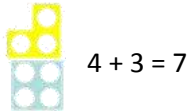
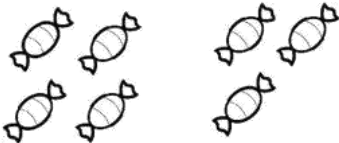
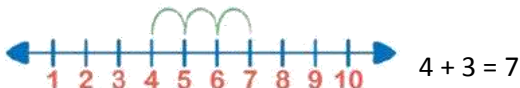
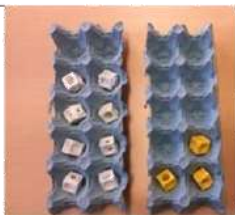
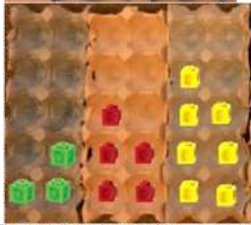
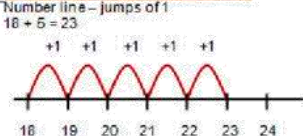
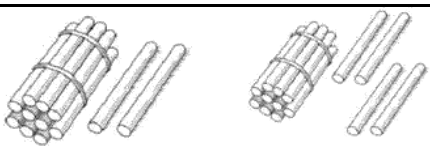
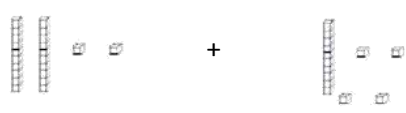
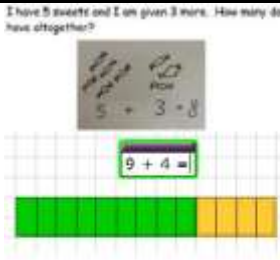
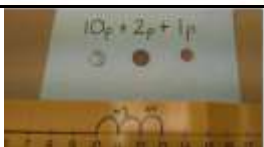
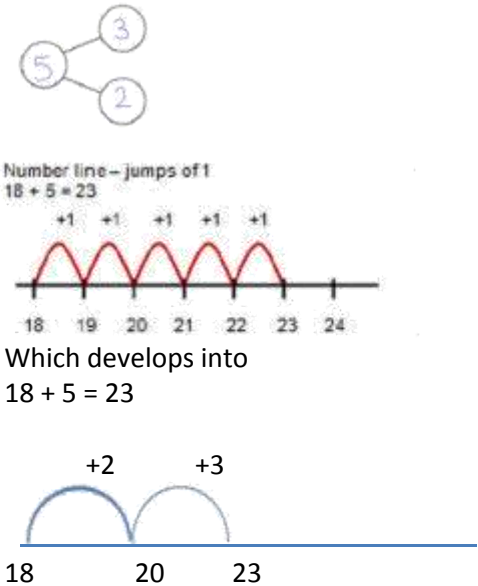
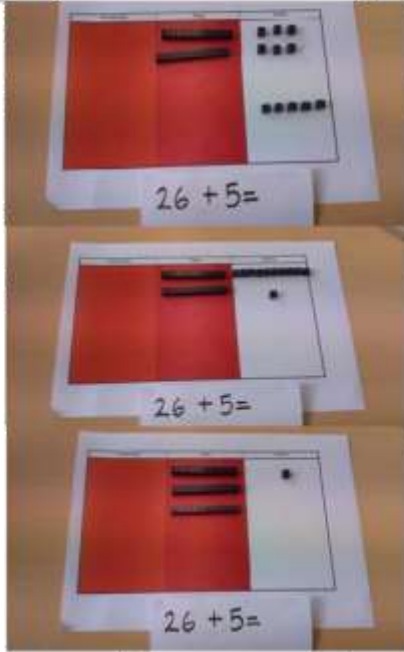


Addition – EYFS		
	Teaching strategies	Concrete/Visual resources
✓ <i>Count reliably from 1-20</i>	✓ Count a given number of objects	 1-1 correspondence
	✓ Count out objects from a larger group	
✓ <i>Place numbers from 1-20 in order</i>	✓ Put numbers from 1-20 in ascending order ✓ Identify missing numbers	
✓ <i>Find one more than numbers to 20</i>	✓ Use concrete resources ✓ Use Numicon ✓ Jump forward one on a number line	  
✓ Add 2 single-digit numbers, counting on to find the answer	✓ Begin with physical objects to support addition ✓ Introduce Numicon to represent a given number ✓ Reinforce the links between the concrete objects and the numerals ✓ Count on using a number line	   4 + 3 

Addition – Year 1		
	Teaching strategies	Concrete/Visual resources
✓ <i>add and subtract one-digit and two-digit numbers to 20, including 0</i>	✓ Begin with physical objects to support addition	  $6 + 5 =$
	✓ Reinforce the links between the concrete objects and the numerals, showing that addition can be done in any order	
	✓ Using tens frames to bridge through ten ✓ Adding more than one number e.g., $3+5+7$	 
	✓ Consolidate understanding of numerals and number order through using a prepared number line and jumps of one. This shows children the mental process.	
	✓ Children will partition numbers into tens and ones to add numbers greater than ten, using tens frames and by making bundles of ten. They will represent this using the circles as demonstrated	 $12 + 14$ 
	✓ Once the concept of ten is well established, children will no longer need to make ten from their numbers, and can represent it using the dienes ten stick and the place value chart.	
✓ <i>represent and use number bonds and related addition facts within 20</i>	✓ use ten frames to make ten and twenty ✓ use coloured multilink to make pairs to ten and twenty ✓ use jumps on a number line to make ten and twenty ✓ through practice, recall these	

	facts mentally	
✓ <i>read, write and interpret mathematical statements involving addition (+) and equals (=) signs</i>	✓ introduce the bar method – cubes with 1:1 representation	
✓ <i>solve one-step problems that involve addition, using concrete objects and pictorial representations, and missing number problems such as 7 = ? – 9</i>	✓ draw pictorial representations ✓ introduce the bar method – cubes with 1:1 representation	I have 5 sweets and I am given 3 more. How many do I have altogether? 
✓ <i>use addition in the context of money, measures and other real-life contexts</i>	✓ children use coins and measuring equipment to solve problems	

Addition – Year 2	Teaching strategies	Concrete/Visual resources
✓ <i>add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</i> ✓ <i>a two-digit number and 1s</i>	✓ Using tens frames to bridge through ten to visualise mental processes ✓ Adding more than one number	
	✓ Children will discuss how to add efficiently, using their knowledge of number bonds and number sense ✓ Children will use a prepared number line and jumps of one and ten ✓ Children will apply their growing knowledge of number bonds to partition numbers into useful parts	
	✓ Children will use Dienes to add ones to a number, including substituting for a '10' when crossing a 10s barrier	

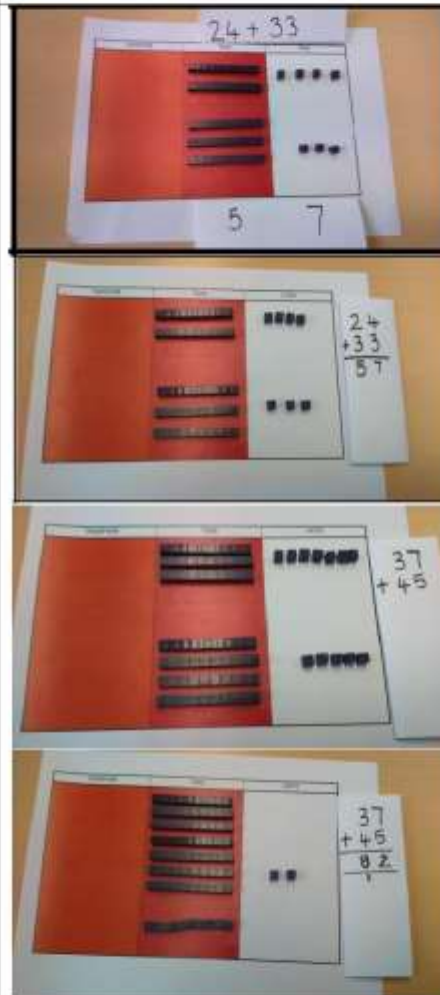
- ✓ *add and subtract numbers using concrete objects, pictorial representations, and mentally, including:*
 - ✓ *a two-digit number and 10s*

- ✓ Children will use a hundred square and Dienes together, using the Dienes to reinforce the place value.

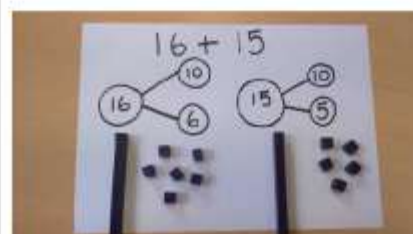
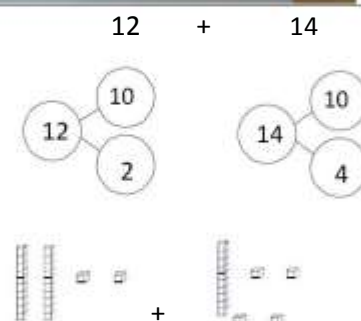
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

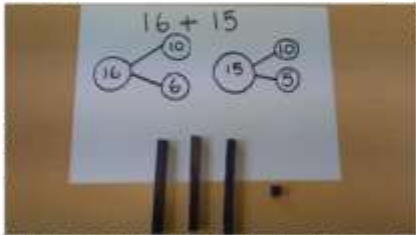
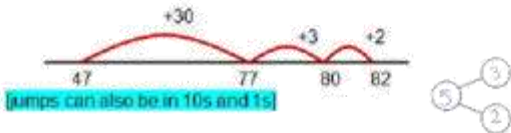
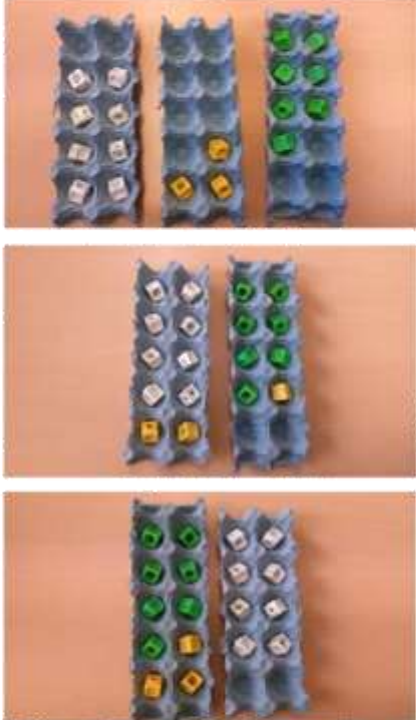
- ✓ *add and subtract numbers using concrete objects, pictorial representations, and mentally, including:*
 - ✓ *2 two-digit numbers*

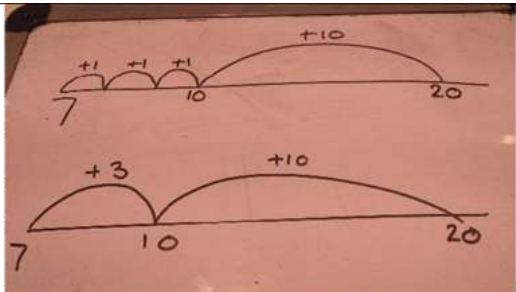
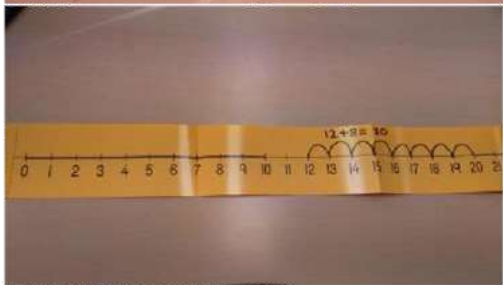
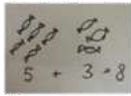
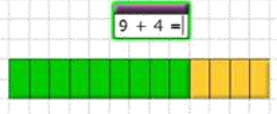
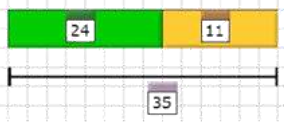
- ✓ Children will continue to partition numbers into combinations that allow them to add more easily.
- ✓ This will progress into formal written methods.



