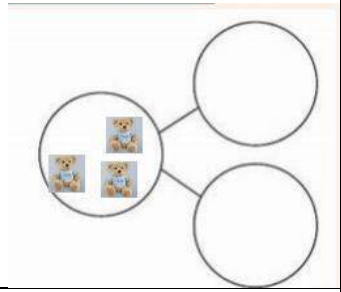
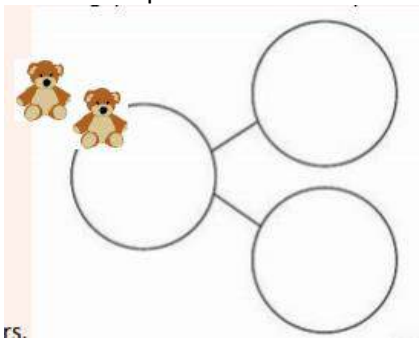
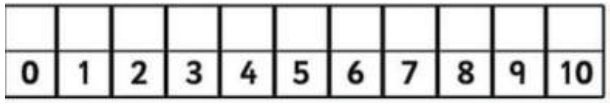
Amotherby Community Primary School
Whole School Calculation progression
Updated 3.8.23

Reception Addition			
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**
Combining two parts to make a whole: part-whole model	Part, part, whole representations. Real objects in relation to the real life problem. E.G. bears if the problem is about bears. The whole space on the part, part, whole model is empty, move parts across do not have them represented at the same time. 	Picture of the real life objects in relation to the real life problem. E.g. pictures of bears if the problem is about bears. The whole space on the part, whole model is empty, move parts across do not have them represented at the same time. 	Counters, cubes, marks to represent the real life objects of the real life problem The whole space on the part, whole model is empty, move parts across do not have them represented at the same time.
Starting at the larger number and counting on	Real objects in relation to the real life problem. E.G. bears if the problem is about bears. Alongside this, model process of putting largest number in head. We do not need to count objects again.	Number track. Point to number we are starting on and move on by putting finger in each box.  	Place the larger number in head with numbers to 10.

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Number facts within 10	Use objects to demonstrate facts within ten. For example, 3 cars in a car park, 7 cars out of the car park.		Use variety of mathematical resources to represent facts within ten. Tens frames Counters Numicon Cubes
Number sense	Represent amounts in different ways using: • Finger gnosis • All of the same objects • Lots of different objects to represent specific amounts,(e.g. 1 cow, 2pigs and 1 egg to represent 4.) • Different representations of same amount e.g. 4 eggs, 4 pigs, 4 strawberries etc.	Pictures to represent different amounts. • All of the same pictures • Lots of different pictures to represent specific amount, e.g. 1 cow, 2pigs and 1 egg to represent 4 • Different representations of same amount e.g. 4 eggs, 4 pigs, 4 strawberries etc. • Marks to represent amounts, dashes, dots, shapes etc.	

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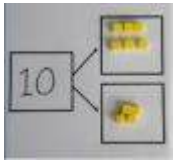
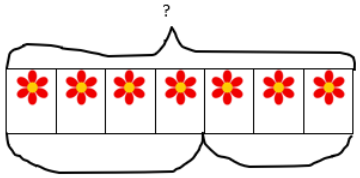
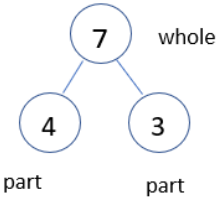
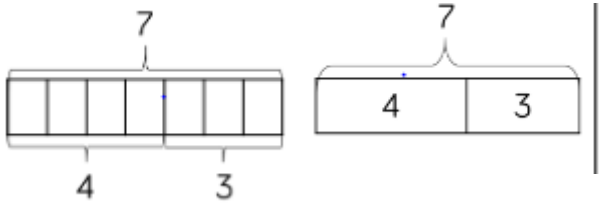
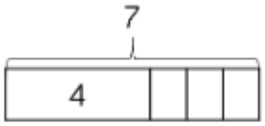
	Year 1 Addition		
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**
Combining two parts to make a whole: part-whole model	Combining two parts to make a whole: part- whole model.  Use cubes to add two numbers together as a group or in a bar.  	Use pictures to add two numbers together as a group or in a bar.    	8 = 5 + 3 5 + 3 = 8  Use the part part whole diagram as shown above to move into the abstract. Include missing number questions to support varied fluency: 8 = ? + 3 5 + ? = 8

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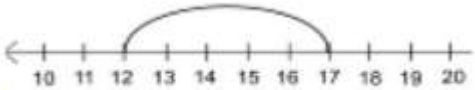
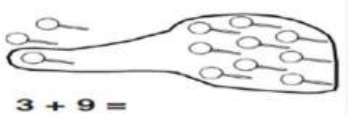
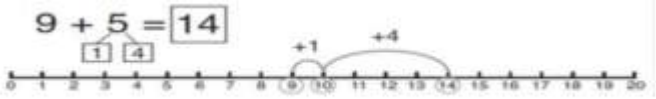
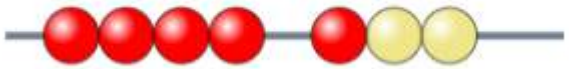
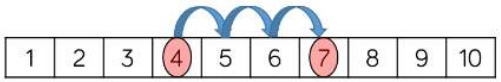
Starting at the bigger number and counting on	Starting at the bigger number and counting on  Start with the larger number on the bead string and then count on the smaller number 1 by 1 to find the answer.	 12 + 5 = 17 Start at the larger number on the number line and count on in ones or in one jump to find the answer	5 + 12 = 17 Place the larger number in your head and count on the smaller number to find your answer.
Regrouping to make 10. *This is an essential skill for column addition later.*	 6 + 5 = 11  Start with the bigger number and use the smaller number to make 10. Use ten frames.	 3 + 9 = Use pictures or a number line. Regroup or partition the smaller number using the part, part whole model to make 10. 	7 + 4= 11 If I am at seven, how many more do I need to make 10? How many more do I add on now?
Represent & use number bonds and related subtraction facts within 20			Include missing number questions: **8 = ? + 3** **5 + ? = 8** Emphasis should be on the language '1 more than 5 is equal to 6.' '2 more than 5 is 7.' '8 is 3 more than 5.'

Amotherby Community Primary School
Whole School Calculation progression
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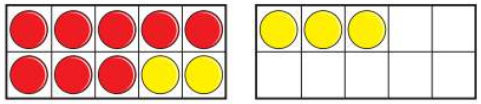
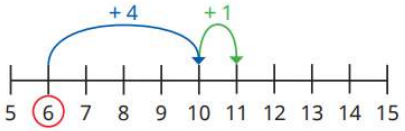
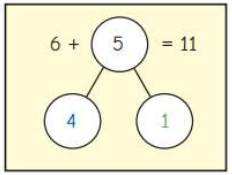
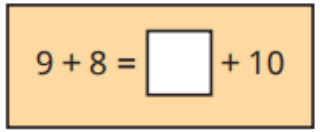
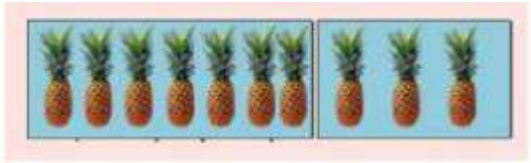
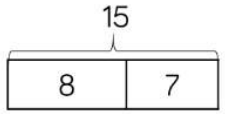
Year 2 Addition

Objective/ Strategy	Concrete	Pictorial	Abstract
Add by making 10	 Counters and tens frames 8 + 5 = 10 + 3	 Use representations for base 10 	
Bar model	 3 + 4 = 7	 7 + 3 = 10	 8 + 7 = 15

