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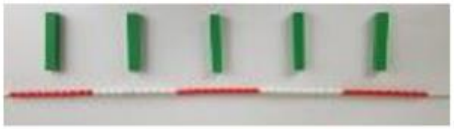
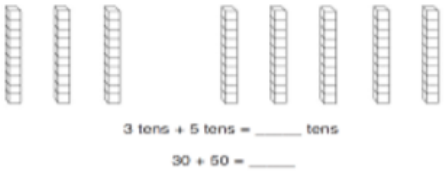
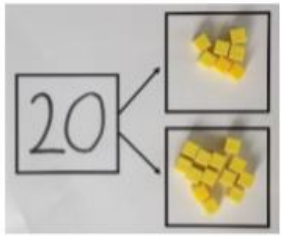
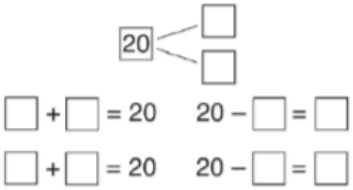
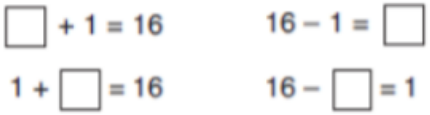
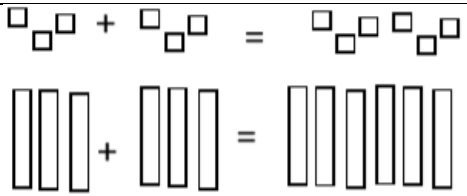
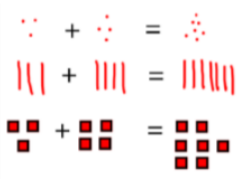
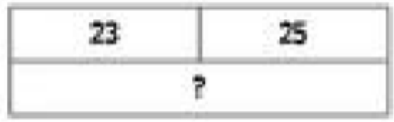
Addition Year 2

Objective and Strategy	Concrete	Pictorial	Abstract
Adding multiples of 10	50= 30 = 20  Model using bead strings, base ten or Numicon	 Use representations for base 10	20 + 30 = 50 70 = 50 + 20 40 + ___ = 60
Use known number facts *Part – part - whole*	Children explore different ways of making 20 		
Using known facts		Children draw representations of H, T, O 	3 + 4 = 7 …….leads to 30 + 40 = 70 ……leads to 300 +400 = 700
Bar model introduction	 3 + 4 = 7	 7 + 3 = 10	 23 + 25 = 48

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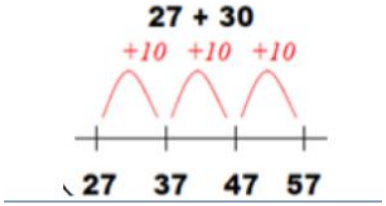
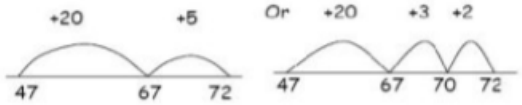
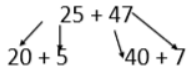
Add a 2 digit and tens	 25 + 10 = 35 Explore that the ones digit does not change		27 + 10 = 37 27 + 20 = 47 27 + ___ = 57
Add two 2 digits	 Model using dienes , place value counters and numicon	 Use number line and bridge ten using part whole if necessary.	 20 + 40 = 60 5+ 7 =12 60 + 12 = 72

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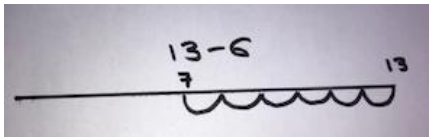
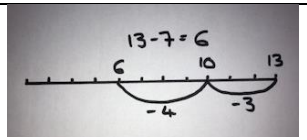
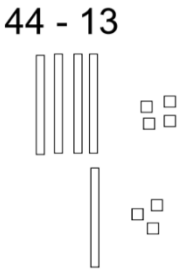
Subtraction Year 2