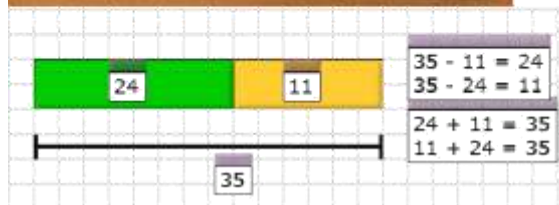
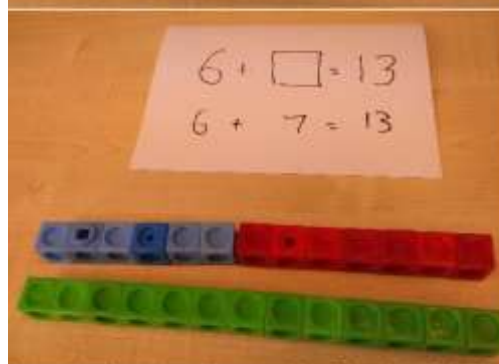
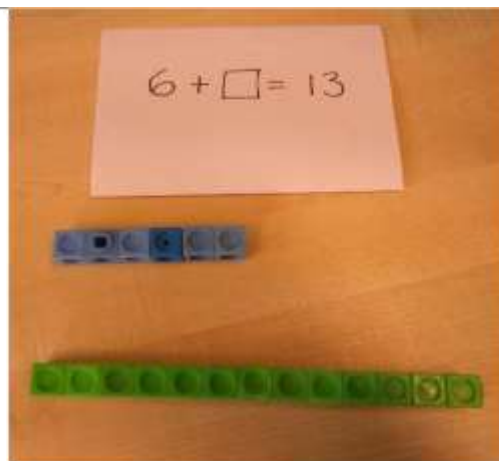
- ✓ Children will learn how to manipulate numbers by partitioning, including using their number bonds to 10 to combine 'ones' to create new 10s.



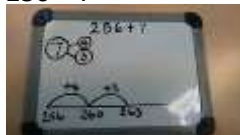
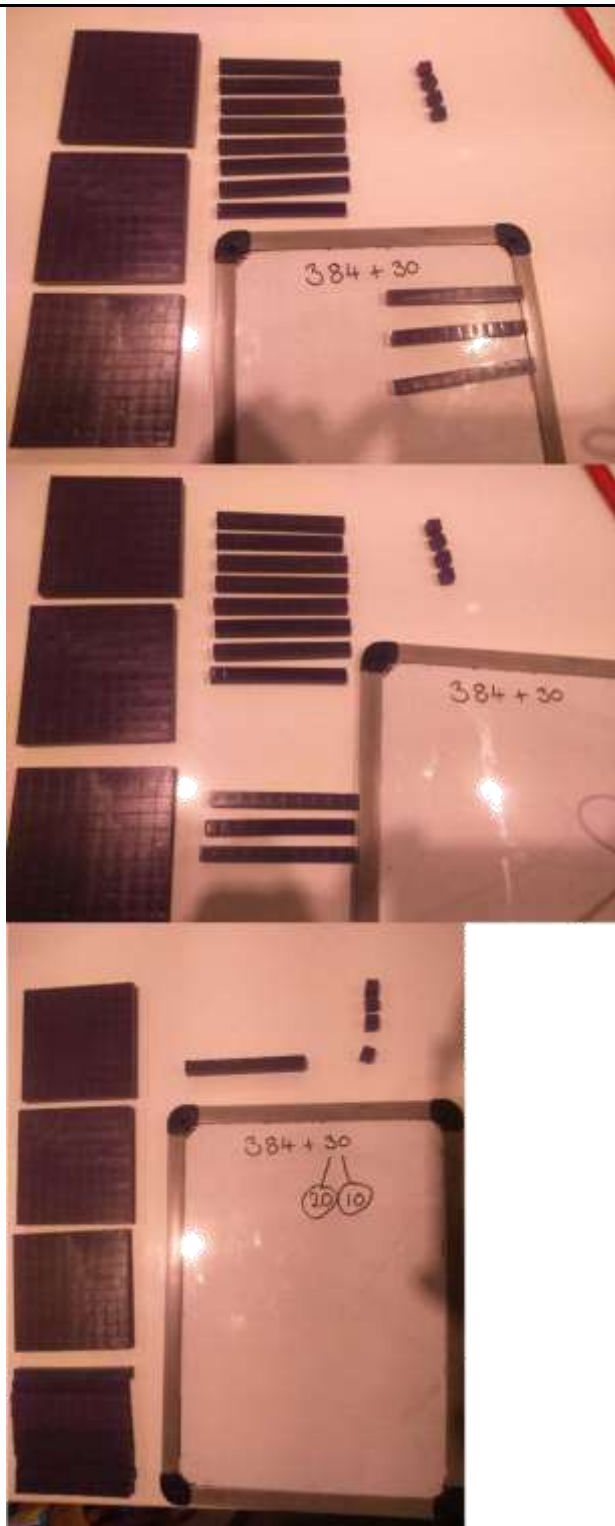
		
	✓ Children will understand the concept of counting on by using a number line. It is important to allow the children to explore which number is best to go first (i.e. the largest or smallest).	Number line (efficient jumps) $35 + 47$ (start with biggest number) 
adding 3 one-digit numbers	✓ Children will use their number bonds to 10 to combine numbers in different ways.	
✓ recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	✓ use ten frames to make ten and twenty ✓ use coloured multilink to make ten and twenty ✓ use jumps on a number line to make ten and twenty ✓ through practice, recall these facts mentally	

		 
✓ show that addition of 2 numbers can be done in any order (commutative)	✓ draw pictorial representations ✓ bar method – cubes with 1:1 representation ✓ Bar method – bars representing more than 1	I have 5 sweets and I am given 3 more. How many do I have altogether?   
✓ solve problems with addition and subtraction: ✓ using concrete objects and pictorial representations, including those involving numbers, quantities and measures ✓ applying their increasing knowledge of mental and written methods	✓ children use a range of real-life situations to solve problems ✓ they represent their calculating pictorially ✓ They progress to using written methods to solve problems ✓ They use the full range of application to measures, time and money to solve problems ✓ They use their number sense to imagine what a problem would look like and make an estimate of the answer	If I had 50p and 7p fell out of my pocket, I would still have most of my money because 7p isn't very much You would have a number ending in 3 because we started with a tens number and 7 is a number bond with 3  
✓ recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing	✓ children use the bar method to recognise inverse relationships. ✓ They check their answers by showing their understanding using the bar method with 1:1 correspondence and building to blank bars	

number
problems



During Year 2, children will also consolidate the understanding of two more and two less and 3 more and 3 less. They will be able to recall 2 more and 2 less than numbers to 7 and 3 more and 3 less than all numbers to 6.

Addition – Year 3		
	Teaching strategies	Concrete/Visual resources
✓ <i>add and subtract numbers mentally, including:</i> ✓ <i>a three-digit number and 1s</i> ✓ <i>a three-digit number and 10s</i> ✓ <i>a three-digit number and 100s</i>	Children use the part-whole model and a number line to bridge through ten children recall their doubles, near doubles, and rules about adding ten or near tens	256 + 7 
	✓ Children use a place value chart and dienes or place value counters to represent the mental calculation of adding tens or hundreds ✓ Use the place value grid and the part-whole model to reason about bridging 100 or 1000 ✓ Children explain their thinking using the part-whole model ✓ Recognise that the smaller columns won't change	



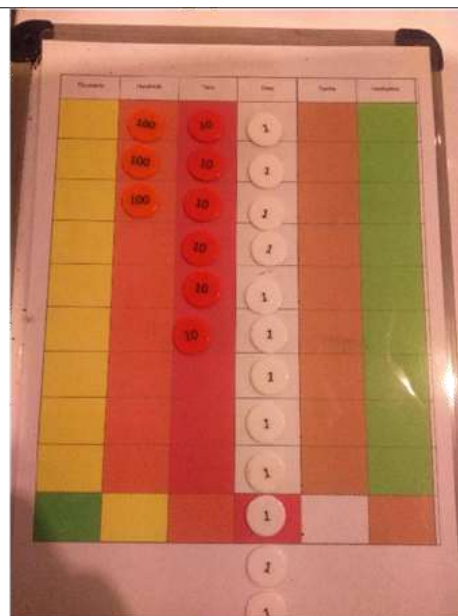
✓
add and subtract
numbers with up
to three digits,
using formal
written methods
of columnar
addition

✓
use dienes and
place value discs to
represent numbers
and show the
process of carrying
tens and hundreds



365+247

Add 7 to ones column



too many ones

for the ones column so exchange.

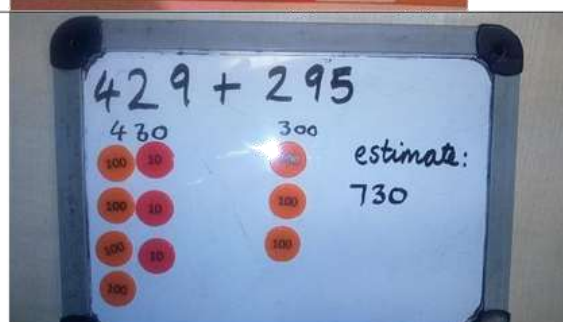


✓

estimate the answer to a calculation and use inverse operations to check answers

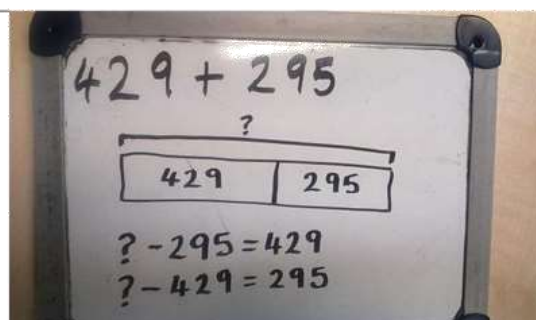
✓

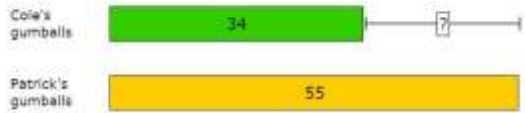
use dienes or place value discs to represent numbers being rounded before calculating



✓

use the bar method to identify the inverse operation prior to calculating the inverse



✓	<i>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</i>	Use the bar method to represent problems. Self-select equipment to follow methods above	Cole has 34 gumballs and Patrick has 55 gumballs. How many more gumballs does Patrick have than Cole? 
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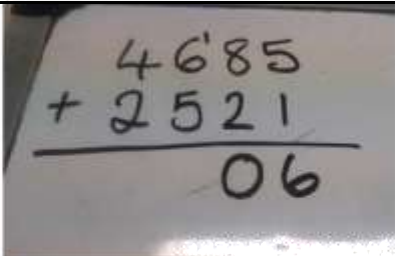
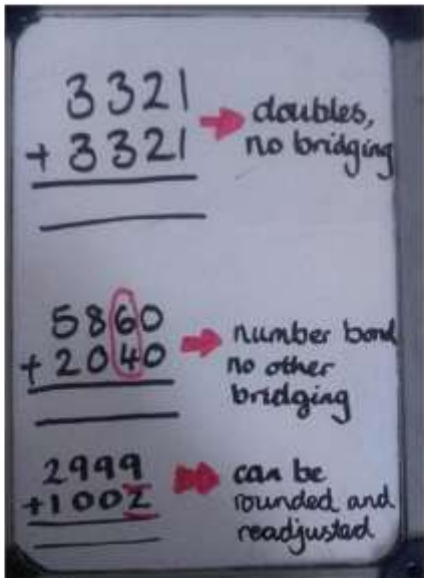
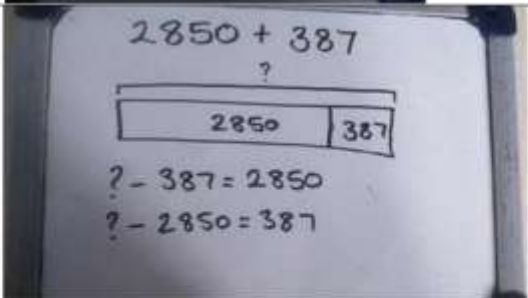
Children will learn to recall 4 more and 4 less than all numbers to 5,

