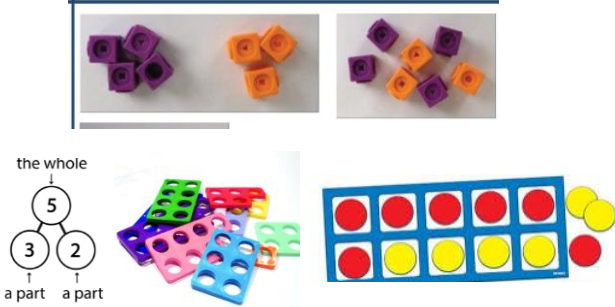
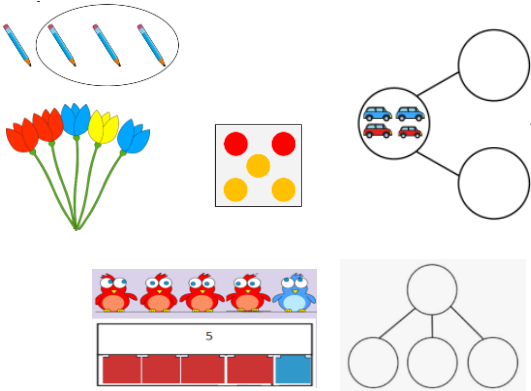
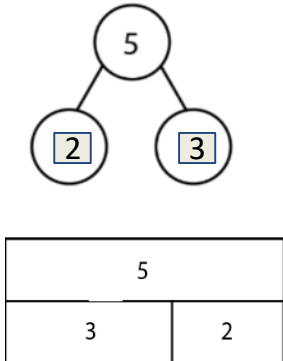
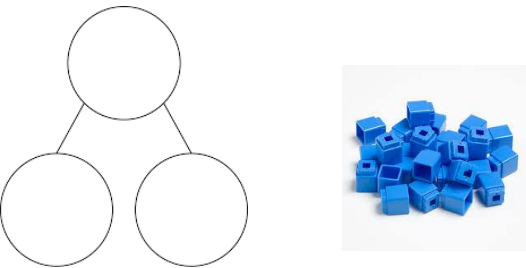
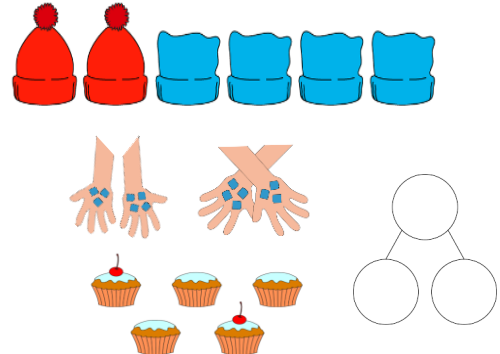
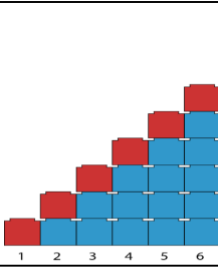
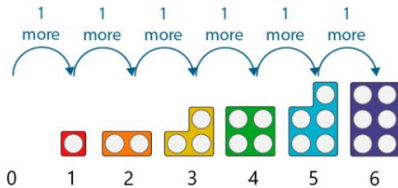
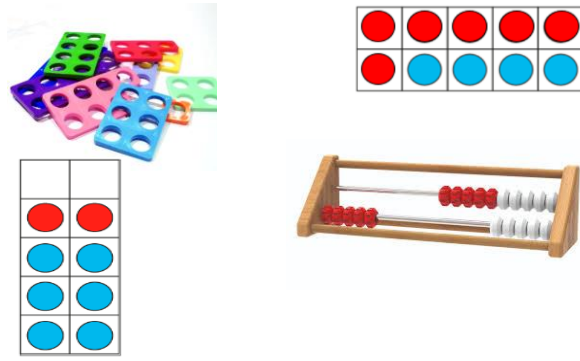
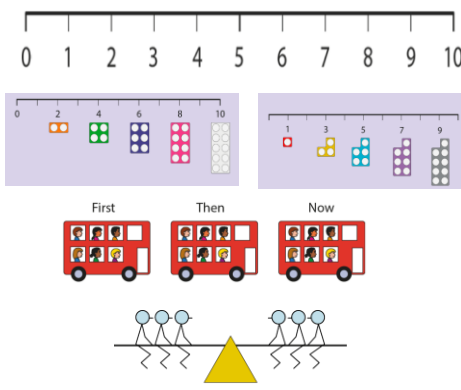