Objective and Strategy	Concrete	Pictorial	Abstract
Use of a number line to count backwards		Year 2 – use of a blank number line to build on from work in Year 1 	
Make 10	14 – 5 = 14 take away the 4 to make 10. The take away the other 1 = 9	 13 minus 3 to make 10. Then subtract the remaining 4	16 – 8 = 8 How many do we take off first to get to 10? How many are left to take off?
Partitioning without regrouping	Use Numicon or base ten to show how to partition and subtract without regrouping.  Children make both numbers and then physically remove the 13 from the 44.	 43 – 21 Children cross off the number after drawing base ten.	43 – 21 40 + 3 - 20 + 1 20 + 2 = 22

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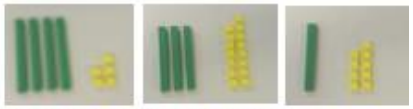
Partitioning with regrouping	45-26  1) Start by partitioning 45 2) Exchange one ten for ten more ones 3) Subtract the ones, then the tens.	Represent pictorially – children cross off or draw BaseTen/Numicon	67 -19 $60 + {}^{1}7$ $10 + 9$ $^{40}\cancel{5}0 + 8 = 48$ Those confident will move onto the following; $^{5}\cancel{6}{}^{1}7$ $- \ 2\ 8$ $\ \ 3\ 9$

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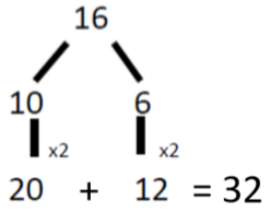
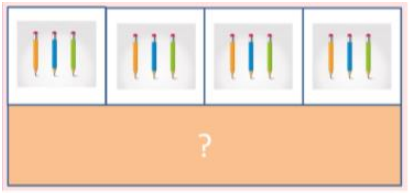
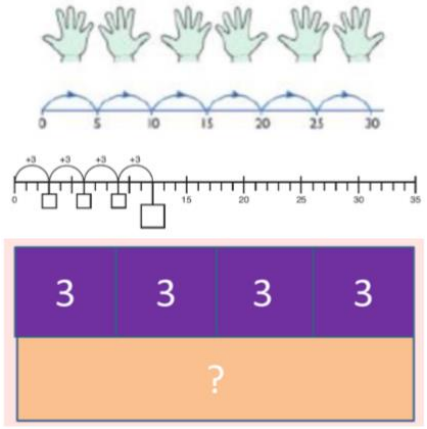
Multiplication Year 2			
Objective and Strategy	**Concrete**	**Pictorial**	**Abstract**
Doubling	Model doubling using place value counters, base ten and numicon	Draw pictures and representations to show how to double numbers.	Partition a number and then double each part before recombining it back together. 
Counting in multiples of 2, 3, 4, 5, and 10 (Repeated addition)	Use numicon to count in groups. Children may use fingers to count along or cues. Link to bar modelling.  	Number lines, counting sticks and bar models to show representations of counting in multiples.  	Count in multiples of a number aloud. *Be aware of only using chants / songs as children need to know the times tables fluently* Write sequences with multiples of numbers. 0, 2, 4, 6, 8, 10 0, 3, 6, 9, 12, 15 0, 5, 10, 15, 20, 25 4 x 3 = _____