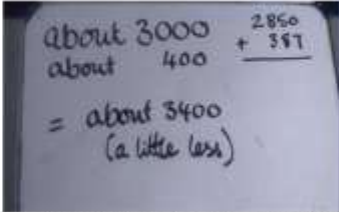
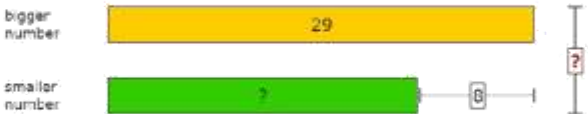
5 more and 5 less than all numbers to 4

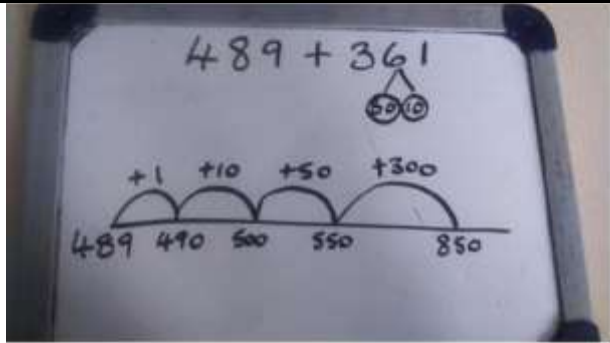
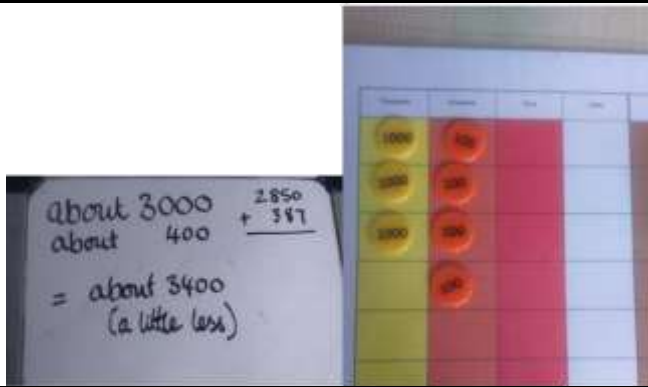
6 more and 6 less than all numbers to 3

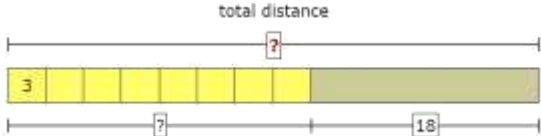
7 more and 7 less than all numbers to 2

Children will learn number bonds to 100 for multiples of 5

Addition – Year 4		
	Teaching strategies	Concrete/Visual resources
✓ <i>add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</i>	Bridge through tens/hundreds/thousands by representing using discs & Jellett grid alongside formal columns	 
	✓ Identify when it is easier to use an informal mental method	
✓ <i>estimate and use inverse operations to check answers to a calculation</i>	✓ use the bar method to represent calculations and derive the inverse	

✓	✓ Use the Jellett grid to simplify numbers to estimate approximate answers Discuss appropriate degree of rounding	 
✓ <i>solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</i>	✓ Use bar method to represent calculations in a range of question formats. ✓ Children self-select equipment to help calculate the answer	The difference between two numbers is 8. If the bigger number is 29, what is the sum of the two numbers? 

Addition – Year 5		
	Teaching strategies	Concrete/Visual resources
✓ <i>add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</i>	Estimating first. Using place value discs if necessary to represent answers ✓ Use numbers with decimals up to 2dp	
✓ <i>add and subtract numbers mentally with increasingly large numbers</i>	✓ Use a numberline to represent the order of the calculation process and evaluate how efficient each method is	
✓ <i>use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</i>	✓ Use the Jellett grid to simplify numbers to estimate approximate answers ✓ Discuss appropriate degree of rounding	
✓ <i>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</i>	✓ Use the bar method to represent problems using a range of models	Karen collected 48 rocks. Noah collected 23 more rocks than Karen and 61 more rocks than Dana. How many rocks did they collect altogether? 

Addition – Year 6		
	Teaching strategies	Concrete/Visual resources
✓ <i>perform mental calculations, including with mixed operations and large numbers</i>	Children explain their thinking processes using numberlines, part/whole models and any other prior strategies appropriate to the question	No specific visual /concrete strategy
✓ <i>use their knowledge of the order of operations to carry out calculations involving the four operations</i>	✓	No specific visual/concrete strategy
✓ <i>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</i>	✓ Use the bar method to represent problems and identify calculations	William the Earthworm is slowly moving toward a giant rock. He travels 3 centimeters every hour. After 8 hours, he still has 18 centimeters left to travel. How far was William the Earthworm from the giant rock at first? 

Subtraction EYFS

✓ Find one less than numbers to 20

✓ Use concrete resources

✓ Use Numicon

✓ Jump back one on a number line

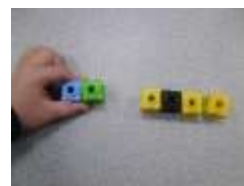


✓ Subtract 2 single-digit numbers, counting back to find the answer

Begin with physical objects to support subtraction

✓ Reinforce the links = 4 between the concrete objects and the numerals

✓ Count back using a number line



E.g. $6 - 2 = 4$



E.g. $6 - 2$



Subtraction – Year 1

✓ *subtract one-digit and two-digit numbers to 20, including 0*

Teaching strategies

- ✓ Begin with physical objects to support subtraction
- ✓ Reinforce the links between the concrete objects and the numerals, showing that addition can be done in any order but not subtraction

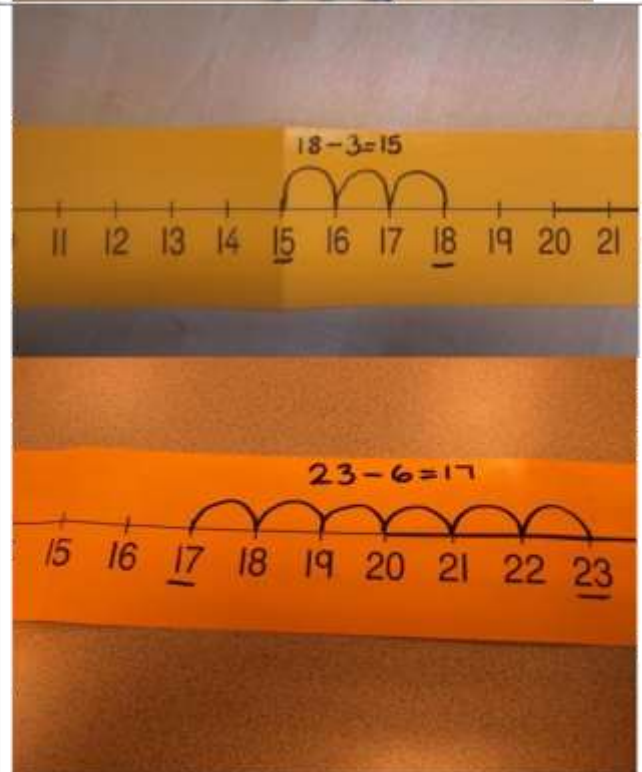
Concrete/Visual resources

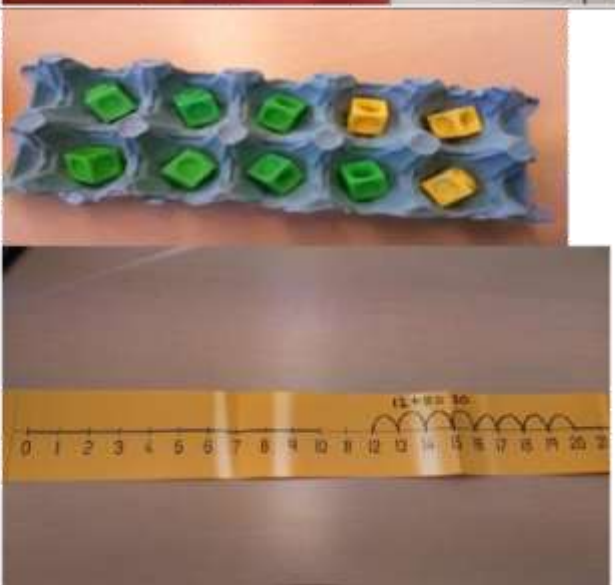
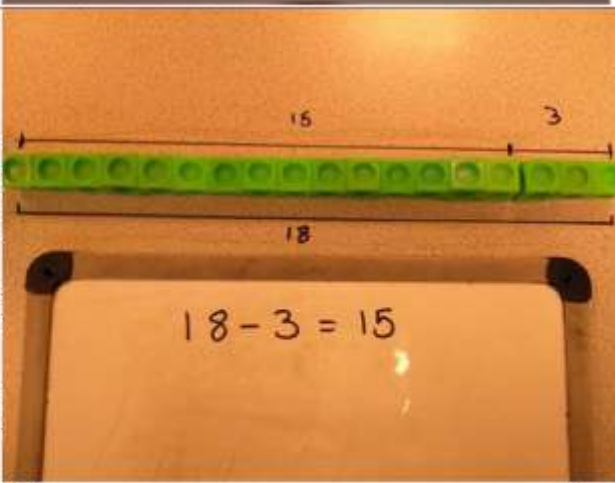


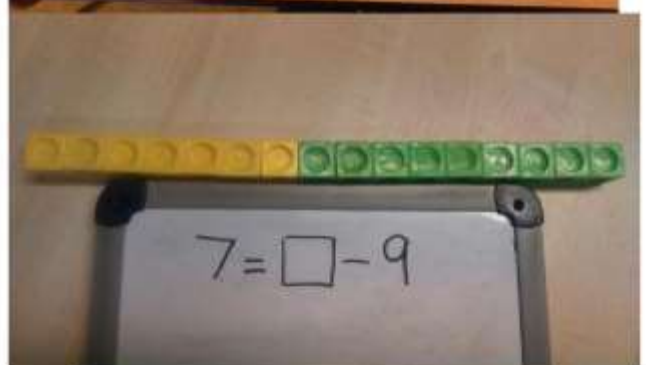
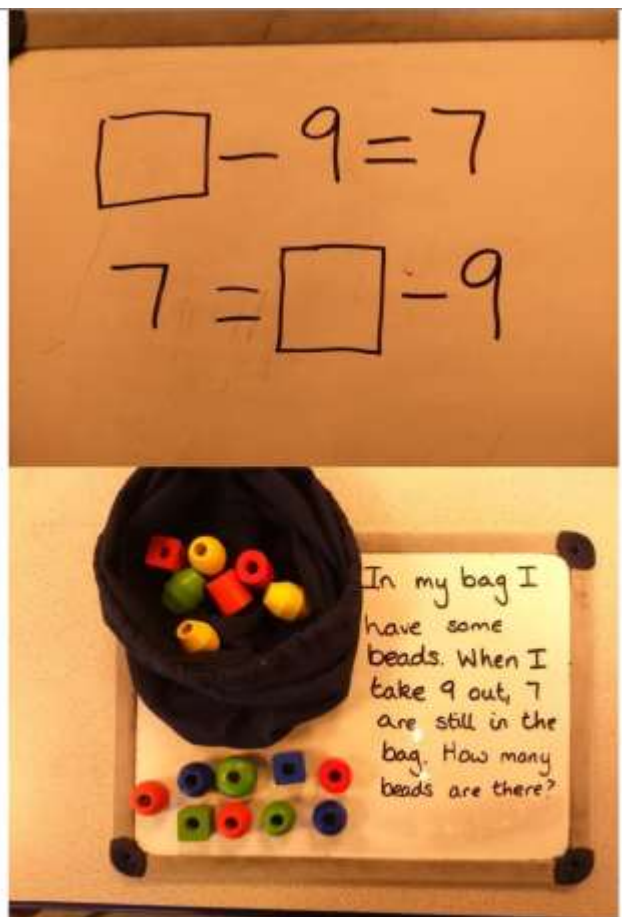
- ✓ Using tens frames to physically subtract



- ✓ Consolidate understanding of numerals and number order through using a prepared number line and jumps of one. This shows children the mental process.