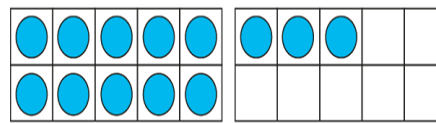
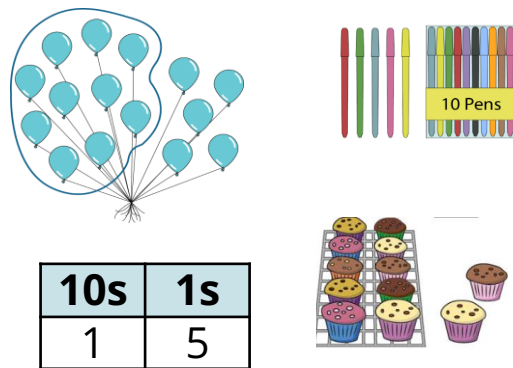
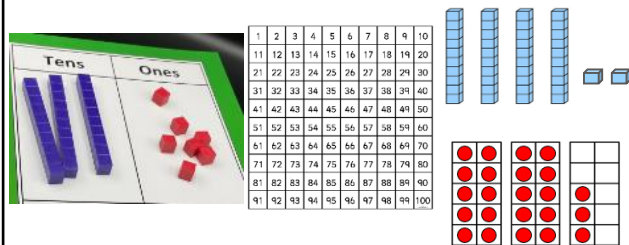
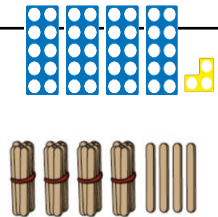


Y1 Addition

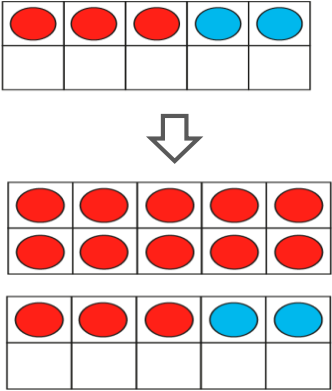
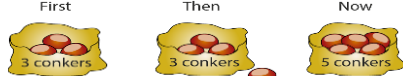

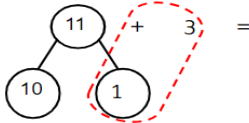

Objective and Strategy	Concrete	Pictorial	Abstract
<p>Combining two parts to make a whole : part- whole model, bar model, tens frames.number stories.</p> <p>Working systematically/ Subitising of tens frames.</p> <p>Progressing into 3 parts.</p>	<p>Using part, whole models and 10s frames and bar models.</p> 		
<p>Addition is commutative. Writing equations.</p>			<p>Introduced plus (+)</p> $4 + 2$ $2 + 4$ <p>Then introduced to equal (=)</p> $4 + 2 = 6$ $2 + 4 = 6$ $6 = 2 + 4$ $6 = 4 + 2$ <p>Missing parts $2 + \quad = 6$</p>
<p>One more than a number</p>	<p>Using cubes to add one more block each time.</p> 		<div> <p>One more than 3 is <input type="text"/></p> <p>One more than 5 is <input type="text"/></p> <p>_____ is 1 less than _____</p> <p>_____ is 1 more than _____</p> </div>



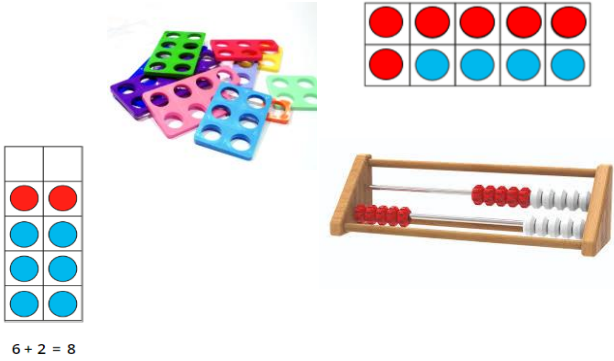
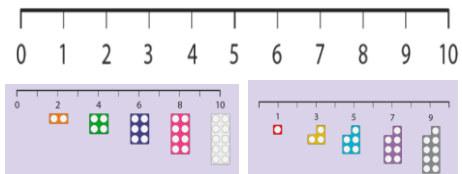