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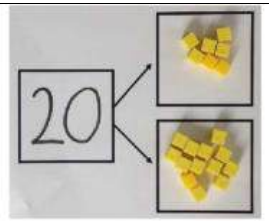
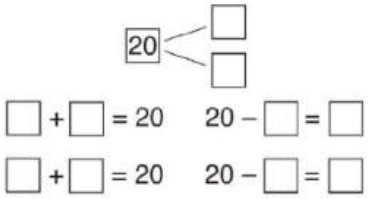
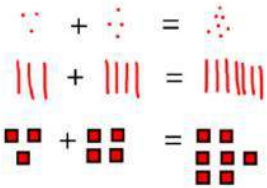
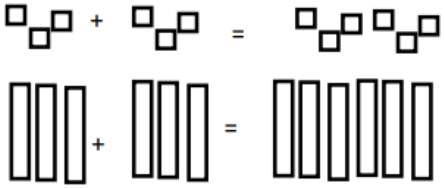
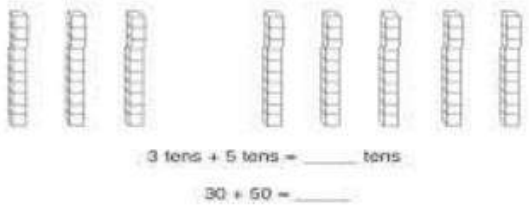
Part, part, whole	 Children explore ways of making numbers within 20		Explore commutativity of addition by swapping the addends to build a fact family. Explore the concept of the inverse relationship of addition and subtractions and use this to check calculations. □ + 1 = 16 16 − 1 = □ 1 + □ = 16 16 − □ = 1
Adding multiples of ten	 Model using base 10 and bead strings	 Children draw representations of H,T and O	20 + 30 = 50 70 = 50 + 20 40 + □ = 60
Using known facts	 50= 30+20		3 + 4 = 7 *leads to* 30 + 40 = 70 *leads to* 300 + 400 = 700

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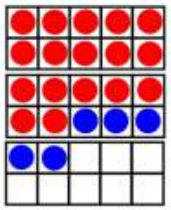
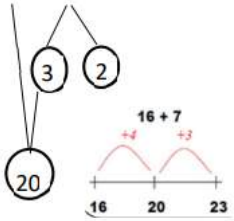
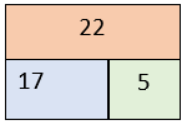
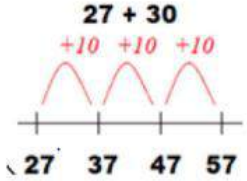
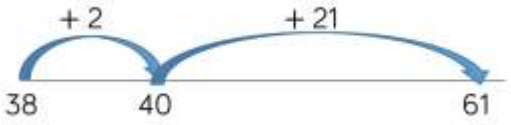
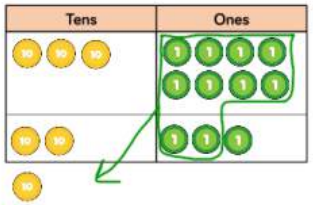
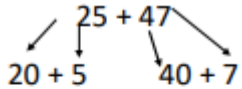
Add a two digit number and ones	 17 + 5 = 22	Use ten frame to make 'magic ten. Children explore the pattern. 17 + 5 = 22 27 + 5 = 32	17 + 5 = 22  Use part part whole and number line to model.	Explore related facts 17 + 5 = 22 5 + 17 = 22 22—17 = 5 22—5 = 17  Lead into recording in column format, to reinforce place value and prepare children for formal written methods with larger values.
Add a 2 digit number and tens	 25 + 10 = 35 Explore that the ones digit does not change		27 + 10 = 37 27 + 20 = 47 27 + □ = 57
Add 2 2-digit numbers	 Model using dienes , place value counters and numicon	 	 20 + 40 = 60 5+ 7 =12 60 + 12 = 72 Lead into recording in column format, to reinforce place value and prepare children

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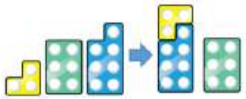
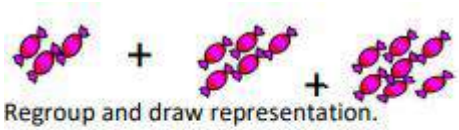
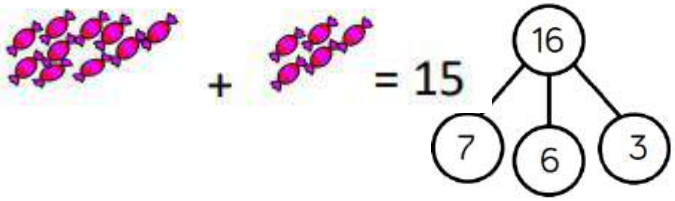
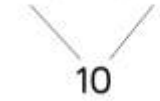
			for formal written methods with larger values.
Add three 1-digit numbers	 Children should be encouraged to look for number bonds to 10 or doubles to add the numbers more efficiently.	 Regroup and draw representation. 	$7 + 6 + 3 = 16$ 

Year 3 Addition			
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**

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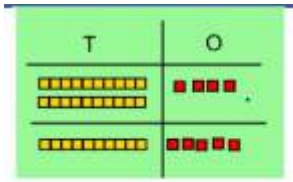
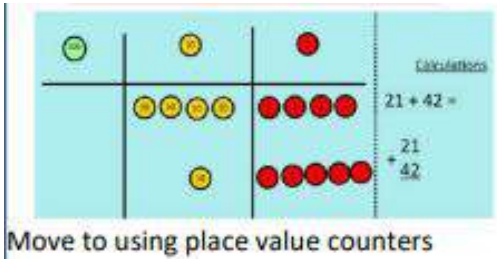
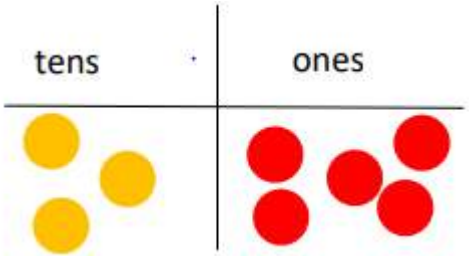
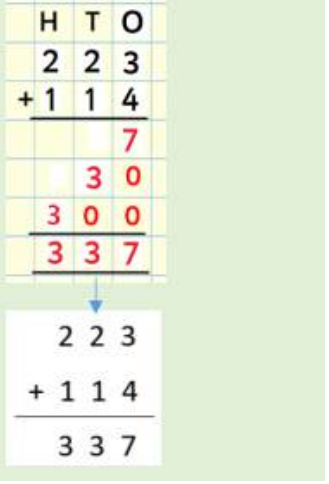
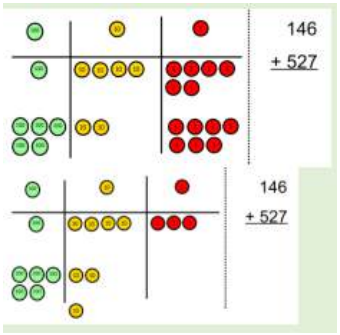
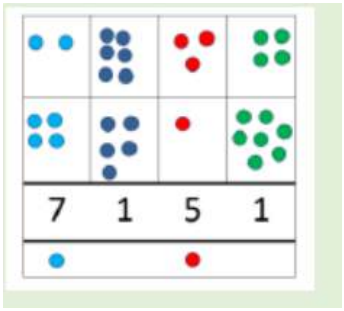
<table>
<tr>
<td>Column Addition— no regrouping (friendly numbers)</td>
<td>


Dienes or numicon
Add together the ones first, then the tens.


Move to using place value counters
</td>
<td>
Children move to drawing the counters using a tens and one frame.


</td>
<td>
Add the ones first, then the tens, then the hundreds.


Showing expanded alongside for reinforcing place value
</td>
</tr>
<tr>
<td>Column Addition with regrouping.</td>
<td>
Make both numbers on a place value grid


Add up the ones and exchange 10 ones for one 10.
Add up the rest of the columns, exchanging the 10 counters from one column for the next place value column until every column has been added.
</td>
<td>
Children can draw a pictorial representation of the grid to further support their understanding, carrying the ten underneath the line.


</td>
<td>
Children start with expanded method for addition. (Base 10/ counters used alongside primarily).
</td>
</tr>
</table>

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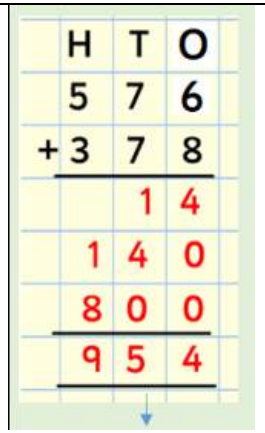
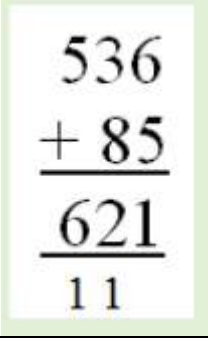
	This can also be done with Base 10 to help children clearly see that 10 ones equal 1 ten and 10 tens equal 100. As children move on to decimals, money and decimal place value counters can be used to support learning.		 Start by partitioning the numbers before moving on to clearly show the exchange below the addition. 

