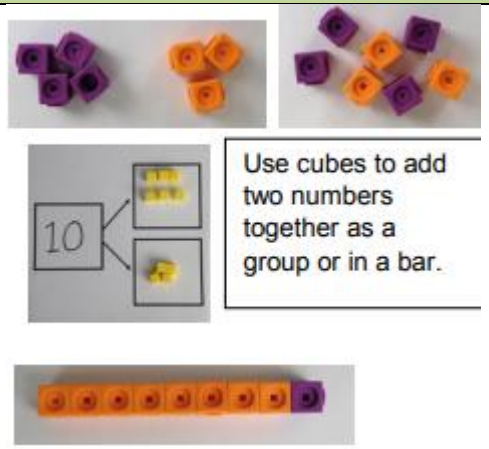
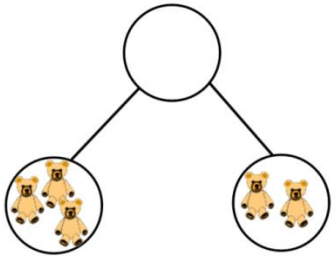
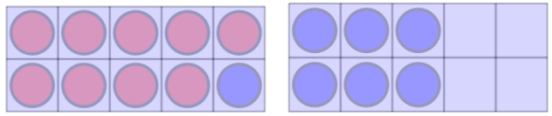
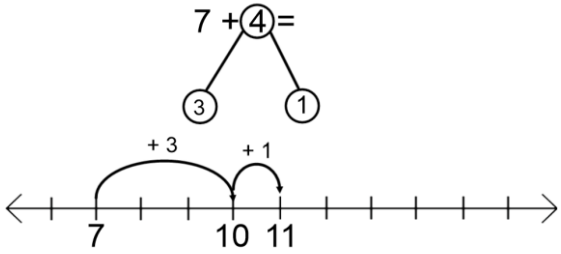
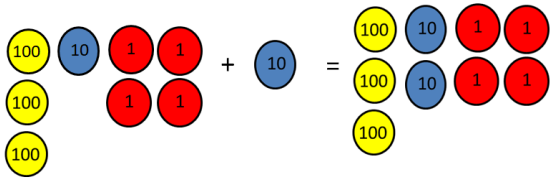
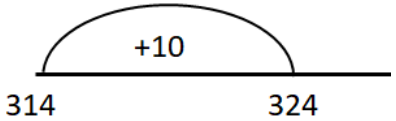
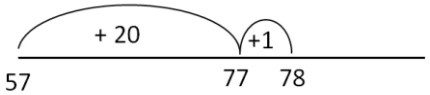
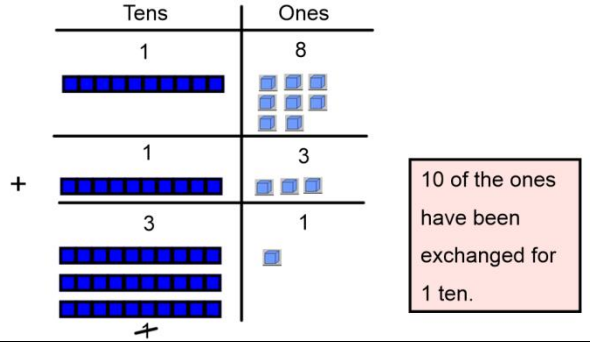
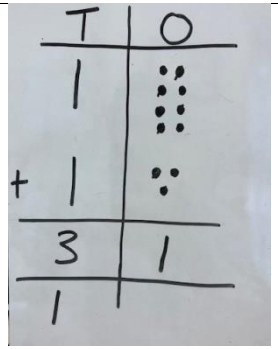
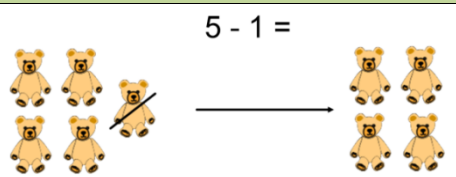
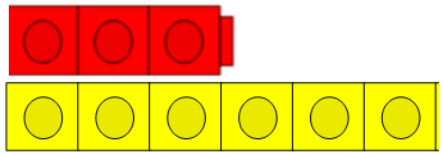
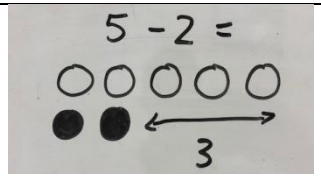
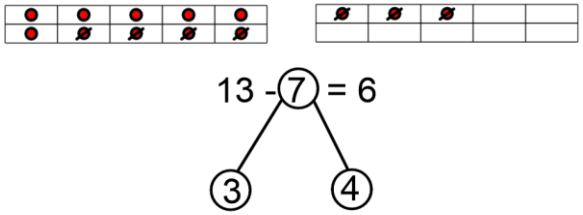
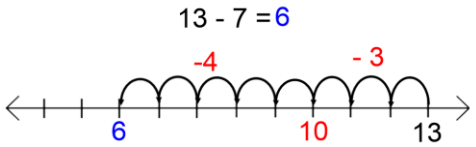
Bretherton Endowed CE Primary School Calculation Policy (CPA)