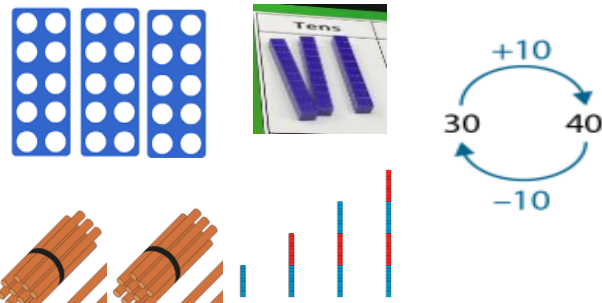
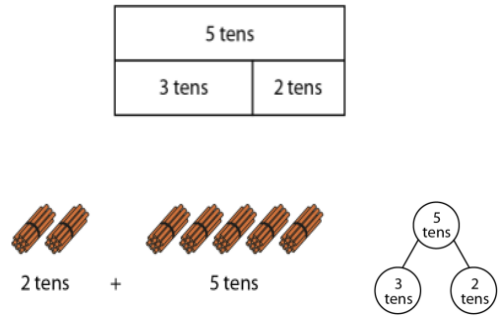
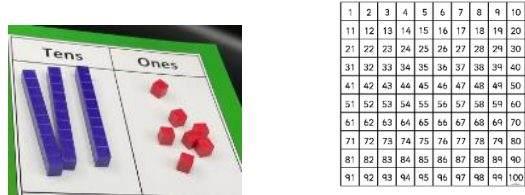
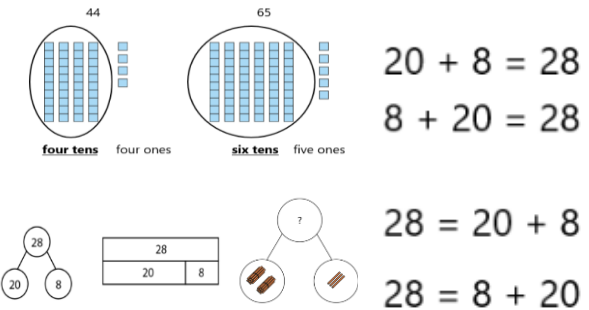
Y1 Addition