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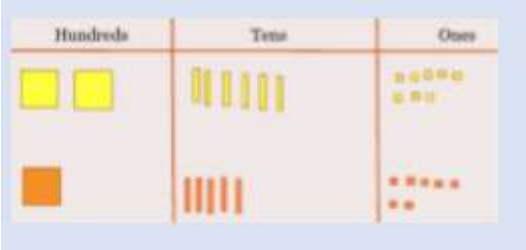
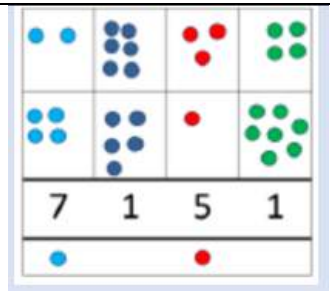
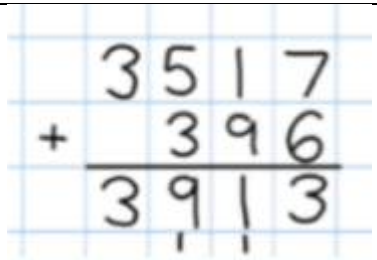
Year 4 Addition

Objective/ Strategy	Concrete	Pictorial	Abstract
Add numbers with up to 4 digits	Children continue to use dienes or place value counters to add, exchanging ten ones for a ten and ten tens for a hundred and ten hundreds for a thousand. 	 Draw representations using a place value grid	 Continue from previous work to carry hundreds as well as tens. Relate to money and measures.

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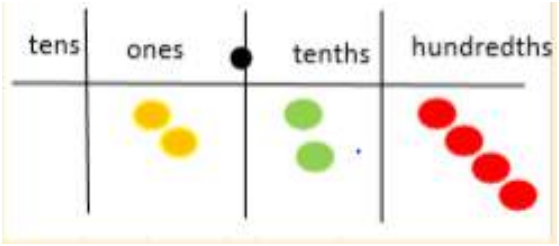
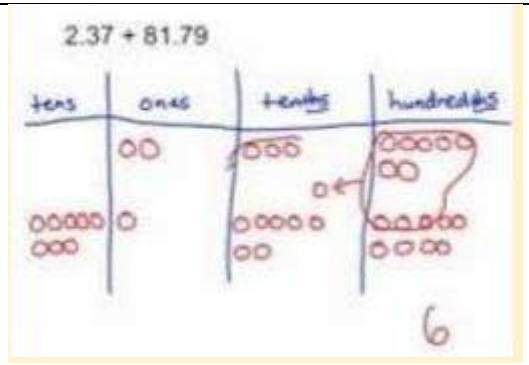
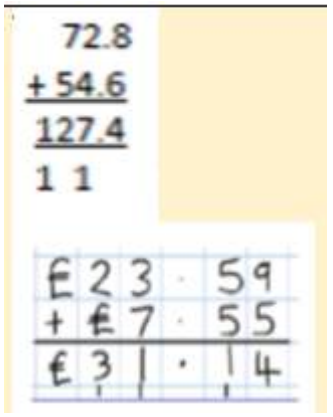
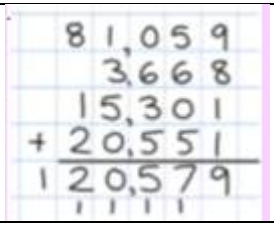
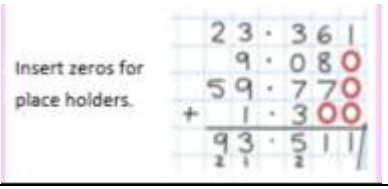
Whole School Calculation progression
Updated 3.8.23

Year 5 Addition

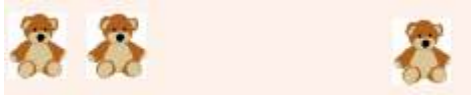
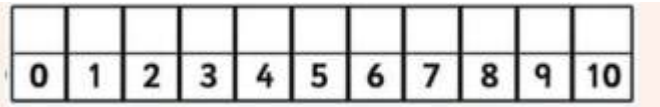
Objective/ Strategy	Concrete	Pictorial	Abstract
add numbers with more than 4 digits Add decimals with 2 decimal places, including money	Introduce decimal place value counters and model exchange for addition 		

Year 6 Addition

Objective/ Strategy	Concrete	Pictorial	Abstract
Add several numbers of increasing complexity Including adding money, measure			

and decimals with different numbers of decimals points			

Reception Subtraction

Objective/ Strategy	Concrete	Pictorial	Abstract
Taking away ones	Real objects in relation to the real life problem. E.G. bears if the problem is about bears. Physically take the objects away. 	Pictures of the real life objects in relation to the real life problem. E.g. pictures of bears if the problem is about bears. Move pictures to physically take away.  Cross out pictures to take away.  Make marks to represent real life pictures and cross these out	Model language using stem sentences e.g. 6 take away 2 equals 4. Calculations are written alongside this stem sentence but there is no expectation that children are writing their own calculations or responding to number sentences.
Counting back	Real objects in relation to the real life problem. E.G. bears if the problem is about bears. Alongside this model the process of putting the first number in head and counting back using fingers.	Number track. Point to number we are starting on and move back by putting finger in each box. 	Place the first number in head and count back within numbers to 10.

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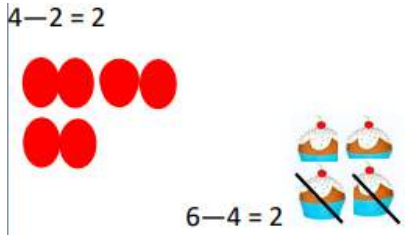
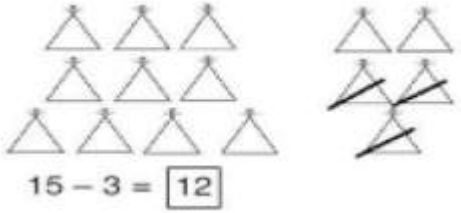
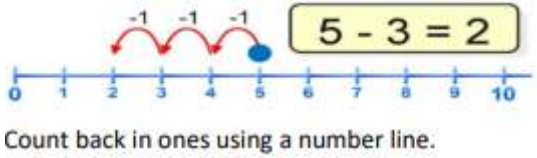
Compare amounts	Compare two sets of groups using language of fewer, least, most and more.	Compare two sets of picture of groups using language fewer, least, more, most.	Discuss that 5 is more than 2, 6 is fewer than 10 etc. using appropriate language.
Equals	Model that two sets of same objects are equal amounts. Model that two set of different objects are equal amounts. Model that two sets of mixture of objects are equal amounts.	Model that two sets of pictures of real objects are equal amounts. Model that two pictures of sets of different objects are equal amounts. Model that two pictures of a mixture of objects are equal amounts. Use two sets of pictures using marks, crosses dots etc. to represent equal amounts.	Introduce equals = sign, comparing amounts, knowing when they are equal Numbers at sides of equals sign to represent equal amounts. e.g. 5=00000
Year 1 Subtraction			
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**
Taking away ones	Use physical objects, counters , cubes etc to show how objects can be taken away. 	Cross out drawn objects to show what has been taken away. 	7—4 = 3 16—9 = 7
Counting back	Move objects away from the group, counting backwards. 	 Count back in ones using a number line.	Put 13 in your head, count back 4. What number are you at?

