - \square = \square$ $\square + \square = 20$ $20 - \square = \square$	$\square + 1 = 16$ $16 - 1 = \square$ $1 + \square = 16$ $16 - \square = 1$
Using known facts	$\square\square + \square\square = \square\square\square\square$ 	 Children draw representations of H,T and O	$3 + 4 = 7$ <i>leads to</i> $30 + 40 = 70$ <i>leads to</i> $300 + 400 = 700$
Bar model	 $3 + 4 = 7$	 $7 + 3 = 10$	 $23 + 25 = 48$

Objective & Strategy	Concrete	Pictorial	Abstract
Add a two digit number and ones	 <p><math>17 + 5 = 22</math></p> <p>Use ten frame to make 'magic ten'</p> <p>Children explore the pattern.</p> <p><math>17 + 5 = 22</math></p> <p><math>27 + 5 = 32</math></p>	<p><math>17 + 5 = 22</math></p> <p>Use part part whole and number line to model.</p> 	<p><math>17 + 5 = 22</math></p> <p>Explore related facts</p> <p><math>17 + 5 = 22</math></p> <p><math>5 + 17 = 22</math></p> <p><math>22 - 17 = 5</math></p> <p><math>22 - 5 = 17</math></p> 
Add a 2 digit number and tens	 <p><math>25 + 10 = 35</math></p> <p>Explore that the ones digit does not change</p>	<p><math>27 + 30</math></p> 	<p><math>27 + 10 = 37</math></p> <p><math>27 + 20 = 47</math></p> <p><math>27 + \square = 57</math></p>
Add two 2-digit numbers	 <p>Model using dienes, place value counters and numicon</p>	 <p>Use number line and bridge ten using part whole if necessary.</p>	<p><math>25 + 47</math></p>  <p><math>20 + 40 = 60</math></p> <p><math>5 + 7 = 12</math></p> <p><math>60 + 12 = 72</math></p>
Add three 1-digit numbers	 <p>Combine to make 10 first if possible, or bridge 10 then add third digit</p>	 <p>Regroup and draw representation.</p> <p><math>4 + 7 + 6 = 15</math></p>	<p><math>4 + 7 + 6 = 10 + 7</math></p> <p><math>= 17</math></p> <p>Combine the two numbers that make/ bridge ten then add on the third.</p>

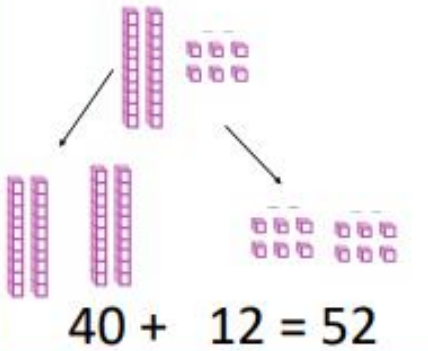
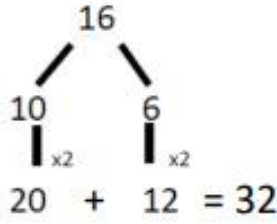
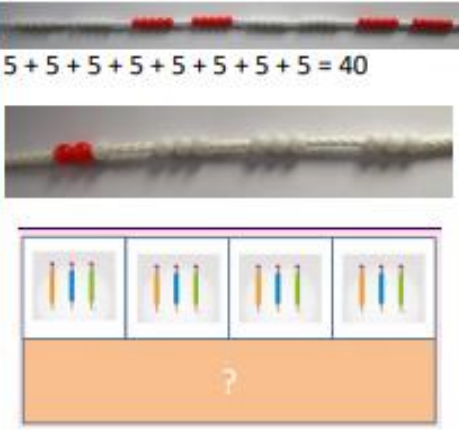
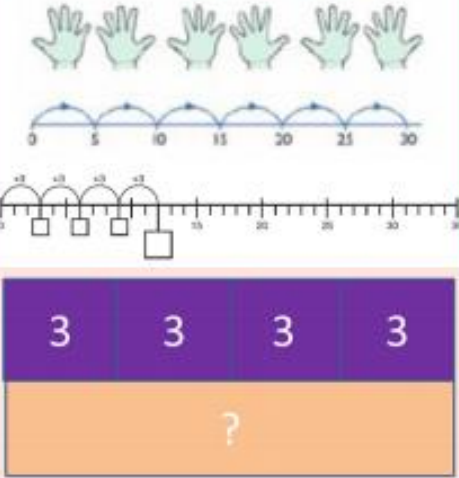
# Y2

# ADDITION

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Objective & Strategy	Concrete	Pictorial	Abstract
Regroup a ten into ten ones	 <p>Use a PV chart to show how to change a ten into ten ones, use the term 'take and make'</p>	 $20 - 4 = 16$	$20 - 4 = 16$
Partitioning to subtract without regrouping. <i>'Friendly numbers'</i>	$34 - 13 = 21$  <p>Use Dienes to show how to partition the number when subtracting without regrouping.</p>	Children draw representations of Dienes and cross off.  $43 - 21 = 22$	$43 - 21 = 22$
Make ten strategy <i>Progression should be crossing one ten, crossing more than one ten, crossing the hundreds.</i>	 $34 - 28$ <p>Use a bead bar or bead strings to model counting to next ten and the rest.</p>	 <p>Use a number line to count on to next ten and then the rest.</p>	$93 - 76 = 17$