Objective and Strategy	Concrete	Pictorial	Abstract																																																																																																																																																
Number bonds to 5 Number bonds to 10 Adding 2/ 3 Doubles + ner doubles	 6 + 2 = 8		Aiming for fluent recall. <table border="1" data-bbox="1842 318 2224 591"><tr><th>+</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th></tr><tr><th>0</th><td>0+0</td><td>0+1</td><td>0+2</td><td>0+3</td><td>0+4</td><td>0+5</td><td>0+6</td><td>0+7</td><td>0+8</td><td>0+9</td><td>0+10</td></tr><tr><th>1</th><td>1+0</td><td>1+1</td><td>1+2</td><td>1+3</td><td>1+4</td><td>1+5</td><td>1+6</td><td>1+7</td><td>1+8</td><td>1+9</td><td>1+10</td></tr><tr><th>2</th><td>2+0</td><td>2+1</td><td>2+2</td><td>2+3</td><td>2+4</td><td>2+5</td><td>2+6</td><td>2+7</td><td>2+8</td><td>2+9</td><td>2+10</td></tr><tr><th>3</th><td>3+0</td><td>3+1</td><td>3+2</td><td>3+3</td><td>3+4</td><td>3+5</td><td>3+6</td><td>3+7</td><td>3+8</td><td>3+9</td><td>3+10</td></tr><tr><th>4</th><td>4+0</td><td>4+1</td><td>4+2</td><td>4+3</td><td>4+4</td><td>4+5</td><td>4+6</td><td>4+7</td><td>4+8</td><td>4+9</td><td>4+10</td></tr><tr><th>5</th><td>5+0</td><td>5+1</td><td>5+2</td><td>5+3</td><td>5+4</td><td>5+5</td><td>5+6</td><td>5+7</td><td>5+8</td><td>5+9</td><td>5+10</td></tr><tr><th>6</th><td>6+0</td><td>6+1</td><td>6+2</td><td>6+3</td><td>6+4</td><td>6+5</td><td>6+6</td><td>6+7</td><td>6+8</td><td>6+9</td><td>6+10</td></tr><tr><th>7</th><td>7+0</td><td>7+1</td><td>7+2</td><td>7+3</td><td>7+4</td><td>7+5</td><td>7+6</td><td>7+7</td><td>7+8</td><td>7+9</td><td>7+10</td></tr><tr><th>8</th><td>8+0</td><td>8+1</td><td>8+2</td><td>8+3</td><td>8+4</td><td>8+5</td><td>8+6</td><td>8+7</td><td>8+8</td><td>8+9</td><td>8+10</td></tr><tr><th>9</th><td>9+0</td><td>9+1</td><td>9+2</td><td>9+3</td><td>9+4</td><td>9+5</td><td>9+6</td><td>9+7</td><td>9+8</td><td>9+9</td><td>9+10</td></tr><tr><th>10</th><td>10+0</td><td>10+1</td><td>10+2</td><td>10+3</td><td>10+4</td><td>10+5</td><td>10+6</td><td>10+7</td><td>10+8</td><td>10+9</td><td>10+10</td></tr></table>	+	0	1	2	3	4	5	6	7	8	9	10	0	0+0	0+1	0+2	0+3	0+4	0+5	0+6	0+7	0+8	0+9	0+10	1	1+0	1+1	1+2	1+3	1+4	1+5	1+6	1+7	1+8	1+9	1+10	2	2+0	2+1	2+2	2+3	2+4	2+5	2+6	2+7	2+8	2+9	2+10	3	3+0	3+1	3+2	3+3	3+4	3+5	3+6	3+7	3+8	3+9	3+10	4	4+0	4+1	4+2	4+3	4+4	4+5	4+6	4+7	4+8	4+9	4+10	5	5+0	5+1	5+2	5+3	5+4	5+5	5+6	5+7	5+8	5+9	5+10	6	6+0	6+1	6+2	6+3	6+4	6+5	6+6	6+7	6+8	6+9	6+10	7	7+0	7+1	7+2	7+3	7+4	7+5	7+6	7+7	7+8	7+9	7+10	8	8+0	8+1	8+2	8+3	8+4	8+5	8+6	8+7	8+8	8+9	8+10	9	9+0	9+1	9+2	9+3	9+4	9+5	9+6	9+7	9+8	9+9	9+10	10	10+0	10+1	10+2	10+3	10+4	10+5	10+6	10+7	10+8	10+9	10+10
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Ten and more. Partitioning teen numbers into one ten and more.	 	 <table border="1" data-bbox="1240 905 1452 1012"><tr><th>10s</th><th>1s</th></tr><tr><td>1</td><td>5</td></tr></table>	10s	1s	1	5	<div><div>10 + 4 = <input type="text"/></div><div><input type="text"/> = 10 + 4</div></div> <div><div>4 + 10 = <input type="text"/></div><div><input type="text"/> = 4 + 10</div></div> <div><div>1. 10 + 3 = <input type="text"/></div><div>2. 10 + <input type="text"/> = 17</div><div>3. <input type="text"/> + 5 = 15</div></div>																																																																																																																																												
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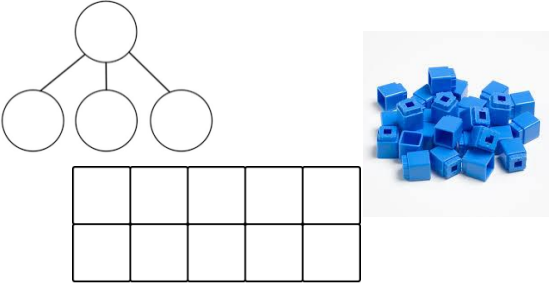
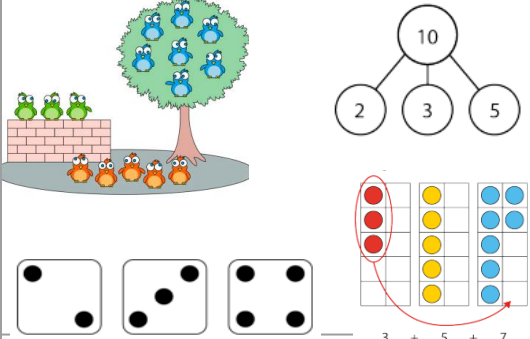
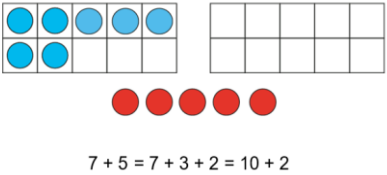
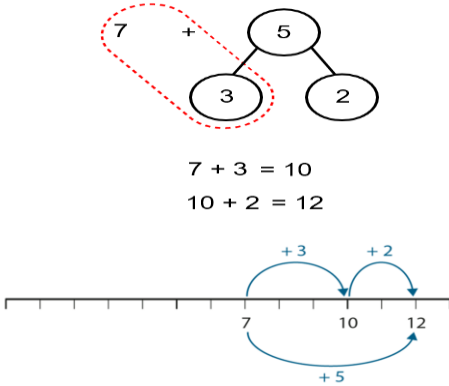
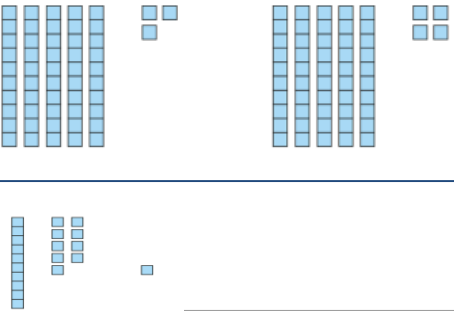
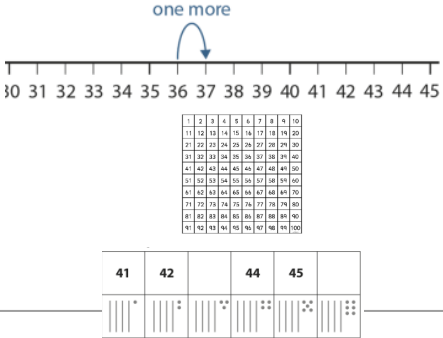
Y1 Addition