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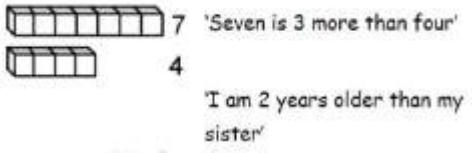
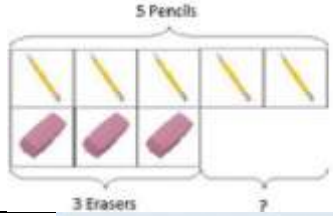
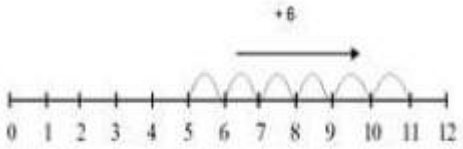
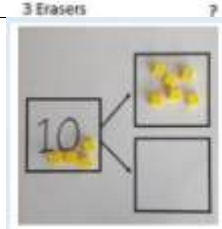
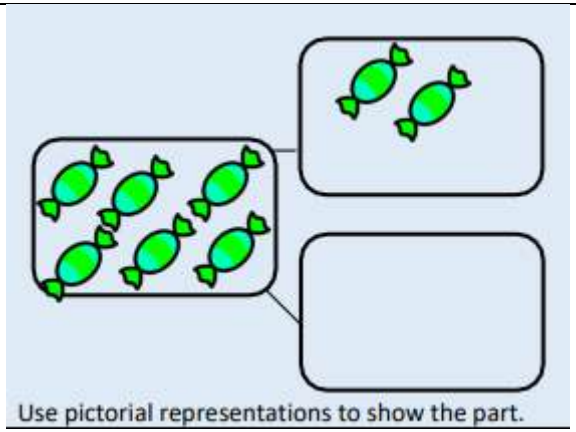
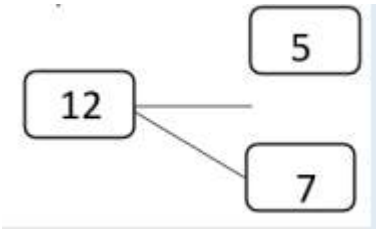
	 Move the beads along the bead string as you count backwards.		
Finding the difference	Compare objects and amounts  	Count on using a number line to find the difference. 	Hannah has12 sweets and her sister has 5. How many more does Hannah have than her sister.?
Represent and use number bonds and related subtraction facts within 20 Part Whole model	 Link to addition. Use PPW model to model the inverse. If 10 is the whole and 6 is one of the parts, what is the other part? 10—6 = 4		Move to using numbers within the part whole model.  Include missing number problems: 12 - ? = 5 7 = 12 - ?

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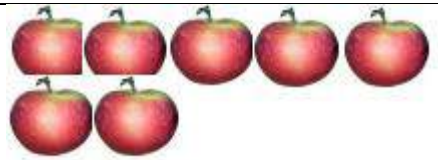
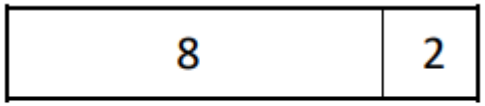
<table>
<tr><td>Make 10</td><td>14—9
 
Make 14 on the ten frame. Take 4 away to make ten, then take one more away so that you have taken 5.</td><td> 
13—7
Jump back 3 first, then another 4. Use ten as the stopping point.</td><td>16—8
How many do we take off first to get to 10?
How many left to take off?</td></tr>
<tr><td>Bar model Including the inverse operations.</td><td> 
5 - 2 = 3</td><td>  </td><td> 
10 = 8 + 2
10 = 2 + 8
10—2 = 8
10—8 = 2</td></tr>
<tr><td colspan="4">Year 2 Subtraction</td></tr>
<tr><td>Objective/ Strategy</td><td>Concrete</td><td>Pictorial</td><td>Abstract</td></tr>
</table>

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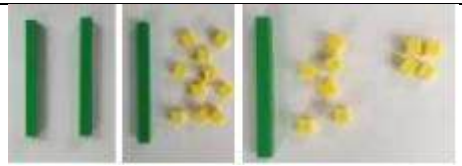
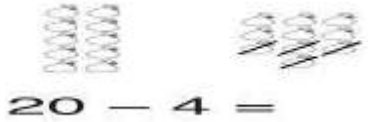
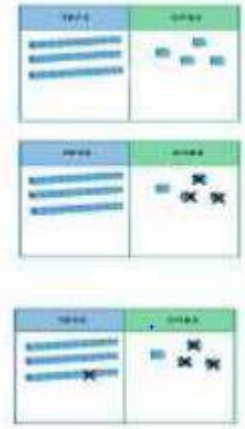
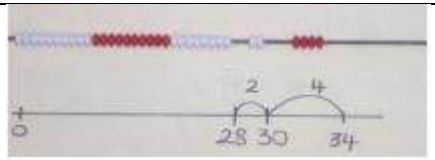
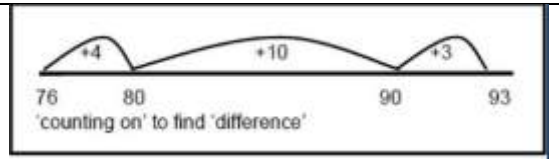
Regroup a ten into ten ones	 Use a PV chart to show how to change a ten into ten ones, use the term 'take and make'		**20—4 = 16**
Partitioning to subtract without regrouping. 'Friendly numbers'	34—13 = 21 Use Dienes to show how to partition the number when subtracting without regrouping. 	Children draw representations of Dienes and cross off.  43—21 = 22	**43—21 = 22**
Make ten strategy Progression should be crossing one ten, crossing more than one ten, crossing the hundreds.	 34—28 Use a bead bar or bead strings to model counting to next ten and the rest	 Use a number line to count on to next ten and then the rest.	**93—76 = 17**
Year 3 subtraction			

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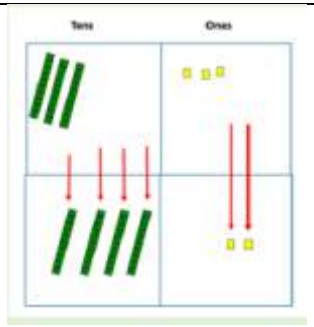
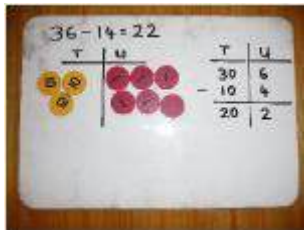
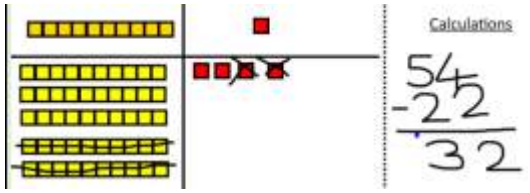
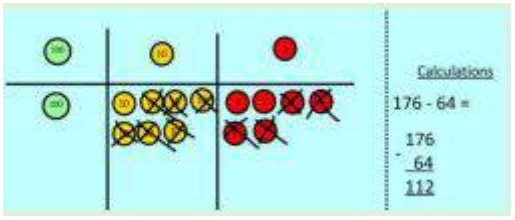
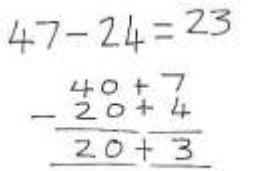
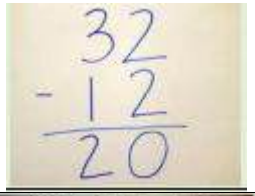
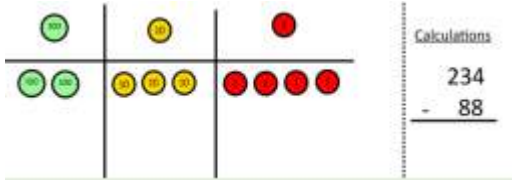
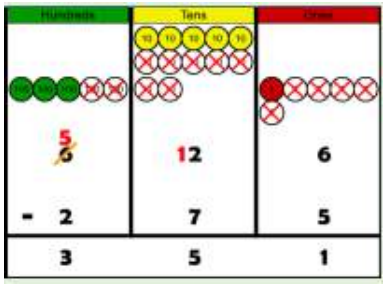
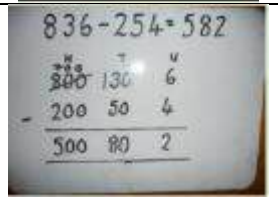
Objective/ Strategy	Concrete	Pictorial	Abstract
Column subtraction without regrouping (friendly numbers)	 Use Base 10 to make the bigger number then take the smaller number away. Show how you partition numbers to subtract. Again make the larger number first. 	 Draw the Base 10 or place value counters alongside the written calculation to help to show working. 	 Intermediate step may be needed to lead to clear subtraction understanding. This will lead to a clear written column subtraction. 
Column subtraction with regrouping	Use Base 10 to start with before moving on to place value counters. Start with one exchange before moving onto subtractions with 2 exchanges. Make the larger number with the place value counters. 	 Draw the counters onto a place value grid and show what you have taken away by crossing the counters out as well as clearly showing the exchanges you make. When confident, children can find their own way to record the exchange/regrouping. Just writing the numbers as shown here shows that the child	 Children can start their formal written method by partitioning the number into clear place value columns.