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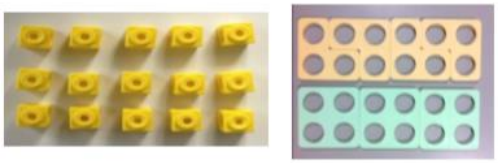
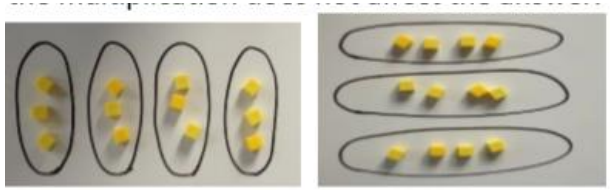
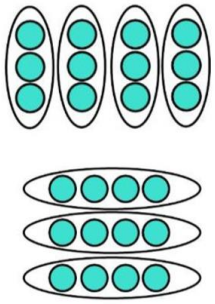
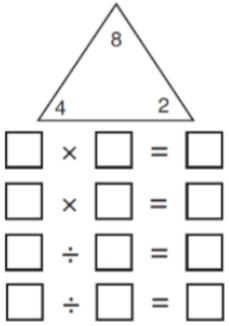
Multiplication is commutative	Create arrays using counters, cubes and Numicon  Children need to understand multiplication can be done in any order and that the answer is not affected. 	Children draw the arrays to demonstrate their understanding. 	12 = 3 x 4 12 = 4 x 3 Use an array to write multiplication sentences and reinforce repeated addition. 5 + 5 + 5 = 15 3 + 3 + 3 + 3 + 3 = 15 5 x 3 = 15 3 x 5 = 15
Using the inverse **(Taught alongside division)**	Create arrays using counters, cubes and Numicon and match to the calculations verbally. 2 x 4 = 8 4 x 2 = 8 8 shared between 2 = 4 8 shared between 4 is 2	Children draw triangles to show fact families using understanding that is multiplication is commutative and links to division. 	2 x 4 = 8 4 x 2 = 8 8 ÷ 2 = 4 8 ÷ 4 = 2 8 = 2 x 4 8 = 4 x 2 4 = 8 ÷ 2 2 = 8 ÷ 4 Show all related multiplication and division facts in fact family sentences.

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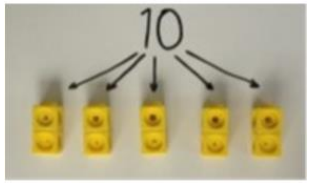
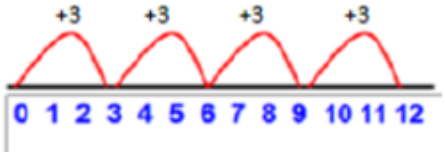
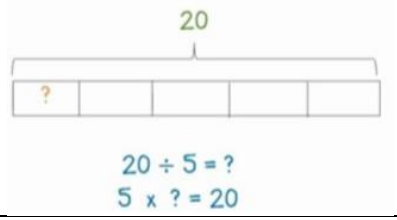
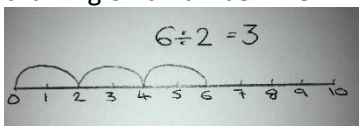
Division Year 2			
Objective and Strategy	**Concrete**	**Pictorial**	**Abstract**
Division as grouping	Divide quantities into equal groups using cubes, counters and objects to support understanding.  	Use number lines for grouping.  12 ÷ 3 = 4 Think of the bar as a whole. Split it into the number of groups you are dividing by and work out how many there would be in each group either by drawing in the bar or knowledge of tables. Eg  	28 ÷ 7 = 4 Divide 28 into 7 groups. How many are in each group? How many groups of 6 are in 24?
Repeated subtraction	Children repeatedly subtract in groups of a number. Eg 6 ÷ 2 = 3 	Children represent this repeated subtraction by drawing on a number line.  	Blank number line

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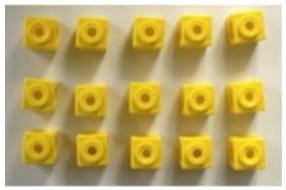
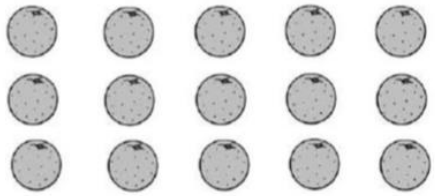
Division with arrays	Link division to multiplication by creating an array and thinking about the number sentences that can be created.  Verbally explain sentences 15 ÷ 3 = 5 15 ÷ 5 = 3 5 x 3 = 15 3 x 5 = 15	Children draw an array and use lines to split the array in to groups to make multiplication and division sentences. 	Find the inverse of multiplication and division sentences by creating eight linking number sentences. 7 x 4 = 28 4 x 7 = 28 28 ÷ 7 = 4 28 ÷ 4 = 7 28 = 7 x 4 28 = 4 x 7 4 = 28 ÷ 7 7 = 28 ÷ 4