Objective and Strategy	Concrete	Pictorial	Abstract
Using additive facts to support addition within 20.		<p>First Then Now</p>  <p>If I know $3 + 2 = 5$</p> <p>First Then Now</p>  <p>Then I know $13 + 2 = 15$</p> 	$2 + 6 = \square$ <p style="text-align: center;">↓</p> $12 + 6 = \square$  $\square + \square = \square$ $\square + \square = \square$

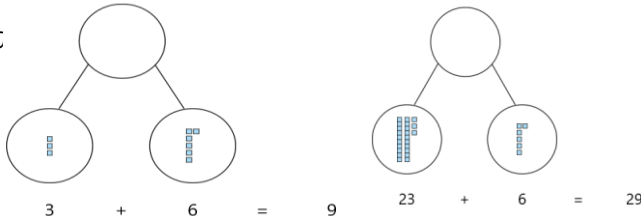
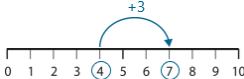
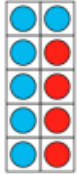
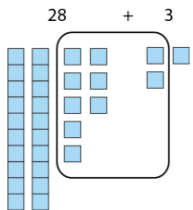
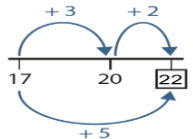
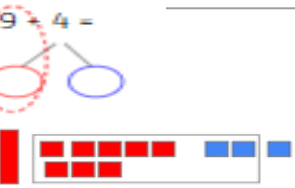
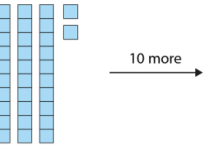
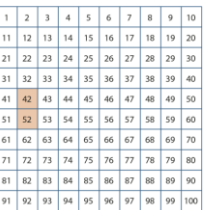
Y2 Addition

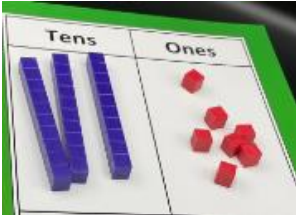
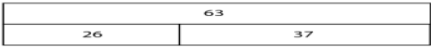
Objective and Strategy	Concrete	Pictorial	Abstract
<p>Fluency with basic additive facts within 10. (including $10 + __$)</p> <p>Doubles Adding 1 Adding 2 Adding 3</p>	 <p>$6 + 2 = 8$</p>		
<p>Adding 10 to a multiple of ten.</p> <p>Using known facts to add multiples of 10.</p>			<p>10 less 10 more</p> <p><input type="text"/> ← 50 → <input type="text"/></p> <p>$20 + 10 = \square$ $\square + 10 = 30$</p> <p>$20 + 40 = \square$ $\square + 30 = 90$</p>
<p>Partition a two digit number into tens and ones.</p>		 <p>$20 + 8 = 28$ $8 + 20 = 28$</p> <p>$28 = 20 + 8$ $28 = 8 + 20$</p>	