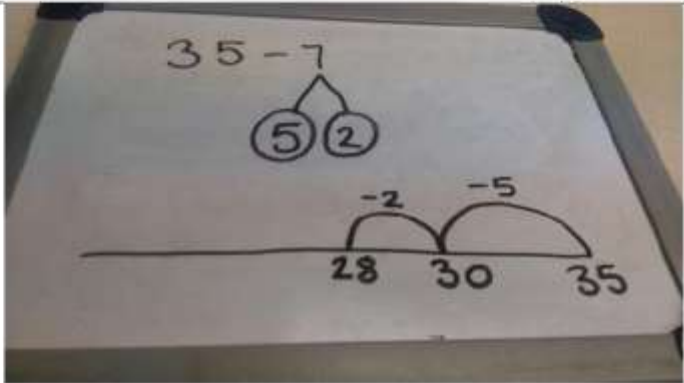
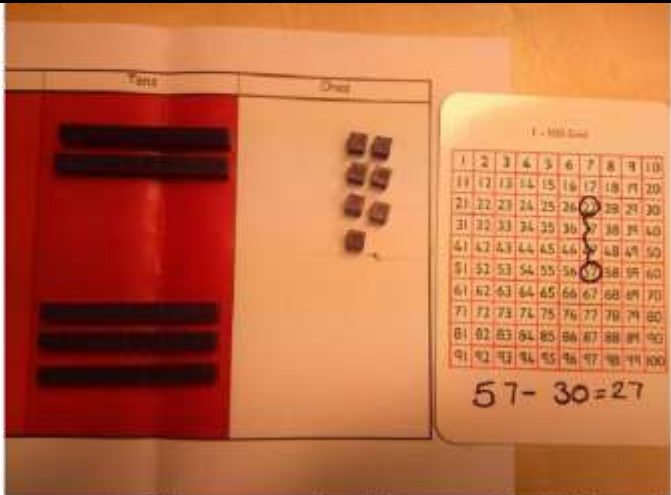


✓	✓ Once the concept of ten is well established, children will no longer need to make ten from their numbers, and can represent it using the dienes ten stick and the place value chart.	
✓ <i>represent and use number bonds and related subtraction facts within 20</i>	✓ use ten frames to make ten and twenty ✓ use coloured multilink to make pairs to ten and twenty ✓ use jumps on a number line to subtract from ten and twenty ✓ through practice, recall these facts mentally	
✓ <i>read, write and interpret mathematical statements involving subtraction (-) and equals (=) signs</i>	✓ introduce the bar method – cubes with 1:1 representation	
✓ <i>solve one-step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$</i>	✓ draw pictorial representations ✓ introduce the bar method – cubes with 1:1 representation ✓ Start missing number sentences with the calculation in the traditional order ✓ Introduce with real-life problems	



✓ use subtraction in the context of money, measures and other real-life contexts

✓ children use coins and measuring equipment to solve problems

Subtraction – Year 2	Teaching strategies	Concrete/Visual resources
✓ <i>subtract numbers using concrete objects, pictorial representations, and mentally, including:</i> ✓ <i>a two-digit number and 1s</i>	✓ Using tens frames ✓ Children will discuss how to subtract efficiently, using their knowledge of number bonds and part-whole ✓ Children will use a prepared number line and jumps of one and ten	 
✓ <i>subtract numbers using concrete objects, pictorial representations, and mentally, including:</i> ✓ <i>a two-digit number and 10s</i>	✓ Children will use a hundred square and Dienes together, using the Dienes to reinforce the place value.	

✓
add and subtract
numbers using
concrete objects,
pictorial
representations,
and mentally,
including:

✓
2 two-digit
numbers

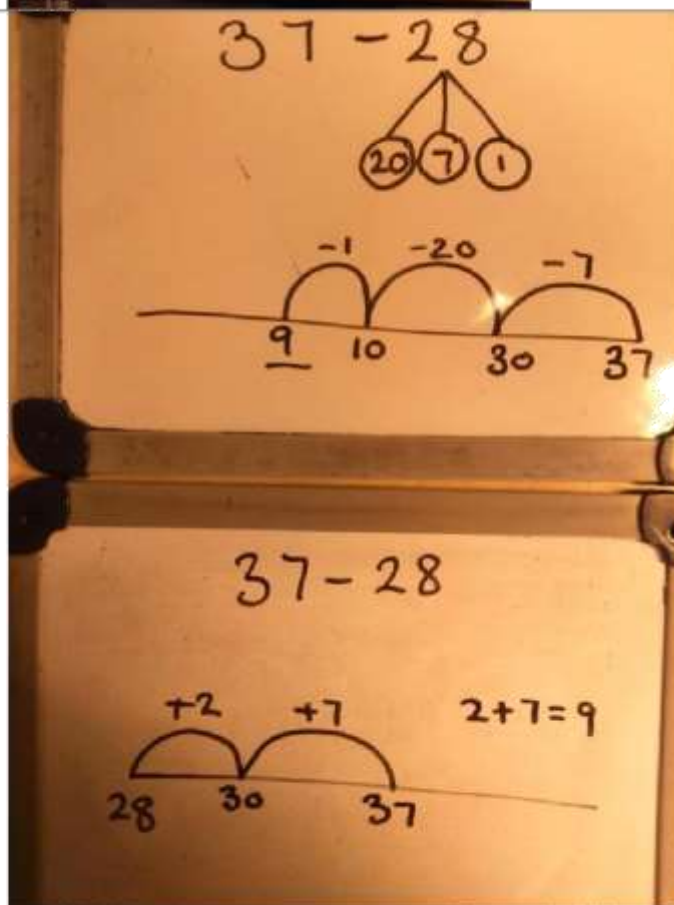


✓

Children will
continue to
partition numbers
into combinations
that allow them
to subtract more
easily.

✓

Children will
understand the
concept of
counting back by
using a number
line. It is
important to
allow the children
to explore which
number is best to
go first (i.e. the
largest or
smallest).



✓ *recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100*

✓ use ten frames to subtract from ten and twenty

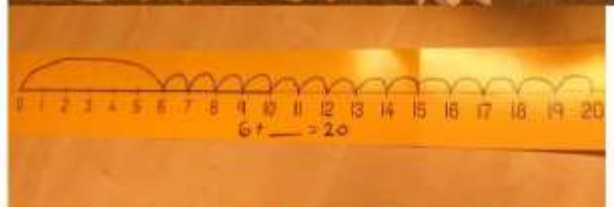
✓ use coloured multilink to make ten and twenty

✓ Use ten frames to represent links between number bonds to 10 and 100

✓ use jumps on a number line to subtract from ten and twenty

✓ Make 20 and 100 in the context of money

✓ through practice, recall these facts mentally



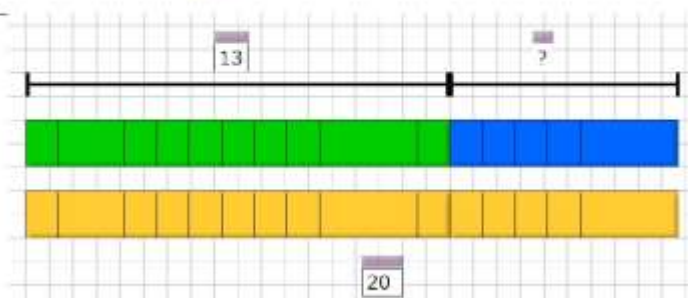
- Harry has 15p. Which coin does he need to make 20p?



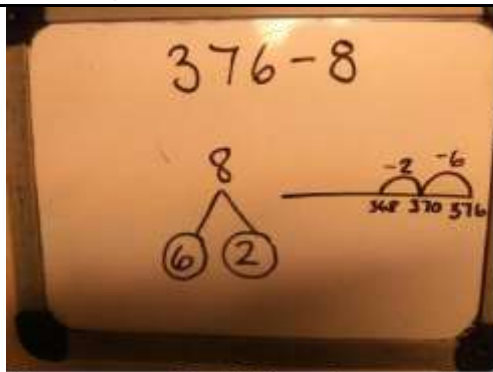
✓ *show that subtraction can be done in any order*

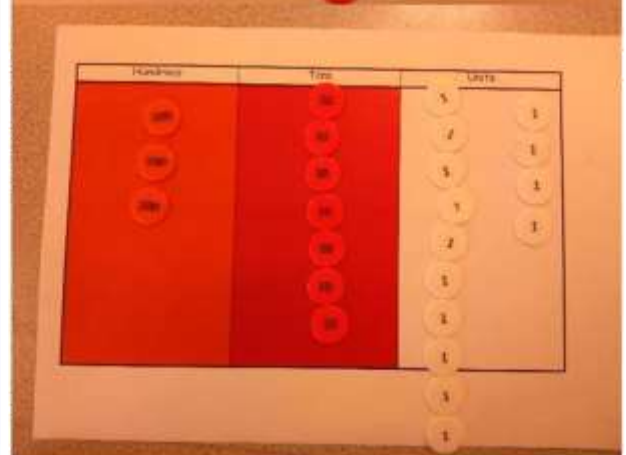
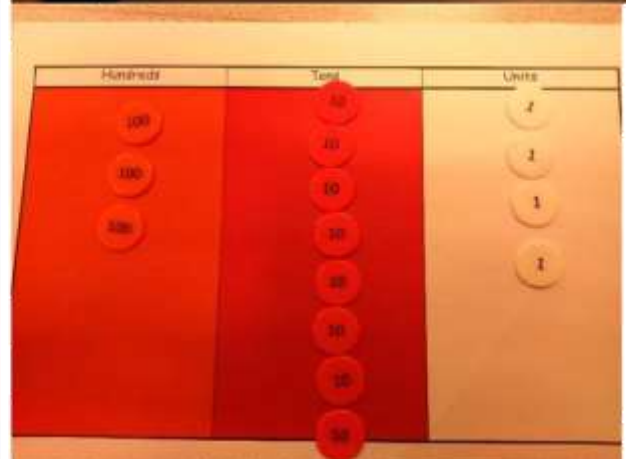
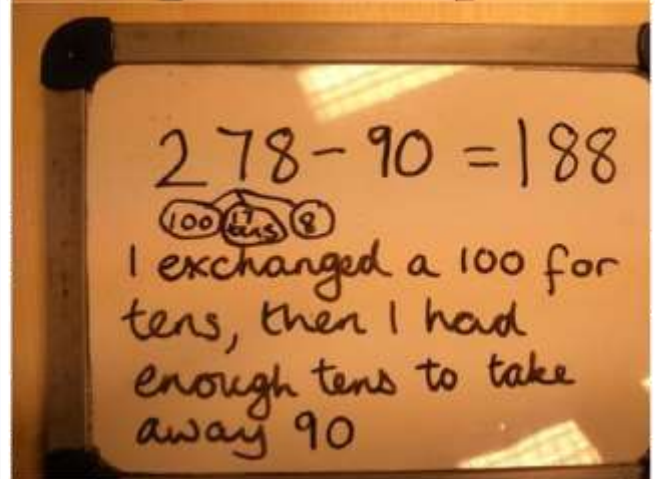
✓ draw pictorial representations *cannot be*