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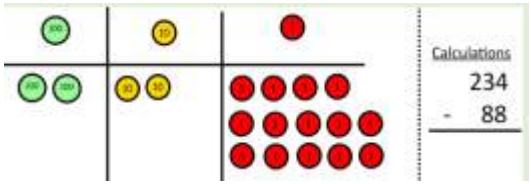
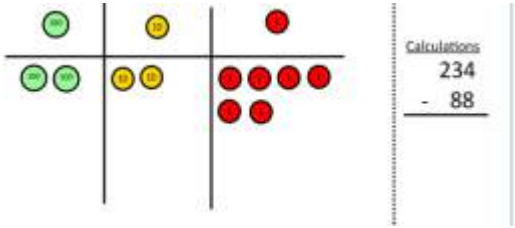
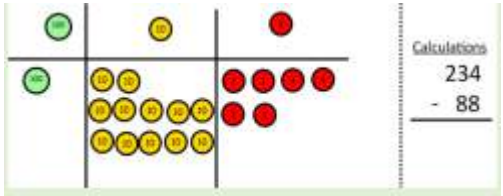
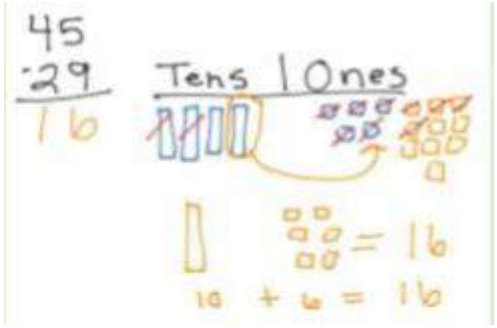
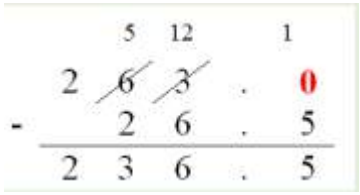
	Start with the ones, can I take away 8 from 4 easily? I need to exchange one of my tens for ten ones  Now I can subtract my ones.  Now look at the tens, can I take away 8 tens easily? I need to exchange one hundred for ten tens.  Now I can take away eight tens and complete my subtraction	 understands the method and knows when to exchange/regroup. 	 Moving forward the children use a more compact method. This will lead to an understanding of subtracting any number including decimals. 

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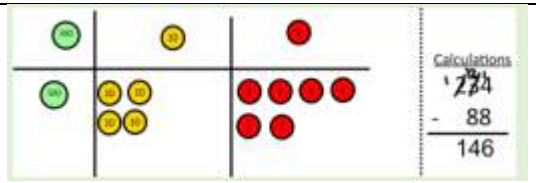
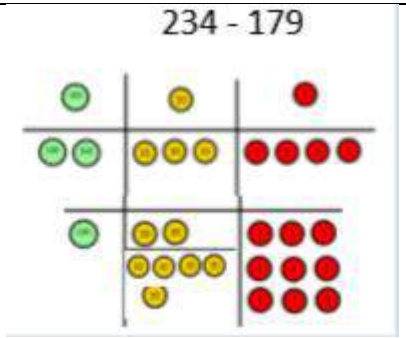
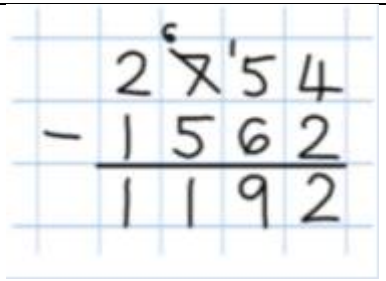
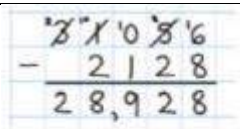
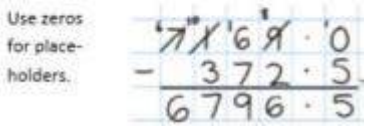
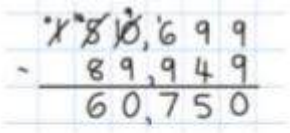
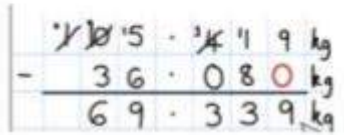
	 Show children how the concrete method links to the written method alongside your working. Cross out the numbers when exchanging and show where we write our new amount.		
Year 4 subtraction			
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**
Subtracting tens and ones Y4 subtract with up to 4 digits Introduce decimals subtraction through the context of money	 Model process of exchange using Numicon, base ten and then move to place value counters.	Children to draw place value counters and show their exchange – see Y3.	
Year 5 subtraction			
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**

subtract with at least 4 digits, including money and measures Subtract with decimal values, including mixtures of integers and decimals and aligning the decimal	As Year 4	Children to draw place value counters and show their exchange – see Y3.	 
Year 6 subtraction			
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**
Y6 – subtract with increasingly large and more complex numbers and decimal values	As Year 5, if required	As Year 5, if required	 

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	Reception Multiplication		
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**
Doubling	Real objects in relation to the real life problem. E.G. use bears if the problem is about bears. Double 2 is: 	Pictures of Real objects in relation to the real life problem. E.G. use bears if the problem is about bears. Double 2 is: 	Verbally model sentences *"double 2 is 2 plus 2" "two and two is four"* etc. Children to respond quicky to questions such as *'What is double 2?'*
Counting in 2s, 5s, 10s.	Count everyday objects that come in amounts. Socks, fingers, wellies, packs of crayons etc. 		Counting forwards and backwards in 2s 5s and 10s reciting sequence.

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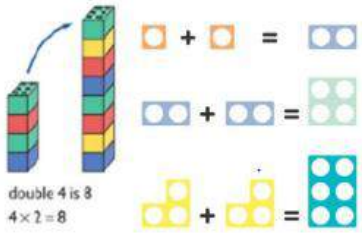
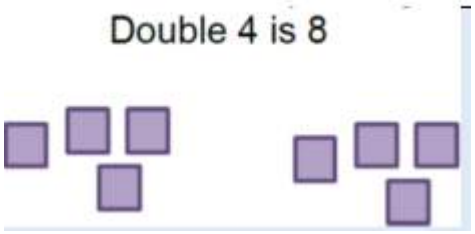
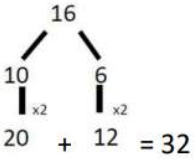
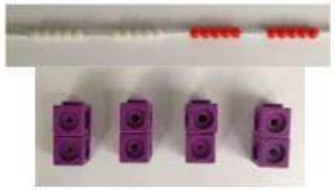
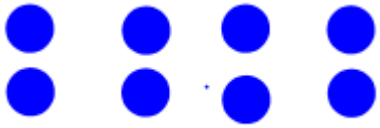
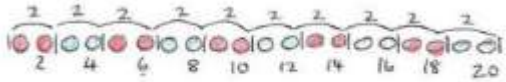
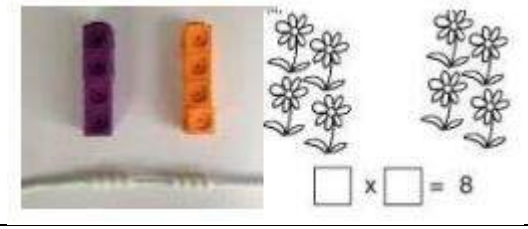
Year 1 Multiplication			
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**
Doubling	Use practical activities using manipultives including cubes and Numicon to demonstrate doubling 	Draw pictures to show how to double numbers 	Partition a number and then double each part before recombining it back together. 
Counting in multiples (2s, 5s, 10s)	Count the groups as children are skip counting, children may use their fingers as they are skip counting. 	 Children make representations to show counting in multiples. 	Count in multiples of a number aloud. Write sequences with multiples of numbers. 2, 4, 6, 8, 10 5, 10, 15, 20, 25 , 30
Making equal groups and counting the total		Draw  to show 2 x 3 = 6 Draw and make representations	2 x 4 = 8 2 lots of 4 equals 8 4 lots of 2 equals 8