Y2 Addition


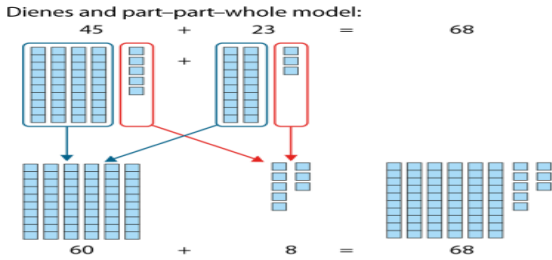
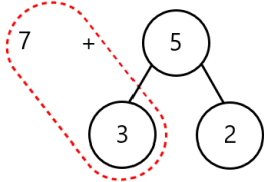
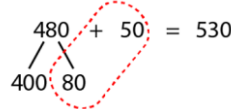
Objective and strategy	Concrete	Pictorial	Abstract
<p>Adding 3 addends</p> <p>Including three addends that make 10</p>	<p>Practically making first then now stories.</p> 		$3 + 5 + 2 = 10$ $5 + 2 + 3 = 10$ $2 + 4 + 3 = \square + 3 = \square$ $7 + 5 = 7 + 3 + \square$ $8 + 5 = 8 + 2 + \square$ $6 + 5 = 6 + \square + \square$ $9 + 5 = 9 + \square + \square$
<p>Add two numbers that bridge through 10.</p>	<p>Tens frames to subitise making 10</p> 		$7 + 5 = 7 + 3 + \square$ $8 + 5 = 8 + 2 + \square$ $6 + 5 = 6 + \square + \square$ $9 + 5 = 9 + \square + \square$
<p>Adding 1 to a two-digit number within 100</p> <p>This includes crossing the tens boundary.</p>			$53 + 1 = 54$ $35 = \square + 1$ $35 = 1 + \square$ <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> one less ← </div> <div style="text-align: center;"> 99 </div> <div style="text-align: center;"> → one more </div> </div>

Y2 Addition

Objective and strategy	Concrete	Pictorial	Abstract
Use number facts to add a single-digit number to a two-digit number	<p>If I know, Then I know... Part, whole models + Dienes</p> <p>Making to spot the pattern of ac ones stays the same, the tens change.</p> 		<p><i>'I know that ___ plus ___ is equal to ___...'</i> (single-digit fact) <i>'...so ___ plus ___ is equal to ___.'</i> (related two-digit plus single-digit calculation)</p> <p>$3 + 6 = 9$</p> <p>$13 + 6 = 19$ <input type="text"/></p> <p>$23 + 6 = 29$</p>
knowledge of 'make ten' to add a one-digit number to a two-digit number	<p>Dienes/ tens frames available</p> <p>making 10/a multiple of 10</p>  <p>$6 + 4 = 10$</p>  <p>$28 + 3 = 31$</p>	<p>Making thirty:</p>  <p>$18 + 3 = 21$</p>  <p>$18 + 4 = 22$</p>	<p>$8 + 6 = \square$</p> <p>$18 + 6 = \square$</p> <p>$48 + 6 = \square$</p> <p>$8 + 6 = 14$</p> <p>$18 + 6 = 24$</p> <p>$48 + 6 = 54$</p> <p>$7 + 6 = 13$</p> <p>$27 + 6 = \square$</p> <p>$47 + \square = 53$</p> <p>$\square + 6 = 73$</p>
Adding 10 <u>then</u> a multiple of 10 to any two-digit number	 <p>$32 + 10 = 42$</p> <p><i>'We had three tens and two ones. Ten more gives us four tens and two ones.'</i></p>	 <p>$42 + 10 = 52$</p>	<p>10 less 10 more</p> <p>$\square \leftarrow 34 \rightarrow \square$</p> <p>10 less 10 more</p> <p>$\square \leftarrow 67 \rightarrow \square$</p> <p>$34 - 20 = \square$</p> <p>$44 - 20 = \square$</p> <p>$54 - 20 = \square$</p> <p>$23 + 10 = \square$</p> <p>$33 + \square = 43$</p> <p>$\square + 10 = 53$</p> <p>$\square = 98 - 50$</p> <p>$\square = 98 - 60$</p> <p>$\square = 98 - 70$</p>