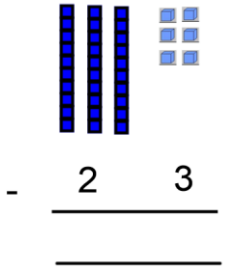
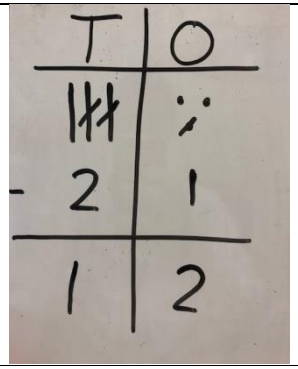
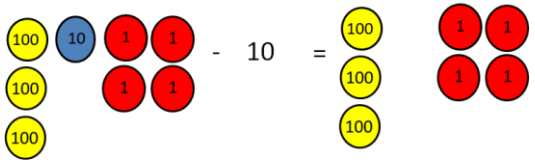
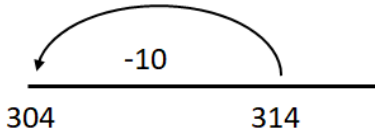
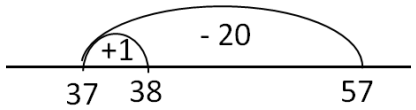
Addition

Concept	Concrete	Pictorial	Abstract
Combining two parts to make a whole		 **Sentence stem** In one part there are 3 bears. In another part there are 2 bears. The whole is 5 bears.	3 + 2 = 5 If a part is 3 and another part is 2, the whole is 5.
Bridging 10	<u>Use of a tens frame</u> 9 + 7  I split 7 into 1 and 6 9 + 1 = 10 10 + 6 = 16	<u>Use of a number line</u> 	7 + 4 = 11 I partition 4 to 3 and 1. 7 + 3 = 10 10 + 1 = 11

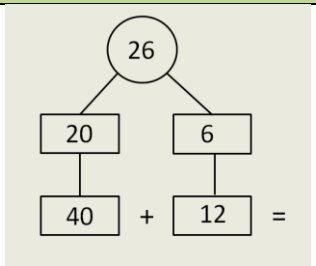
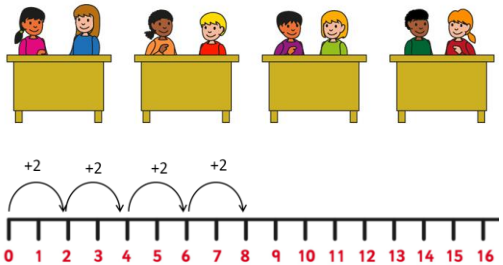
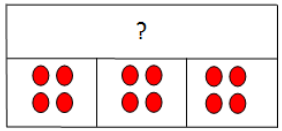
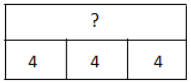
Adding 10/100/1000 to a given number		<u>Use of a number line</u>  314 + 10 = 324	314 + 10 = 324 I add 1 ten to 314.
Adding near multiples of 10		<u>Use of a Number Line</u> 57 + 21 =  	2536 + 199 = 2536 + 200 – 1= 2735
Adding using a formal method.	 	 	67 + 81 148 1