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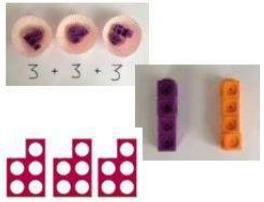
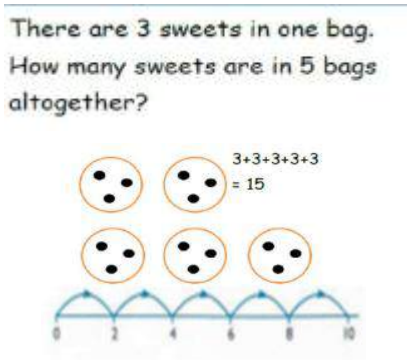
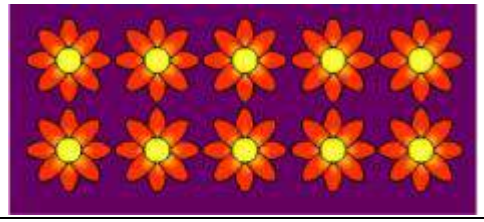
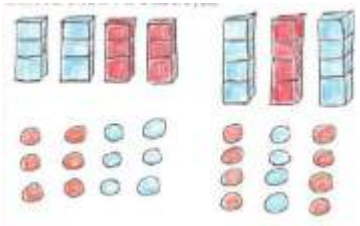
	Use manipulatives to create equal groups.		
Repeated addition	 Use different objects to add equal groups	Use pictorial including number lines to solve problems 	Write addition sentences to describe objects and pictures. 
Understanding arrays	Use objects laid out in arrays to find the answers to 2 lots 5, 3 lots of 2 etc. 	Draw representations of arrays to show understanding 	2 x 5 = 10 5 x 2 = 10 5 lots of 2 equals 10 2 lots of 5 equals 10
Year 2 Multiplication			
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**

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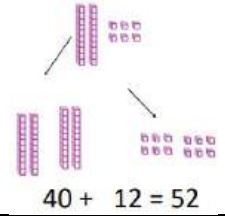
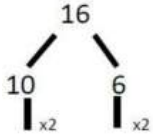
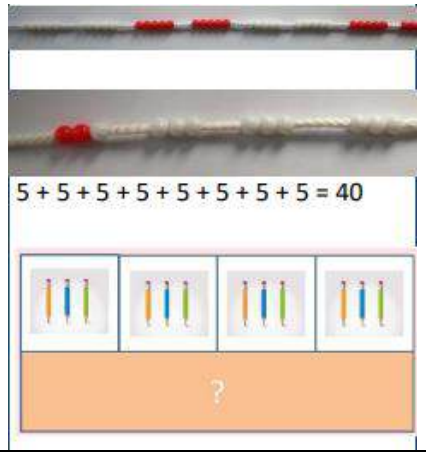
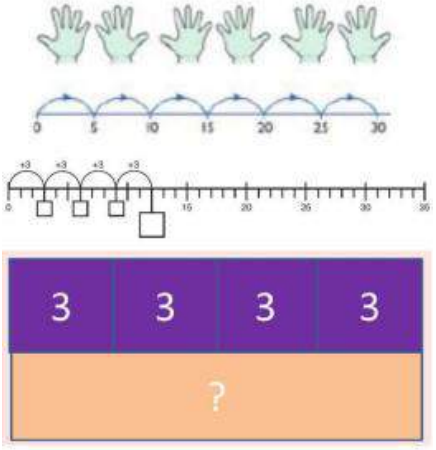
Doubling	 Model doubling using dienes and PV counters.	Draw pictures and representations to show how to double numbers.	 Partition a number and then double each part before recombining it back together.
Counting in multiples of 2, 3, 4, 5, 10 from 0 (repeated addition)	Count the groups as children are skip counting, children may use their fingers as they are skip counting. Use bar models. 	Number lines, counting sticks and bar models should be used to show representation of counting in multiples. 	Count in multiples of a number aloud. Write sequences with multiples of numbers. 0, 2, 4, 6, 8, 10 0, 3, 6, 9, 12, 15 0, 5, 10, 15, 20, 25 , 30 $4 \times 3 = \square$
Multiplication is commutative	Create arrays using counters and cubes and Numicon  Pupils should understand that an array can represent different equations and that, as multiplication is commutative, the order of the multiplication does not affect the answer.	Use representations of arrays to show different calculations and explore commutativity.	12 = 3 × 4 12 = 4 × 3

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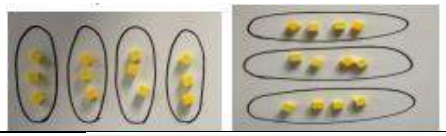
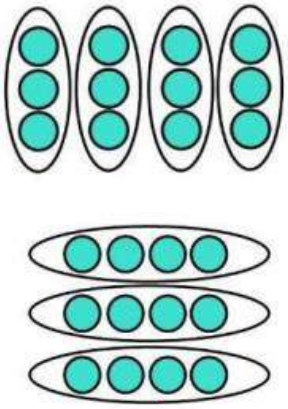
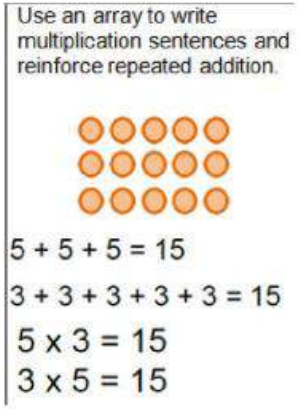
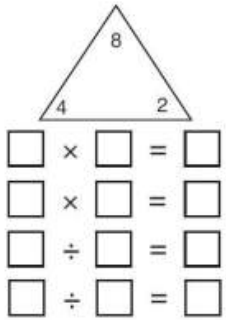
	 		
Using the Inverse. This should be taught alongside division, so pupils learn how they work alongside each other.			2 x 4 = 8 4 x 2 = 8 8 ÷ 2 = 4 8 ÷ 4 = 2 8 = 2 x 4 8 = 4 x 2 2 = 8 ÷ 4 4 = 8÷ 2 Show all 8 related fact family sentences.

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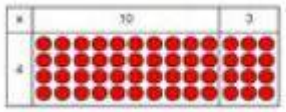
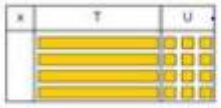
Year 3 Multiplication			
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**
Grid method, progressing to the formal method Multiply 2 digit numbers by 1 digit numbers	Show the links with arrays to first introduce the grid method.  4 rows of 10 4 rows of 3 Move onto base ten to move towards a more compact method.  4 rows of 13	Children can represent their work with place value counters in a way that they understand. They can draw the counters using colours to show different amounts or just use the circles in the different columns to show their thinking as shown below.	Start with multiplying by one digit numbers and showing the clear addition alongside the grid. x | 30 | 4 5 | **150** | **20** **150 + 20 = 170** Progress onto expanded method