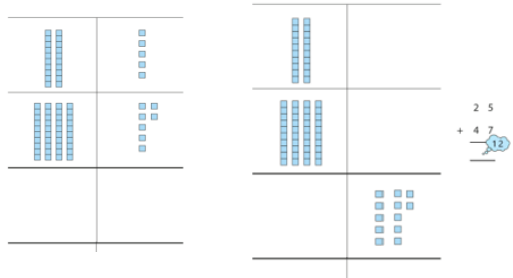
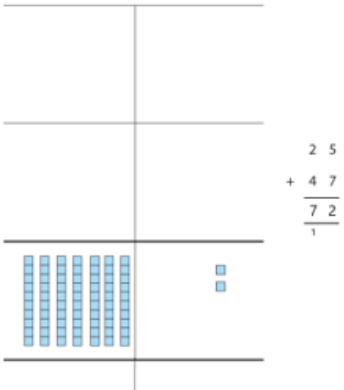
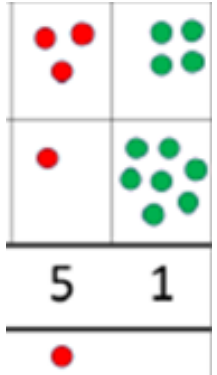
Objective and strategy	Concrete	Pictorial	Abstract
<p>Pupils add a two-digit number to a two-digit number</p> <p>not crossing 10 then crossing 10</p>	<p>using dienes practically to make numbers</p> 	<p>Dienes and part-part-whole model:</p> $ \begin{array}{c} 45 + 23 = 68 \\ \begin{array}{ c c } \hline 40 & 5 \\ \hline \end{array} + \begin{array}{ c c } \hline 20 & 3 \\ \hline \end{array} \\ \downarrow \quad \quad \downarrow \\ \begin{array}{ c c c } \hline 60 & & 8 \\ \hline \end{array} + \begin{array}{ c c } \hline 8 & \\ \hline \end{array} = \begin{array}{ c c c c c c } \hline & & & & & 68 \\ \hline \end{array} \end{array} $ <p>Dienes and part-part-whole model:</p> $ \begin{array}{c} 26 + 37 = 63 \\ \begin{array}{ c c } \hline 20 & 6 \\ \hline \end{array} + \begin{array}{ c c } \hline 30 & 7 \\ \hline \end{array} \\ \downarrow \quad \quad \downarrow \\ \begin{array}{ c c c } \hline 50 & & 13 \\ \hline \end{array} + \begin{array}{ c c } \hline 13 & \\ \hline \end{array} = \begin{array}{ c c c c c c } \hline & & & & & 63 \\ \hline \end{array} \end{array} $ 	<p>partitioning method</p> $ \begin{array}{c} 45 + 23 \\ \begin{array}{ c c } \hline 40 & 5 \\ \hline \end{array} + \begin{array}{ c c } \hline 20 & 3 \\ \hline \end{array} \\ 40 + 20 = 60 \\ 5 + 3 = 8 \\ 60 + 8 = 68 \end{array} $ $ \begin{array}{c} 26 + 37 \\ \begin{array}{ c c } \hline 20 & 6 \\ \hline \end{array} + \begin{array}{ c c } \hline 30 & 7 \\ \hline \end{array} \\ 20 + 30 = 50 \\ 6 + 7 = 13 \\ 50 + 13 = 63 \end{array} $

Y2 Addition

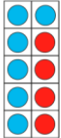
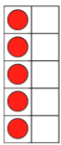
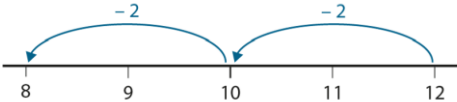
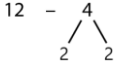
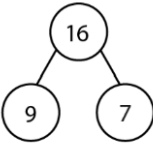
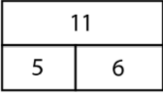
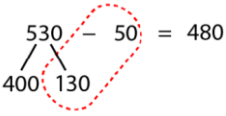
Objective and Strategy	Concrete	Pictorial	Abstract
Pupils add two numbers bridging across 10	Recap Year 2 	<p>Dienes and part-part-whole model:</p>   $7 + 3 = 10$ $10 + 2 = 12$  $480 + 50 = 530$	Children write the calculation and use known strategies to solve it mentally. $7 + 5 = 12$

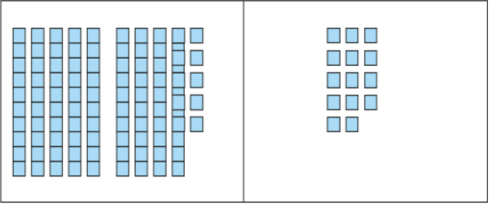
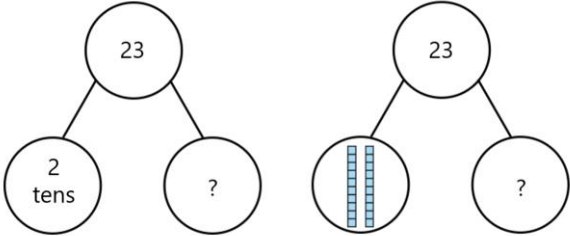