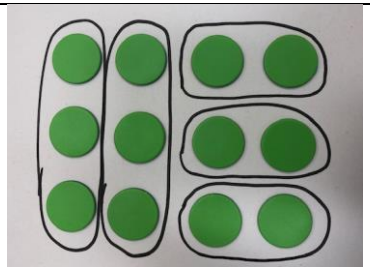
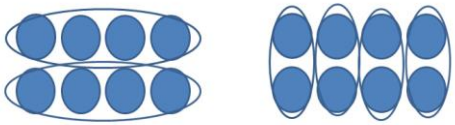
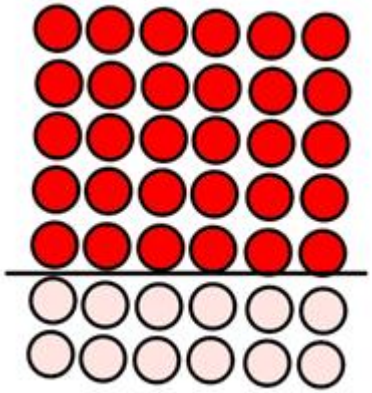
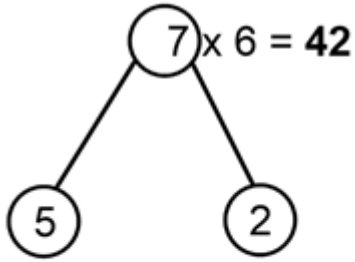
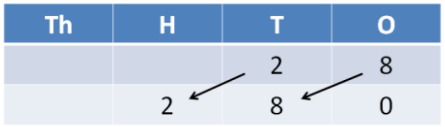
Subtraction

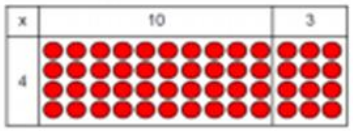
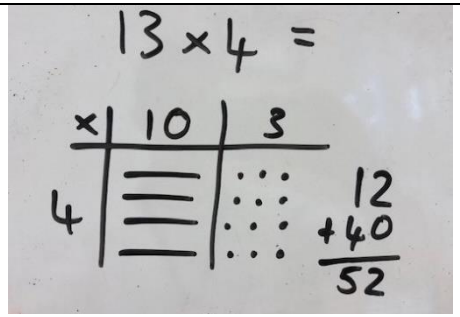
Concept	Concrete	Pictorial	Abstract
To understand takeaway			5- 1 = 4
To understand difference			The difference between 8 and 3 is 5
To be able to bridge 10			13 – 7 I partition 7 into 3 and 4. 13 – 3 = 10 10 – 4 = 6

Column Subtraction			4 3 5 - 2 1 4 2 2 1
Subtracting Multiples of 10			627 – 10 = 617
Subtracting near multiples of 10.		57 - 19 = 	230 - 99 = 230 - 100 = 130 130 + 1 = 131

Multiplication

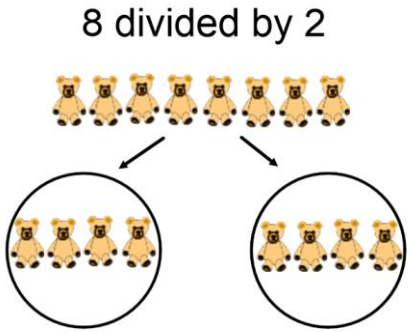
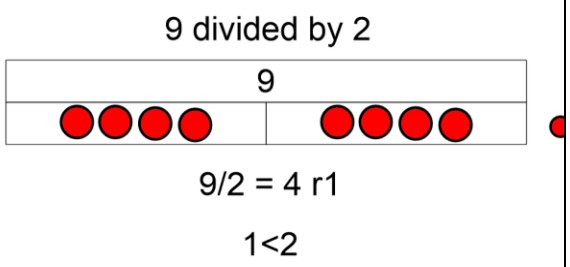
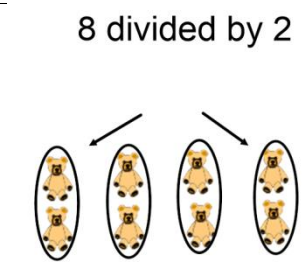
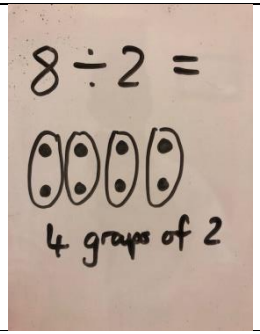
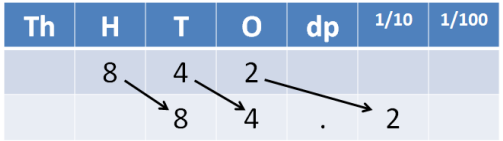
Concept	Concrete	Pictorial	Abstract
To double a number.	Use practical activities to show how to double a number. double 4 is 8 4 × 2 = 8		2 x 26 = 26 + 26 = 52
To count in equal steps.		   **Sentence Stem** 3 groups of 4 counters	2, 4, 6, 8, ___