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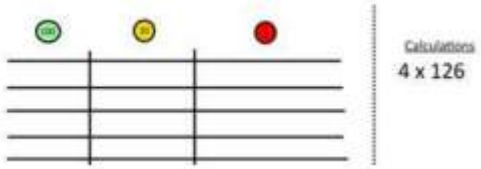
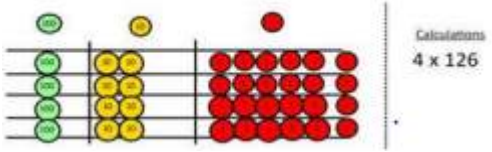
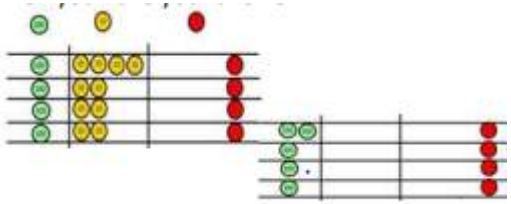
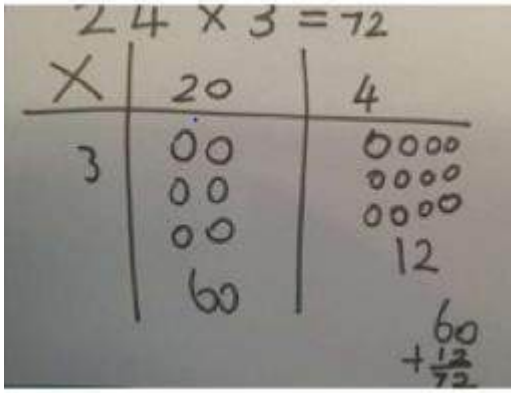
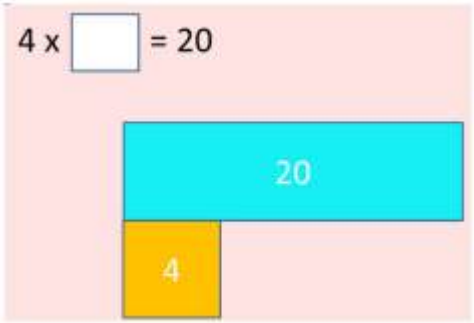
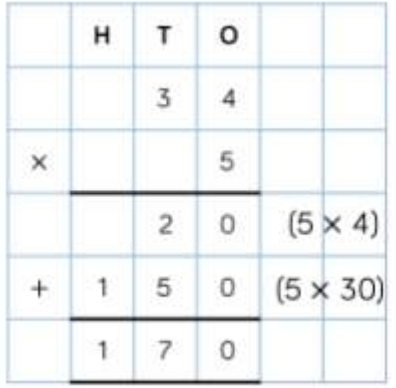
<table>
<tr>
<td></td>
<td>Move on to place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows
 

Fill each row with 126. Add up each column, starting with the ones making any exchanges needed Then you have your answer.
  </td>
<td> 

Bar model are used to explore missing numbers
 
</td>
<td> 
</td>
</tr>
<tr>
<td>Solve problems, including missing number problems,</td>
<td></td>
<td></td>
<td>Three times as high, eight times as long

? x 5 = 20
20 ÷ ? = 5

3 hats and 4 coats, how many different outfits?</td>
</tr>
</table>

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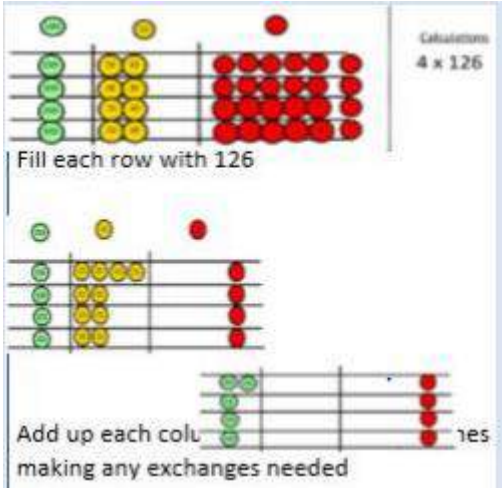
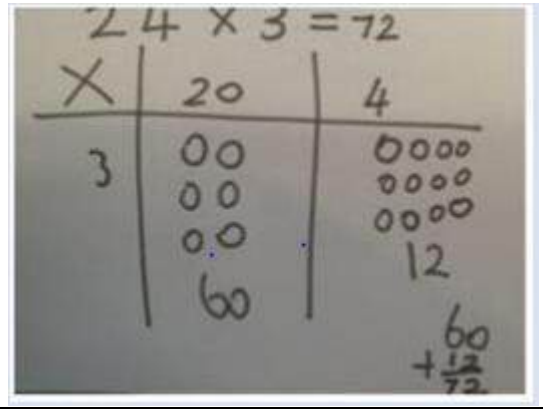
integer scaling problems,			

Year 4 Multiplication

Objective/ Strategy	Concrete	Pictorial	Abstract
Grid method recap from Y3 for 2 digit x 1 digit Move to multiplying 3 digit numbers by 1 digit (y4 expectation	Use place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows. 	Children can represent their work with place value counters in a way that they understand. They can draw the counters using colours to show different amounts or just use the circles in the different columns to show their thinking as shown below. 	Start with multiplying by one digit numbers and showing the clear addition alongside the grid. × | 30 | 5 7 | 210 | 35 210 + 35 = 245

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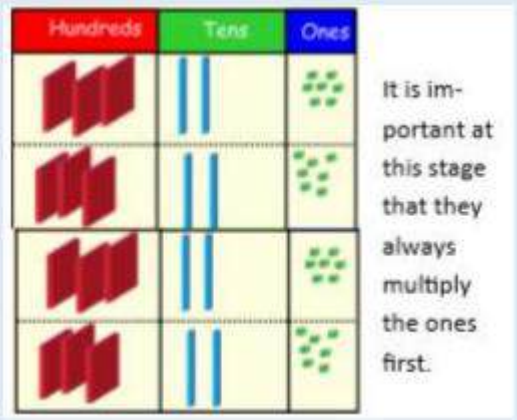
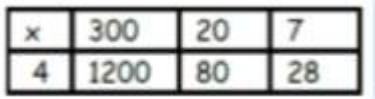
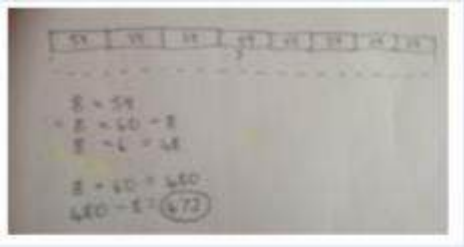
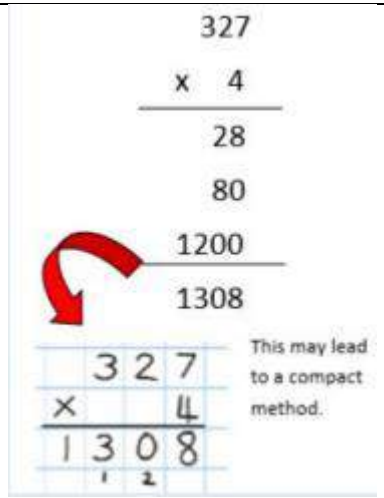
Column multiplication for 3 digits x 1 digit	Children can continue to be supported by place value counters at the stage of multiplication. This initially is done where there is no regrouping. 321 x 2 = 642  The corresponding long multiplication is modelled alongside	 The grid method may be used to show how this related to a formal written method.  Bar modelling and numbers lines can support learners when solving problems with multiplication alongside the formal written methods.	

Year 5 Multiplication			
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**

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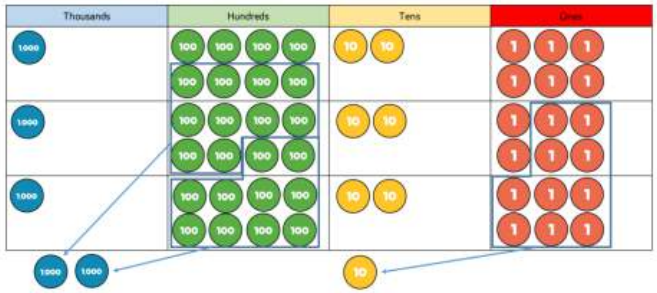
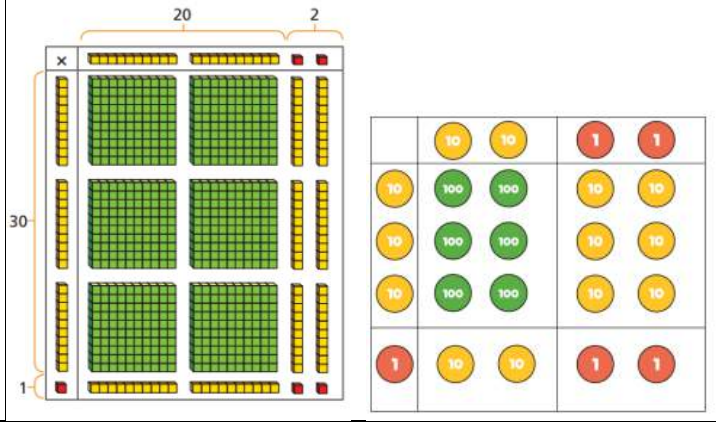
<table>
<tr>
<td>Multiply 4 digit numbers by 1 digit numbers.</td>
<td>Manipulatives may still be used with the corresponding long multiplication modelled alongside.</td>
<td> 
</td>
<td>
<table>
<tr><th></th><th>Th</th><th>H</th><th>T</th><th>O</th></tr>
<tr><td></td><td>1</td><td>8</td><td>2</td><td>6</td></tr>
<tr><td>×</td><td></td><td></td><td></td><td>3</td></tr>
<tr><td></td><td>5</td><td>4</td><td>7</td><td>8</td></tr>
</table>
2 1
</td>
</tr>
<tr>
<td>Multiply 2 digit numbers by 2 digit numbers.</td>
<td>Manipulatives may still be used with the corresponding long multiplication modelled alongside.</td>
<td>Use the area model to help children understand the size of the numbers they are using.
 