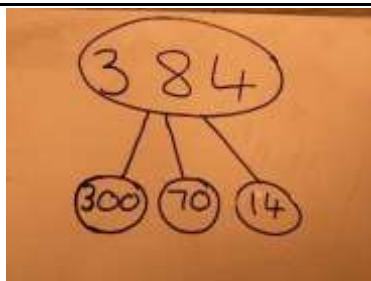
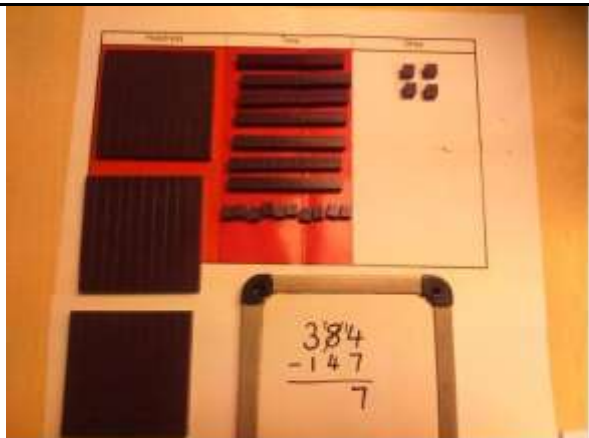
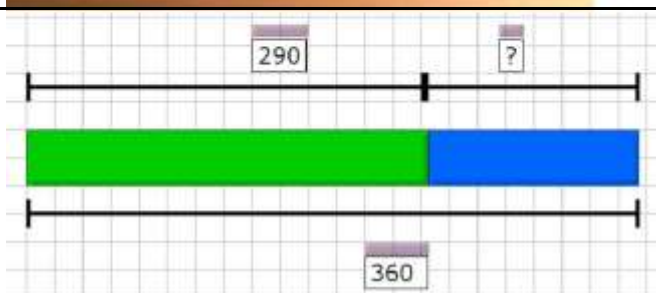
✓ bar method – cubes with 1:1 representation



	✓ Bar method – bars representing more than 1	
✓ solve problems with addition and subtraction: ✓ using concrete objects and pictorial representations, including those involving numbers, quantities and measures ✓ applying their increasing knowledge of mental and written methods	✓ children use a range of real-life situations to solve problems ✓ they represent their calculating pictorially ✓ They progress to using written methods to solve problems ✓ They use the full range of application to measures, time and money to solve problems ✓ They use their number sense to imagine what a problem would look like and make an estimate of the answer	If I had 50p and 7p fell out of my pocket, I would still have most of my money you would have a number ending in 3 because we started with a
✓ recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	children use the bar method to recognise inverse relationships. ✓ They check their answers by showing their understanding using the bar method	

Subtraction – Year 3		
	Teaching strategies	Concrete/Visual resources
✓ <i>subtract numbers mentally, including:</i> ✓ <i>a three-digit number and 1s</i>	- Use the part-whole model and a number line to subtract through ten - children recall rules for subtracting tens, using a 100 square for support	
	✓ Children use a place value chart and dienes or place value counters to represent the mental calculation of subtracting tens or hundreds	 no exchange
	✓ Use the place value grid and the part-whole model to reason about bridging 100 or 1000 ✓ Children explain their thinking using the part-whole model	 exchange 



		
✓ <i>add and subtract numbers with up to three digits, using formal written methods of columnar subtraction</i>	✓ children use dienes and place value discs to represent numbers and show the process of exchanging tens and hundreds on a Jellett Grid	
✓ <i>estimate the answer to a calculation and use inverse operations to check answers</i>	✓ Children estimate their answers using dienes	
	✓ Children use the bar model to identify the inverse	
✓ <i>solve problems, including missing number problems, using number facts, place value, and more complex subtraction.</i>	Select strategies from above to apply to problems	

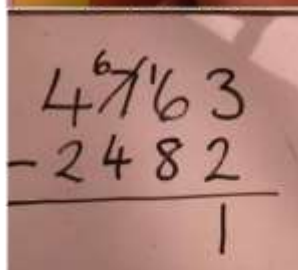
Subtraction – Year 4

Teaching strategies

Concrete/Visual resources

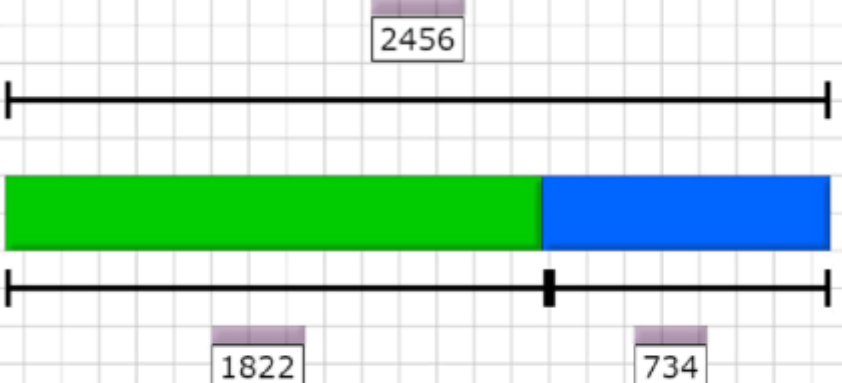
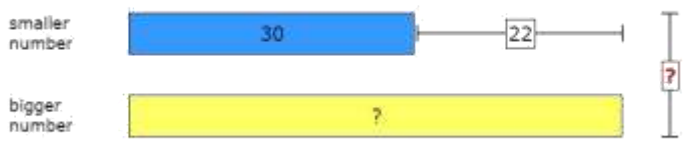
✓ add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate

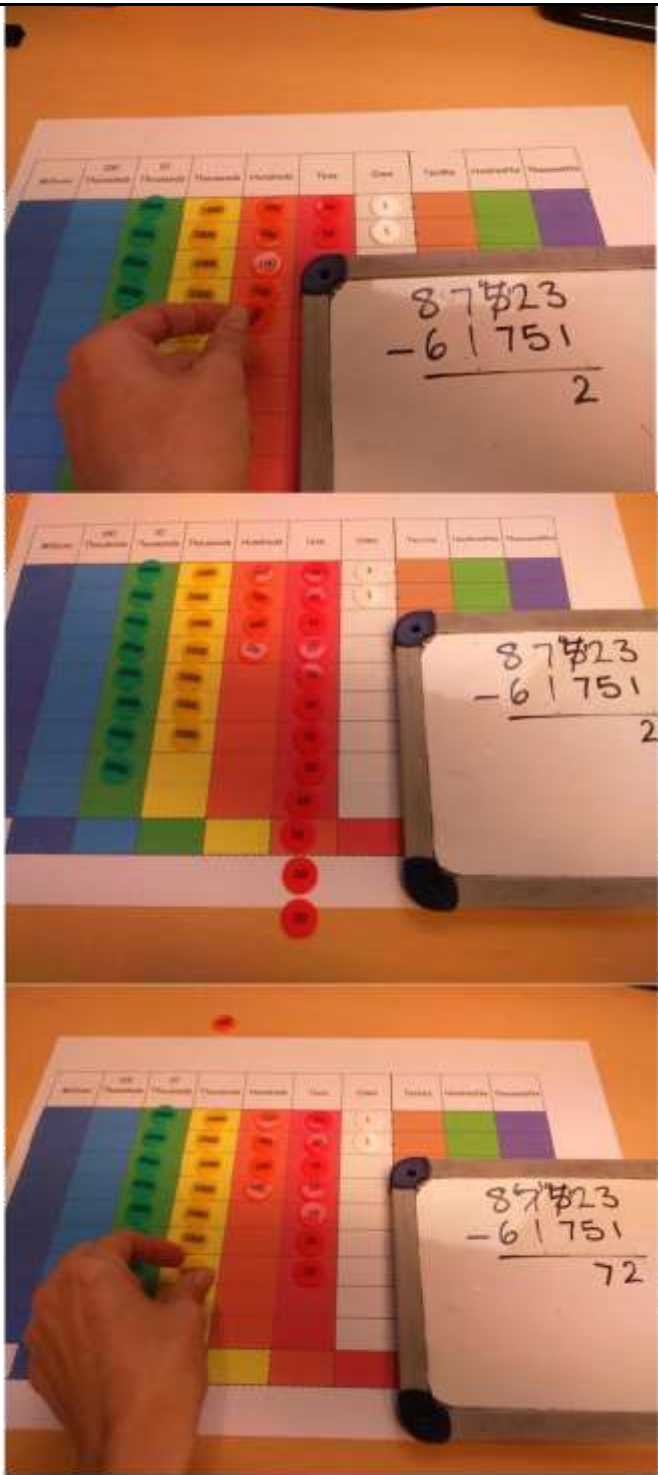
Use place value discs and dienes to practise exchange

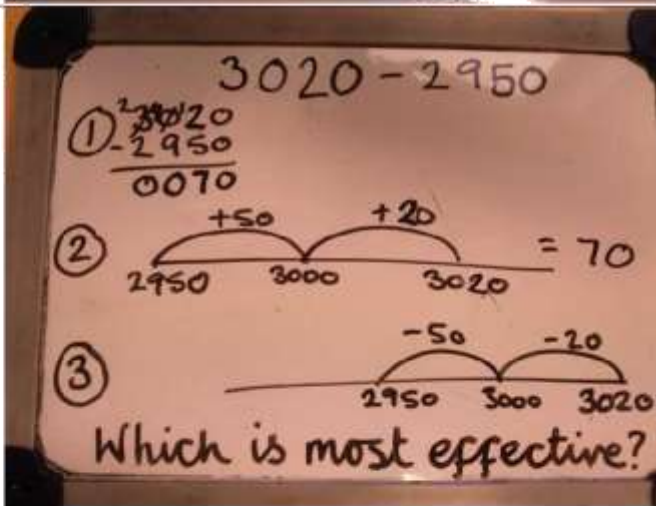
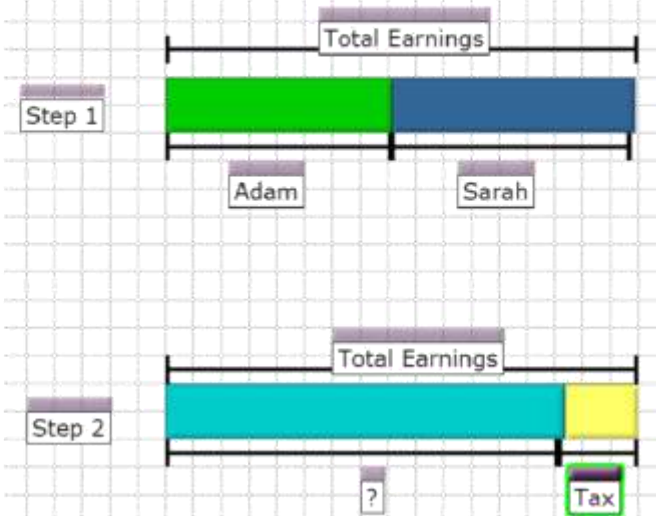


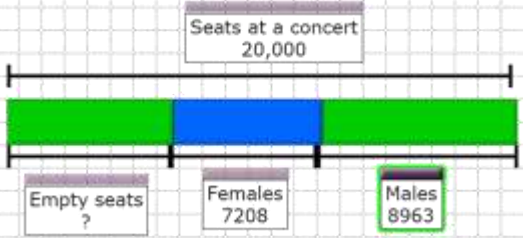
✓ Use place value discs to introduce decimal subtraction



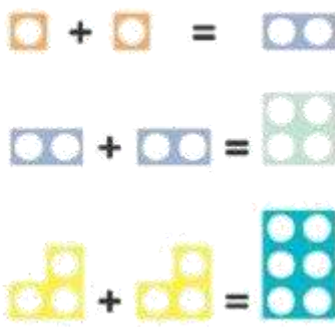
✓ <i>estimate and use inverse operations to check answers to a calculation</i>	✓ Use the bar method to represent inverse operations	
✓ <i>solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</i>	✓ Use the bar method to identify what calculations are required	 The difference between two numbers is 22. If the smaller number is 30, what is the sum of the two numbers?