Y3 Addition

Y3 Addition

Objective and strategy	Concrete	Pictorial	Abstract
Pupils use column addition to add two 2 digit numbers	<p>Children use dienes to physically add two 2 digit numbers. $25 + 47 = 72$ First we add the ones. $5 + 7 = 12$</p>  <p>Then we add the tens.</p> 	<p>Children draw a representation.</p>  <p>Children can draw a representation of the grid to further support their understanding, carrying the ten <u>underneath</u> the line</p>	<p>Start by portioning to show the exchange.</p> $\begin{array}{r} 20 \\ 40 \\ 60 \end{array} + \begin{array}{r} 5 \\ 8 \\ 13 \end{array} = 73$ <p>Move onto the formal method.</p> $\begin{array}{r} 536 \\ + 85 \\ \hline 621 \\ 11 \end{array}$
Repeat the method for adding two 2 digit numbers to add 23 digit numbers.	<p>2 tens plus 4 tens is 6 tens. We also need to add 1 ten from the regrouping. There are 7 tens altogether.</p>		

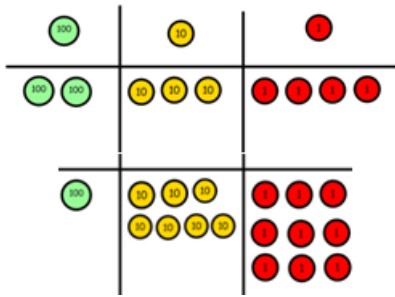
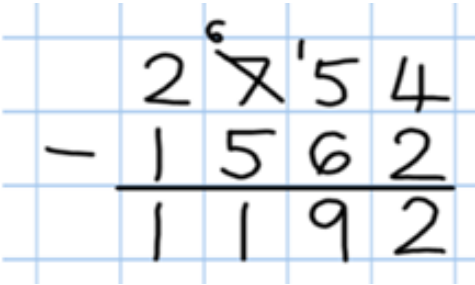
Y3 Subtraction

Objective and Strategy	Concrete	Pictorial	Abstract
Pupils subtract numbers that bridge 10	<p>Children place the numbers on a tens frame and use this to physically subtract by removing the counters.</p>  $\begin{array}{r} 15 - 9 \\ 5 \quad 4 \end{array}$  $15 - 5 = 10$ $10 - 4 = 6$ $15 - 9 = 6$ <p>Children use a number line to subtract.</p> 	<p>Children partition the number and subtract until they reach 10 and then subtract the remaining amount.</p>  $\begin{array}{r} 12 - 4 \\ 2 \quad 2 \end{array}$ $12 - 2 = 10$ $10 - 2 = 8$ $12 - 4 = 8$ <p>Children represent the numbers using bar models and part whole models.</p>  	<p>Children write the calculation and subtract mentally using known strategies.</p> $12 - 4$
Pupils subtract multiples of 10 bridging 100		 $530 - 50 = 480$	

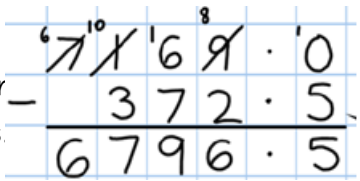
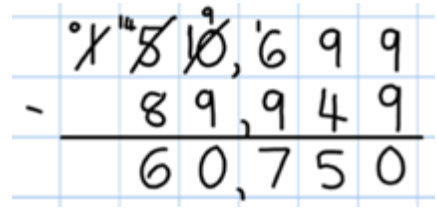
Objective and Strategy	Concrete	Pictorial	Abstract
Pupils use column subtraction with exchanging from tens to ones.			
Repeat the method subtracting with up to 3 digits.	See NCTEM		

Y3 Subtraction

Y4 Subtraction

Objective and Strategy	Concrete	Pictorial	Abstract
Subtract with up to 4 digits. using column subtraction	<p>234 - 179</p>  <p>Model process of exchange using base ten and place value counters.</p>	Children to draw place value counters and show their exchange	

Y5 Subtraction

Objective and strategy	Concrete	Pictorial	Abstract
Subtract with at least 4 digits, including money and measures	As Y4	As Y4	<p>Use zeros for placeholders</p>  

Y6 Subtraction

Objective and strategy	Concrete	Pictorial	Abstract
Subtract with increasingly large and more complex numbers and decimal values using formal methods.			