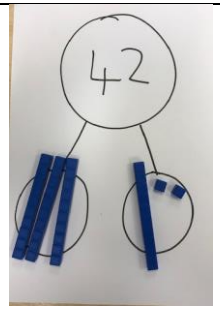
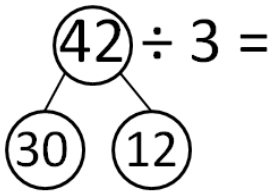
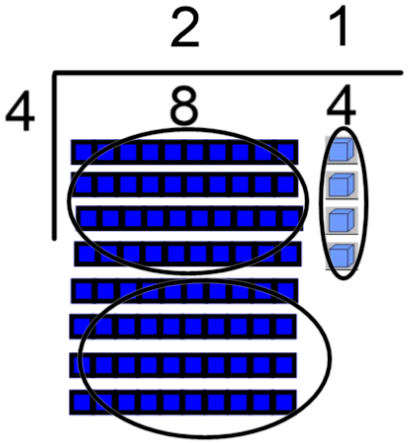
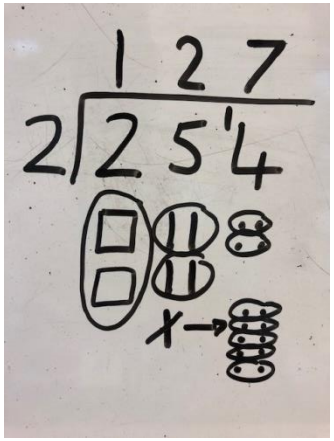
		4 + 4 + 4 3 x 4	
To understand commutativity .		2 x 4 = 4 x 2 2 groups of 4 = 4 groups of 2 	**4 x 2 = 2 x 4**
To understand distributive Law	7 x 6 can be shown as 5 x 6 + 2 x 6 	 7 x 6 = **42** 5 2 5 x 6 = 30 2 x 6 = 12 30 + 12 = **42**	**7 x 6 = 5 x 6 + 2 x 6**
To multiply a number by 10/100/1000		 Th H T O 2 8 2 8 0	28 x 10 = 280

		<table><tr><th>Th</th><th>H</th><th>T</th><th>O</th></tr><tr><td></td><td></td><td>2</td><td>8</td></tr><tr><td>2</td><td>8</td><td>0</td><td>0</td></tr></table>	
To develop the use of a grid for multiplying.	 4 rows of 10 4 rows of 3		<table><tr><td></td><td>10</td><td>3</td></tr><tr><td>4</td><td>(4 x 10) 40</td><td>(4 x 3) 12</td></tr></table> 40 + 12 = 52
To multiply by a single digit number.			<u>Long multiplication</u> 1 3 x 4 1 2 (4 x 3) 4 0 (4 x 10) 5 2 <u>Short Multiplication</u>

			1 4 x 3 4 2 +

Division

Concept	Concrete	Pictorial	Abstract
To understand division as sharing equally			8 shared equally into 2 groups is 4 in each group
To understand division as grouping			8 part into groups of 2 is 4 groups
To divide a number by 10.			600 ÷ 10 = 60

To understand distributive law		 30 ÷ 3 = 10 12 ÷ 3 = 4 42 ÷ 3 = 14	42 ÷ 3 = 42 Because 30 ÷ 3 = 10 12 ÷ 3 = 4
To understand short division to divide by a single digit number.			2 1 4 8 4 **Sentence Stem** There are 2 groups of 4 tens. There is 1 group of 4 ones

Dividing an integer by a 2 digit number.			$2856 \div 14 =$ $\begin{array}{r} 204 \\ 14\overline{)2856} \\ -2800 \\ \hline 56 \\ -56 \\ \hline 0 \end{array}$ (200 x) (4 x) 1 x 14 = 14 2 x 14 = 28 3 x 14 = 42 4 x 14 = 56 5 x 14 = 70