Subtraction – Year 5		
	Teaching strategies	Concrete/Visual resources
✓ <i>add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</i>	Use place value discs to represent exchange, including decimals	
	✓ Use the context of money to enhance understanding of exchange	I have these coins. If I spend £1.60p, how much money will I have left?

		
✓ <i>add and subtract numbers mentally with increasingly large numbers</i>	✓ Use a number line to demonstrate mental procedures: discuss variations in method and evaluate efficiency	
✓ <i>use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</i>	No specific strategies check	
✓ <i>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</i>	✓ Use the bar method to represent the problem and identify the calculation	Adam earns £37,566 pounds a year. His wife, Sarah, earns £42,819 a year. How much do they earn altogether? They have to pay £7887 income tax per year, how much are they left with after this is taken off? 

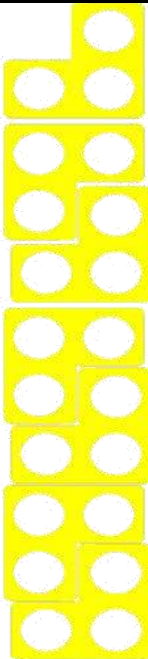
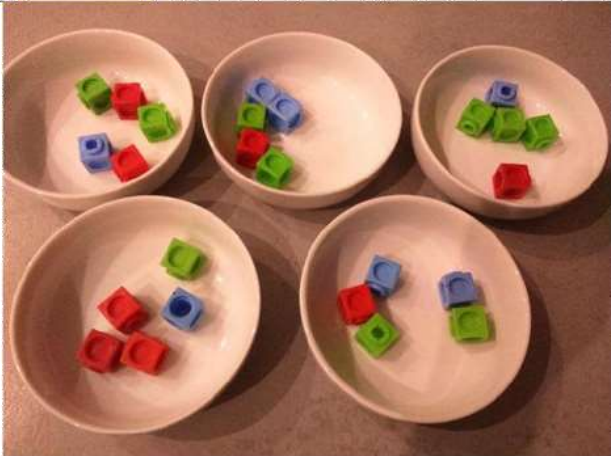
Subtraction – Year 6		
	Teaching strategies	Concrete/Visual resources
✓ <i>perform mental calculations, including with mixed operations and large numbers</i>	self-select resources/jottings to explain their mental processes	 $= 936 + 285$
✓ <i>use their knowledge of the order of operations to carry out calculations involving the four operations</i>	No specific visual/concrete strategies	
✓ <i>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</i>	✓ Use the bar method to represent problems and identify calculations	7208 females attended a concert as well as 8963 males. There were originally 20000 seats on sale. How many empty seats were there at the concert? 

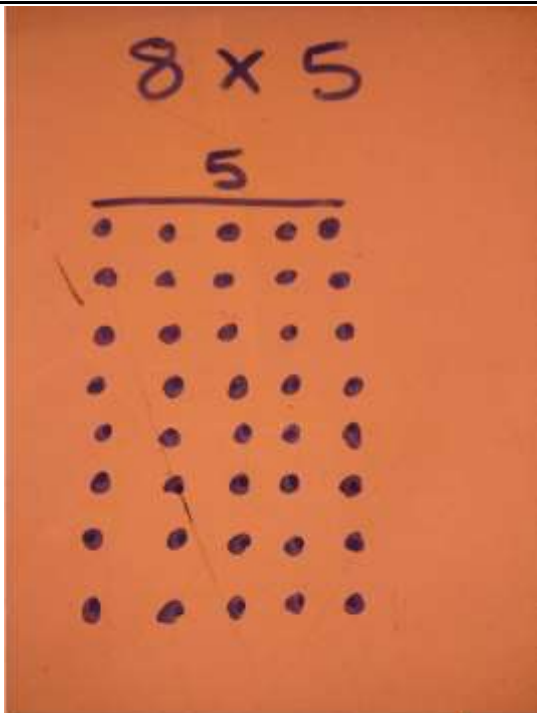
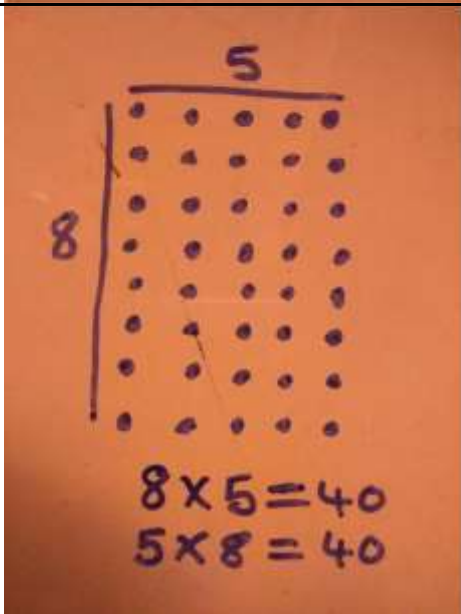
Multiplication – EYFS

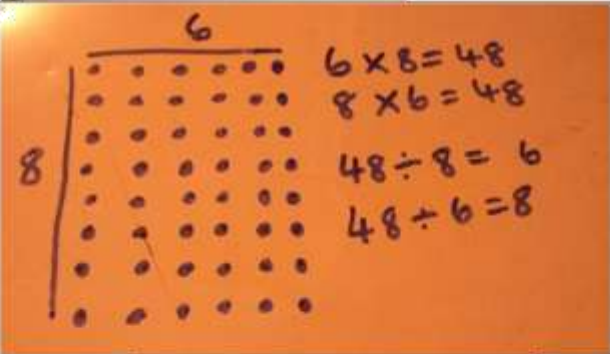
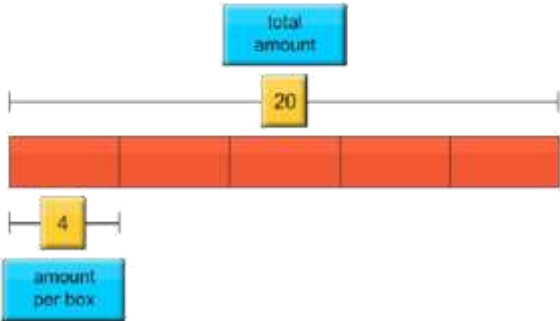
	Teaching strategies	Concrete/Visual resources
✓ <i>To solve problems involving doubling</i>	✓ use concrete objects to introduce the term 'double'	
	✓ Introduce Numicon	
	✓ Pictorial representation	 Double 3 = 6

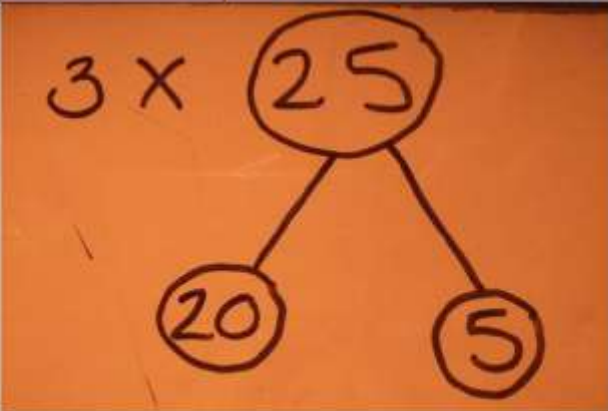
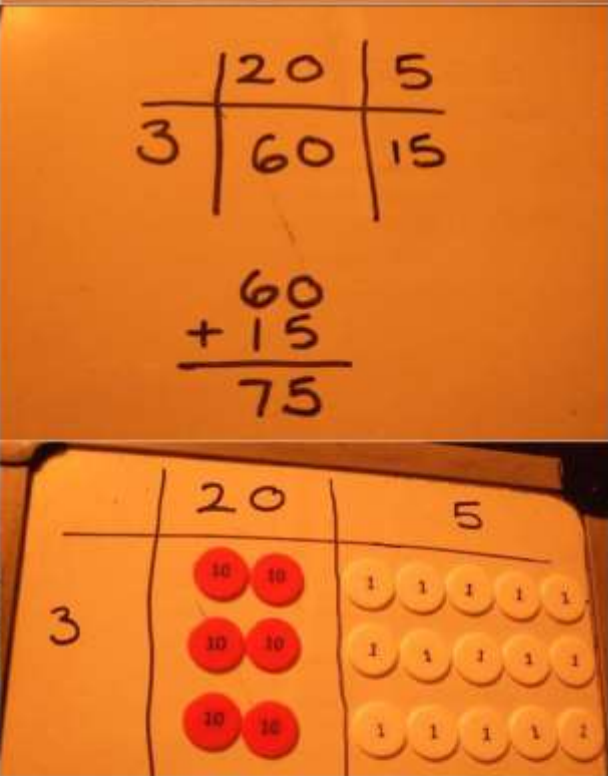
Multiplication – Year 1		
	Teaching strategies	Concrete/Visual resources
✓ <i>solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher</i>	✓ use concrete objects to count in twos. Introduce the term 'double'	
	✓ Lay out objects in arrays as you multiply	
	✓ Represent the problem as repeated addition	

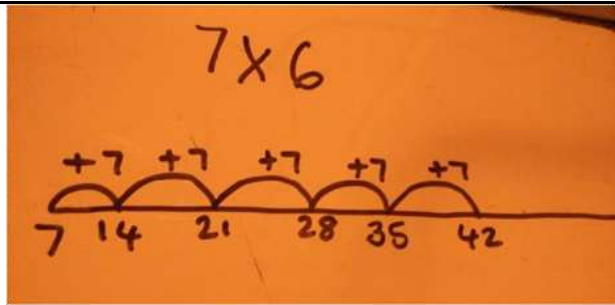
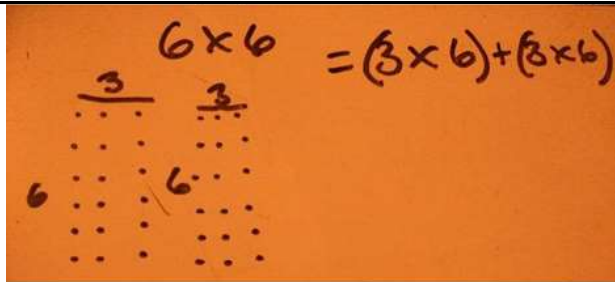
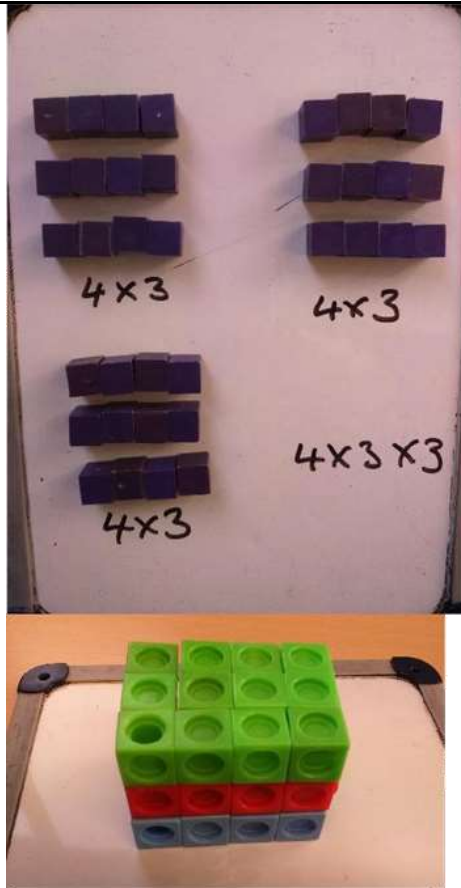
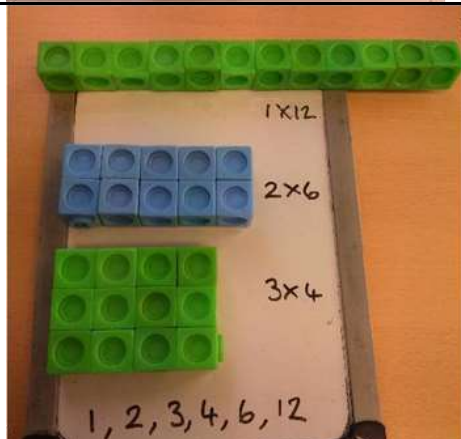
Multiplication – Year 2