# Y2 SUBTRACTION -

Objective & Strategy	Concrete	Pictorial	Abstract
Doubling	<p>Model doubling using dienes and PV counters.</p>  <p><math>40 + 12 = 52</math></p>	<p>Draw pictures and representations to show how to double numbers</p>	<p>Partition a number and then double each part before recombining it back together.</p>  <p><math>20 + 12 = 32</math></p>
<p>Counting in multiples of 2, 3, 4, 5, 10 from 0 (repeated addition)</p>	<p>Count the groups as children are skip counting, children may use their fingers as they are skip counting. Use bar models.</p>  <p><math>5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = 40</math></p> <p>?</p>	<p>Number lines, counting sticks and bar models should be used to show representation of counting in multiples.</p>  <p>?</p>	<p>Count in multiples of a number aloud.</p> <p>Write sequences with multiples of numbers.</p> <p>0, 2, 4, 6, 8, 10 0, 3, 6, 9, 12, 15 0, 5, 10, 15, 20, 25, 30</p> <p><math>4 \times 3 = \square</math></p>

# Y2

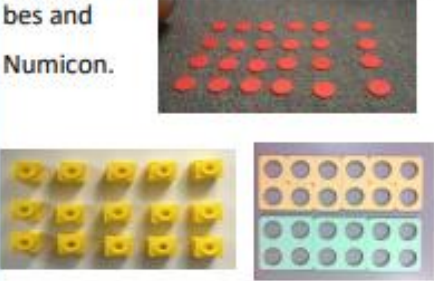
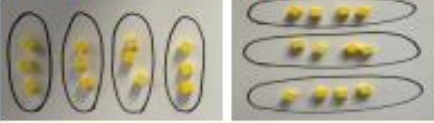
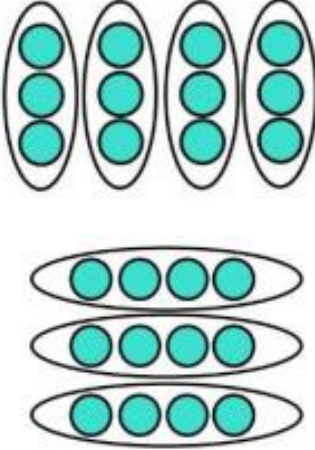


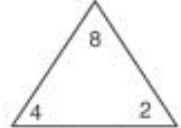
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# Y2

# MULTIPLICATION X

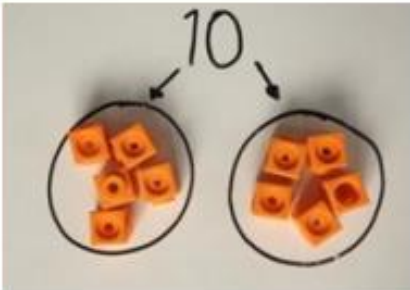

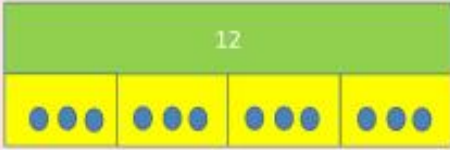
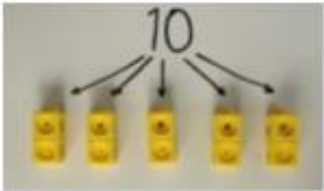

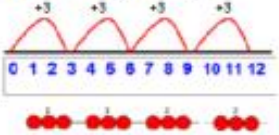
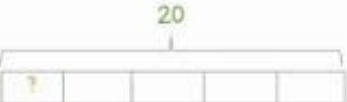
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Objective & Strategy	Concrete	Pictorial	Abstract
<p>Multiplication is commutative</p>	<p>Create arrays using counters and cubes and Numicon.</p>  <p>Pupils should understand that an array can represent different equations and that, as multiplication is commutative, the order of the multiplication does not affect the answer.</p> 	<p>Use representations of arrays to show different calculations and explore commutativity.</p> 	<p><math>12 = 3 \times 4</math></p> <p><math>12 = 4 \times 3</math></p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Use an array to write multiplication sentences and reinforce repeated addition.</p>  <p><math>5 + 5 + 5 = 15</math></p> <p><math>3 + 3 + 3 + 3 + 3 = 15</math></p> <p><math>5 \times 3 = 15</math></p> <p><math>3 \times 5 = 15</math></p> </div>
<p>Using the Inverse</p> <p><i>This should be taught alongside division, so pupils learn how they work alongside each other.</i></p>		 <p><input type="text"/> × <input type="text"/> = <input type="text"/></p> <p><input type="text"/> × <input type="text"/> = <input type="text"/></p> <p><input type="text"/> ÷ <input type="text"/> = <input type="text"/></p> <p><input type="text"/> ÷ <input type="text"/> = <input type="text"/></p>	<p><math>2 \times 4 = 8</math></p> <p><math>4 \times 2 = 8</math></p> <p><math>8 \div 2 = 4</math></p> <p><math>8 \div 4 = 2</math></p> <p><math>8 = 2 \times 4</math></p> <p><math>8 = 4 \times 2</math></p> <p><math>2 = 8 \div 4</math></p> <p><math>4 = 8 \div 2</math></p> <p>Show all 8 related fact family sentences.</p>

# Y2

# DIVISION



Objective & Strategy	Concrete	Pictorial	Abstract
Division as sharing	 <p>I have 10 cubes, can you share them equally in 2 groups?</p>	<p>Children use pictures or shapes to share quantities.</p>  <p><math>8 \div 2 = 4</math></p> <p>Children use bar modelling to show and support understanding.</p>  <p><math>12 \div 4 = 3</math></p>	$12 \div 3 = 4$
Division as grouping	<p>Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding.</p>  	<p>Use number lines for grouping</p>  <p><math>12 \div 3 = 4</math></p> <p>Think of the bar as a whole. Split it into the number of groups you are dividing by and work out how many would be within each group.</p>  <p><math>20 \div 5 = ?</math> <math>5 \times ? = 20</math></p>	$28 \div 7 = 4$  Divide 28 into 7 groups. How many are in each group?