✓ recall and use multiplication facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	Teaching strategies ✓ use everyday objects to represent counting as repeated addition	Concrete/Visual resources 
	✓ Use numicon to enhance understanding of odd/even	
	✓ calculate mathematical statements for multiplication within the multiplication tables and write them using the multiplication ($\times$) and equals (=) signs	Use hoops/bowls to multiply with concrete resources  $5 \times 5 = 25$
	✓ Use arrays to represent calculations	

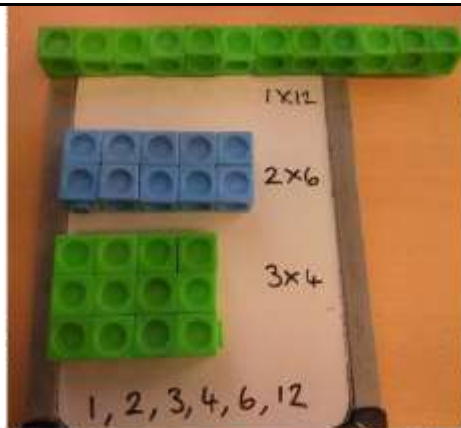
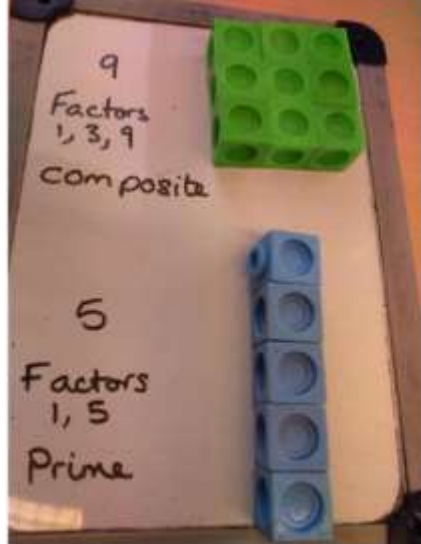
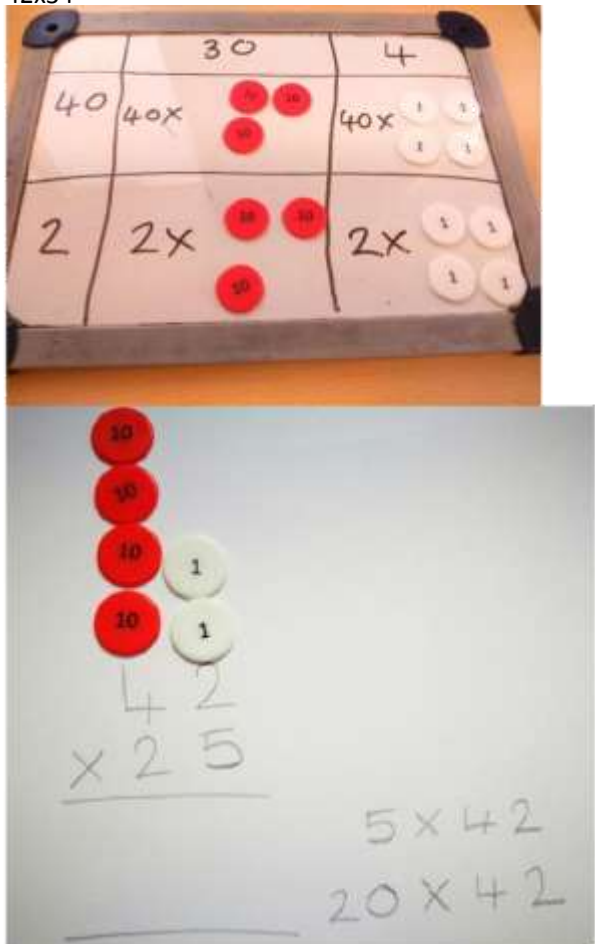
			
✓ show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot	✓ Use arrays to demonstrate commutativity		
✓ solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	✓ use practical resources to solve problems	See examples above	
	✓ use arrays to find answers		
	✓ draw problems in context		
	✓ begin to use a bar method without 1:1 correspondence		The Snoop and Spy detective agency solves an average of 10 mysteries each month. How many mysteries can the club solve in 7 months?

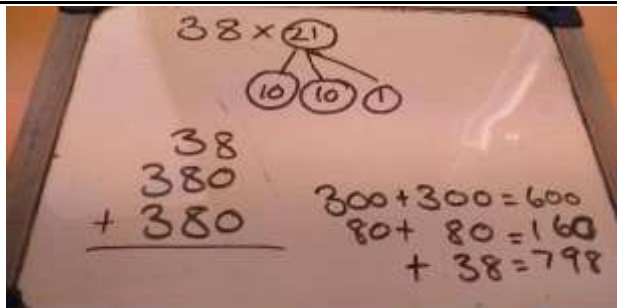
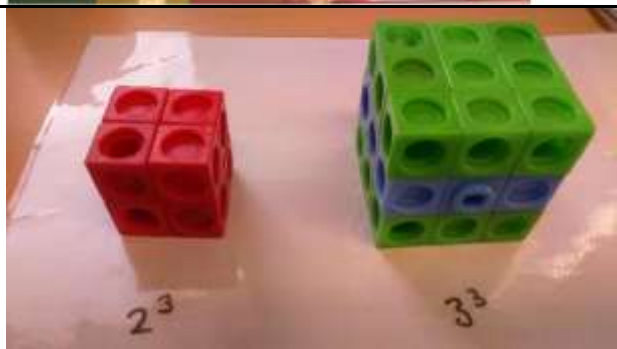
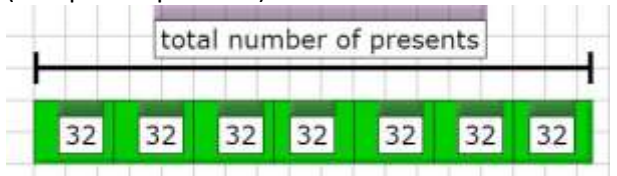
Multiplication – Year 3		
	Teaching strategies	Concrete/Visual resources
✓ recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	✓ Use dienes/place value discs to represent multiplication tables	
	✓ use arrays to represent multiplication and division facts	
	Use a hundred square to identify the relationship between 2x, 4x and 8x	
✓ write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to	✓ use a bar model/numberline to represent multiplication as repeated addition	

formal written methods	✓ Use the part/whole model to partition numbers to multiply	
	✓ Begin to use the grid method alongside place value counters or dienes to display partitioning clearly	
✓ solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	✓ use the bar model to represent the calculation ✓ select appropriate resources/ real life objects to help solve the problem	Children select strategies from above, starting with drawing the bar model to represent the problem.

Multiplication – Year 4		
	Teaching strategies	Concrete/Visual resources
✓ recall multiplication and division facts for multiplication tables up to 12×12	✓ Use number lines to learn multiplication tables as repeated addition	
	✓ Use arrays to make links between the tables known	
✓ use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers ✓	✓ Use arrays/ multilink to represent multiplying 3 numbers	
✓ recognise and use factor pairs and commutativity in mental calculations	✓ Use cubes to derive factor pairs ✓ Use factor pair arrays to discuss commutativity	

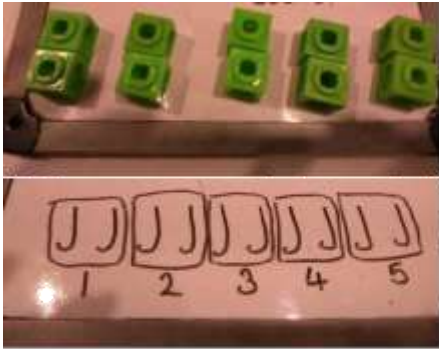
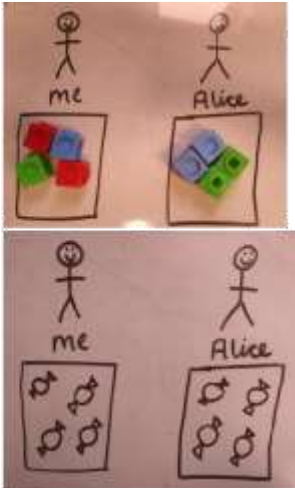
✓ multiply two-digit and three-digit numbers by a one-digit number using formal written layout	✓ Use place value counters to represent the size of the calculation ✓ Transfer this understanding into a grid method ✓ Use place value counters alongside formal methods to support understanding	10 x 8 = 80 8 x 8 = 64
✓ solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, - integer scaling problems - harder correspondence problems such as n objects are connected to m objects	✓ use the bar method to represent calculations to identify what the problem is ✓ use arrays to represent distributive law	Marco donated his collection of science fiction books to a local school. He packed 21 books into each of his 8 boxes. How many books did Marco donate?

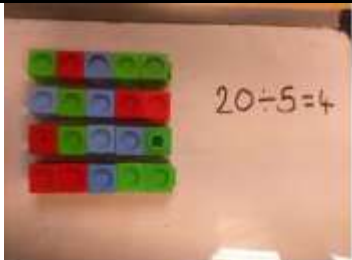
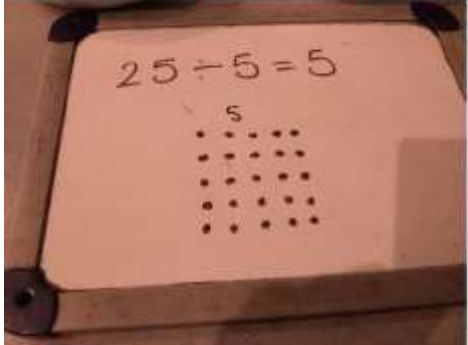
Multiplication – Year 5		
	Teaching strategies	Concrete/Visual resources
✓ <i>identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers</i>	✓ Use cubes to find factor pairs ✓ Use patterns to know if all factor pairs have been found ✓ Use cubes to support finding common factors	
✓ <i>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</i> ✓ <i>establish whether a number up to 100 is prime and recall prime numbers up to 19</i>	✓ Use arrays to demonstrate difference between composite and prime numbers	
✓ <i>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</i>	✓ use place value counters as a starting model, but calculate using written methods ✓ Use place value counters alongside formal methods	42x34 

✓ multiply and divide numbers mentally, drawing upon known facts	✓ use the part/whole model to explain mental calculation processes	
✓ multiply whole numbers and those involving decimals by 10, 100 and 1,000	✓ Use the Jellett Grid to understand the process of x 10, 100 and 1000	
✓ recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)	✓ make square and cube numbers using multilink	
✓ solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes	✓ apply skills from above	
✓ solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	✓ apply skills from above	
✓ solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	✓ use the bar model to help represent the calculations	A school buys 32 presents for each of the seven classes. The presents cost 82p each. How much money will they spend? (first part of problem) 

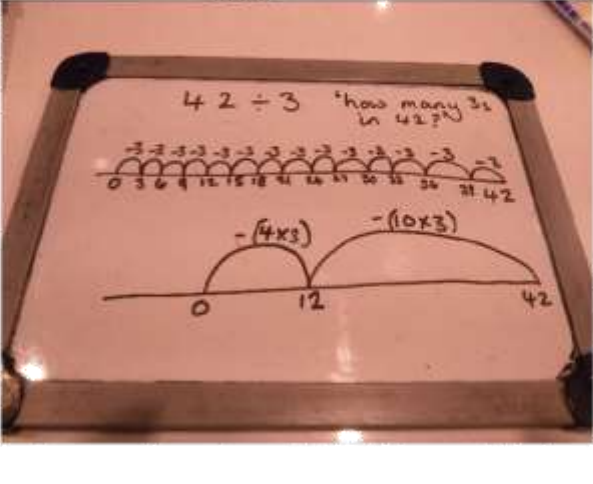
Multiplication – Year 6		
	Teaching strategies	Concrete/Visual resources
✓ <i>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</i>	✓ use strategies for previous years to support those who cannot already use formal methods	
✓ <i>solve problems involving addition, subtraction, multiplication and division</i>	✓ select strategies from those previously learnt to best fit the problem	
✓ <i>identify common factors, common multiples and prime numbers</i>	✓ use arrays and multilink to identify factors, multiples and prime numbers	See year 5 strategies

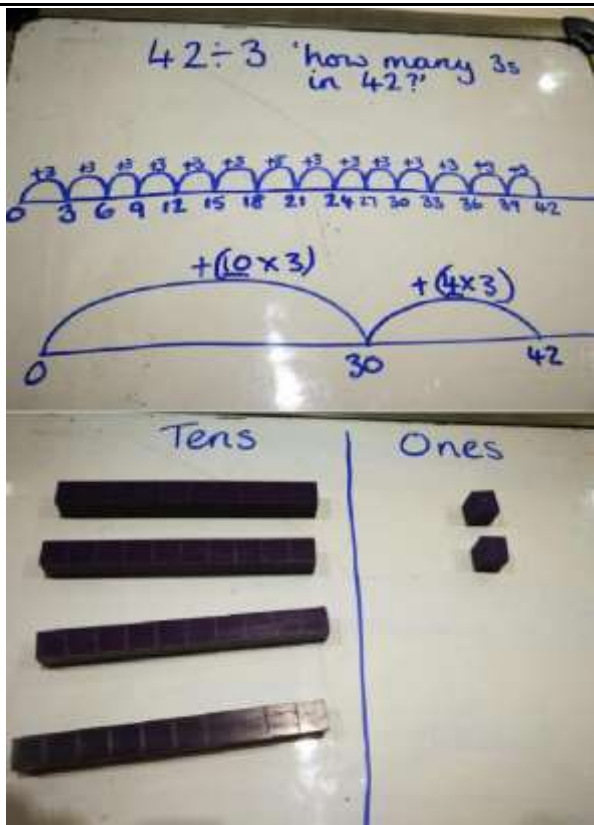
	Teaching strategies	Concrete/Visual resources
✓ <i>To solve problems involving halving and sharing</i>	✓ use concrete objects to introduce the term 'half'	 
	✓ Halving shapes	 
	✓ Use concrete objects to solve simple problems	If I share these 8 sweets with Alice, how many will we get each? 
	✓ Use hoops/bowls to share out to find answers	
	✓ Pictorial representation	 6 shared between 2 = 3

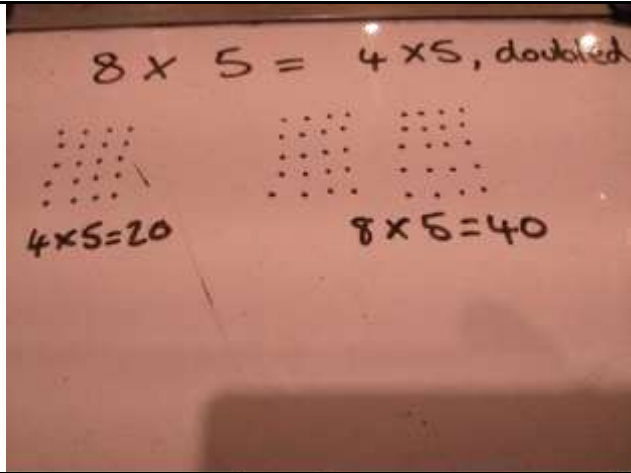
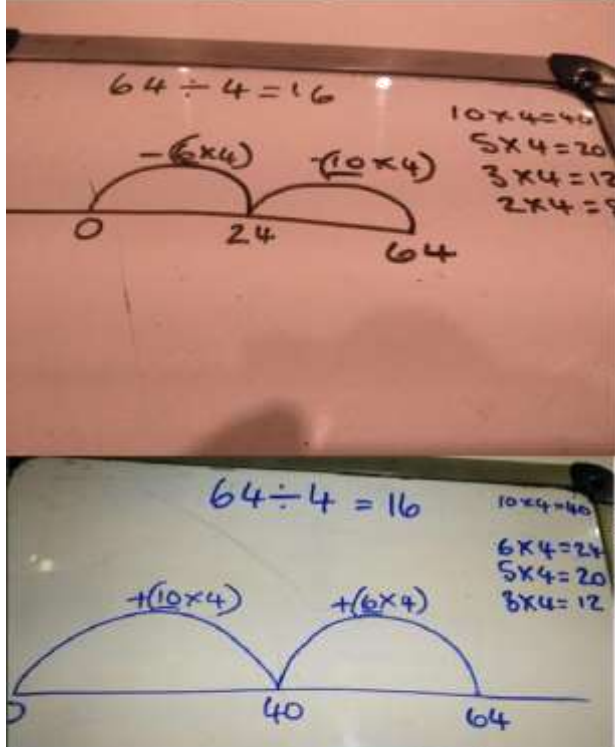
Division – Year 1			
	Teaching strategies	Concrete/Visual resources Grouping	Concrete/Visual resources Sharing
✓ <i>solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher</i>	✓ use real-life objects and drama to re-create a problem	If we put these 10 socks into pairs, how many children can wear socks? 	If I share these 8 sweets with Alice, how many will we get each? 
	✓ Use multilink to solve a simple problem and draw what you did, followed by drawing rather than recreating with concrete resources	If we put these 10 socks into pairs, how many children can wear socks? 	If I share these 8 sweets with Alice, how many will we get each? 
	✓ With support, use squared paper to draw arrays to represent a division problem		

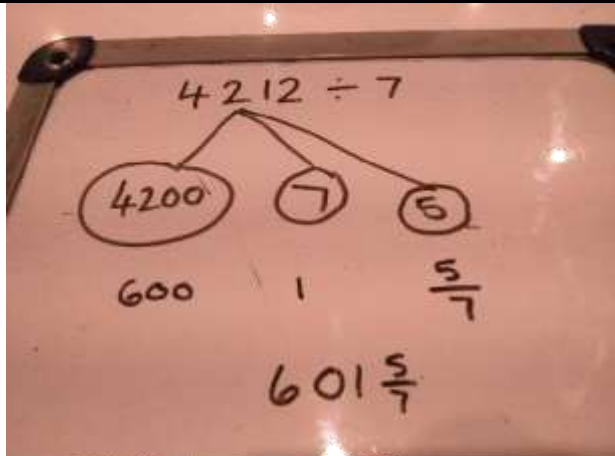
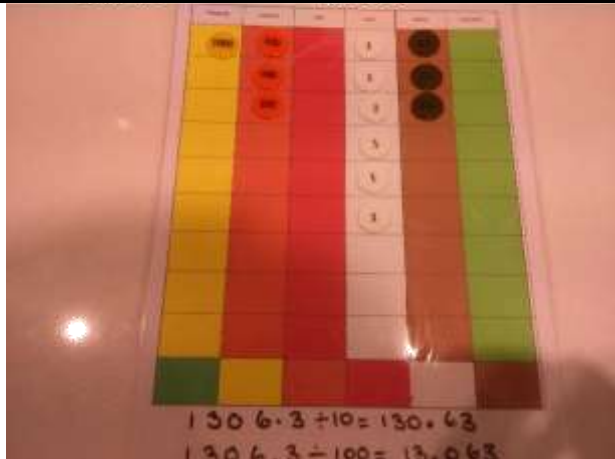
Division – Year 2			
	Teaching strategies	Concrete/Visual resources Grouping	Concrete/Visual resources Sharing
✓ <i>recall and use division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</i>	Use concrete objects to identify division facts (relate to halving for 2x table)		
	Use hoops/bowls to share out to find answers		
	✓ Play recall games		
✓ <i>calculate mathematical statements for division within the multiplication tables and write them using the division (÷) and equals (=) signs</i>	✓ Write corresponding number sentences alongside concrete division models ✓ Use a number line/counting beads to calculate division questions	 	
✓ <i>show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot</i>	✓ Use arrays to write maths sentences that make sense		

		
✓ <i>solve problems involving division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</i>	Use cubes to solve division word problems Use arrays to solve problems pictorally	Apply the strategies above

Division – Year 3	Teaching strategies	Concrete/Visual resources
✓ <i>recall and use division facts for the 3, 4 and 8 multiplication tables</i>	✓ use arrays to identify division facts	 ✓ Use a numberline and counting beads to divide using repeated subtraction with no remainders 
✓ <i>write and calculate mathematical statements for division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods</i>	✓ Use arrays and numberlines to calculate mentally ✓ Use a place value chart to aid understanding when using formal written methods ✓ Show that division can work by counting up as well as backwards	

		
✓ solve problems, including missing number problems, involving division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	✓ children are guided through the process of selecting the appropriate strategy from those listed above	

Division – Year 4		
	Teaching strategies	Concrete/Visual resources
✓ recall multiplication and division facts for multiplication tables up to 12×12	✓ identify patterns between times tables – use arrays to represent	
✓ use place value, known and derived facts to divide mentally, including: dividing by 1;	✓ Use the tool kit and represent the process on a numberline	
✓ divide two-digit and three-digit numbers by a one-digit number using formal written layout	✓ Use place value counters to represent numbers alongside formal methods	

Division – Year 5		
	Teaching strategies	Concrete/Visual resources
✓ divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context ✓	✓ No visual/concrete methods	
✓ divide numbers mentally, drawing upon known facts	✓ use the part-whole model to identify known facts	
✓ divide whole numbers and those involving decimals by 10, 100 and 1,000	✓ Use Place value grid to recognise ÷10/100	
✓ solve problems involving division, including using their knowledge of factors and multiples, squares and cubes	✓ Use bar method to help represent 2 part questions	No concrete resources
✓ solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	✓ Use bar method to identify calculations	
✓ solve problems involving multiplication and	✓ use bar method to identify calculations	

<i>division, including scaling by simple fractions and problems involving simple rates</i>		
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Division – Year 6		
	Teaching strategies	Concrete/Visual resources
✓ <i>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</i>	✓ use bar method to help understand how to interpret remainders	Children use the multiplication toolbox to support division facts $2 \times 27 = 54$ $3 \times 27 = 81$ $4 \times 27 = 108$ $5 \times 27 = 135$ $6 \times 27 = 162$ 496 divided by 27
✓ <i>solve problems involving addition, subtraction, multiplication and division</i>	✓ Use bar method to represent problems	 John has 6 times as many bookmarks as Oliver. Terry has twice as many bookmarks as Oliver. Altogether they have 162 bookmarks. How many bookmarks does Terry have?
✓ <i>identify common factors, common multiples and prime numbers</i>	✓ Use arrays to identify factors and common multiples	
✓ <i>divide numbers up to 4 digits by a two-digit number using the formal written method of short division where</i>	✓ Use visualisation to interpret the remainder ✓ Use a place value grid to discuss decimal	Jarred collects and sells gargoyle eggs. He collects 79 eggs which can be packed in boxes of 8. How many boxes will he need?

appropriate,
interpreting
remainders
according to the
context

✓

answers moving into
tenths and hundredths

✓

Use cubes to
demonstrate
remainders as fractions