</td>
<td>
<table>
<tr><td>×</td><td>20</td><td>2</td></tr>
<tr><td>30</td><td>600</td><td>60</td></tr>
<tr><td>1</td><td>20</td><td>2</td></tr>
</table>
</td>
</tr>
</table>

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			<table><tr><th></th><th>H</th><th>T</th><th>O</th></tr><tr><td></td><td></td><td>2</td><td>2</td></tr><tr><td>×</td><td></td><td>3</td><td>1</td></tr><tr><td></td><td></td><td>2</td><td>2</td></tr><tr><td></td><td>6</td><td>6</td><td>0</td></tr><tr><td></td><td>6</td><td>8</td><td>2</td></tr></table> **22 x 1** on the first row (2 x 1= 2, then 2 x 10 = 20 so we put a 2 in the tens column) **22 x 30** on the 2nd row. Show multiplying by 10 by putting zero in ones first. 2 x 30 = 60 (put a 6 in the tens column) 20 x 30 = 600 (put a 6 in the hundreds column) Add both numbers together to calculate the product
Column multiplication for 3 digits x2 digits	Children can continue to be supported by place value counters at the stage of multiplication.	Children can continue to use the area model when multiplying 3- digits by 2-digits. 	Children should now move towards the formal written method, seeing the links with the grid method <table><tr><td>×</td><td>200</td><td>30</td><td>4</td></tr><tr><td>30</td><td>6,000</td><td>900</td><td>120</td></tr><tr><td>2</td><td>400</td><td>60</td><td>8</td></tr></table>

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			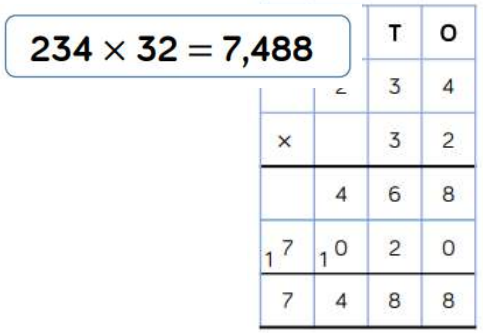
Year 6 Multiplication			
Objective/ Strategy	**Concrete**	**Pictorial**	**Abstract**
Column multiplication for 4 digits x2 digits			When multiplying 4- digits by 2-digits, children should be confident in using the formal written method. If they are still struggling with times tables, provide multiplication grids to support when they are focusing on the use of the method. Consider where exchanged digits are placed and make sure this is consistent.

Amotherby Community Primary School
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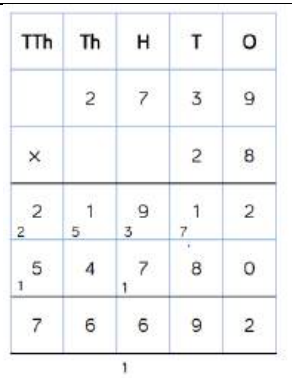
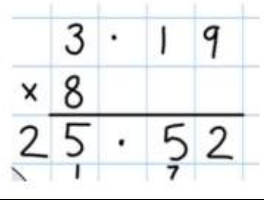
			
Multiplying decimals up to 2 decimal places by a single digit.	As year 5, if required.	As year 5, if required.	Remind children that the single digit belongs in the units column. Line up the decimal points in the question and the answer. 

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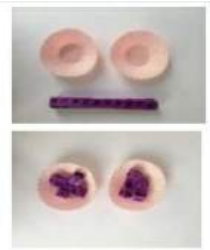
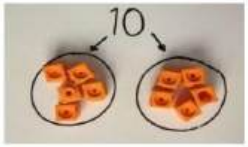
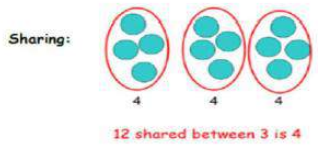
	Reception Division		
	Concrete	**Pictorial**	**Abstract**
Sharing	Real objects in relation to the real life problem. E.G. bears if the problem is about bears. Sharing equally into groups. Into two groups initially. Using strategy of moving one at a time. Use numbers that can be shared equally. Sharing equally into groups. Into two groups initially. Using strategy of moving more than one at a time. Use numbers that can be shared equally.		
	Year 1 Division		
Objective / Strategy	**Concrete**	**Pictorial**	**Abstract**
Division as sharing	  I have 10 cubes, can you share them equally in 2 groups?	Children use pictures or shapes to share quantities.  	12 shared between 3 is 4

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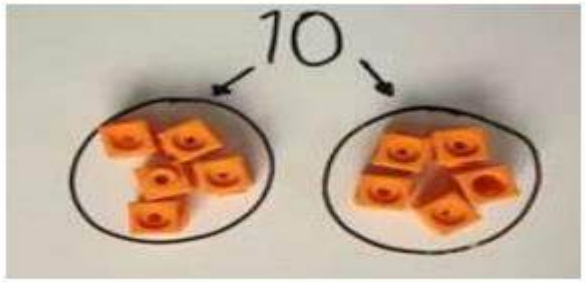
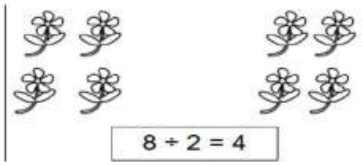
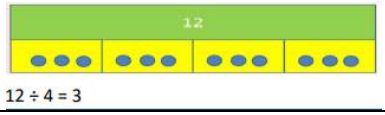
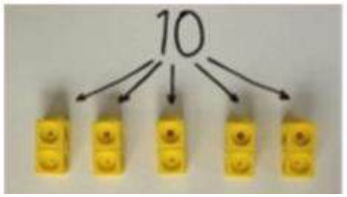
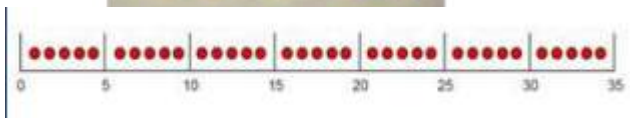
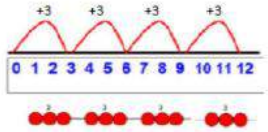
Objective / Strategy	Year 2 Division		
Division as sharing	 I have 10 cubes, can you share them equally in 2 groups?	Children use pictures or shapes to share quantities  Children use bar modelling to show and support understanding. 	12 ÷ 3 = 4
Division as grouping	Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid 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 would be within each group.	12 ÷ 3 = 4 Divide 12 into 3 groups. How many are in each group?

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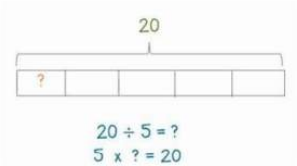
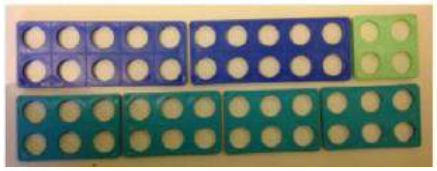
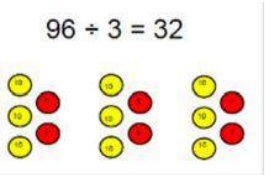
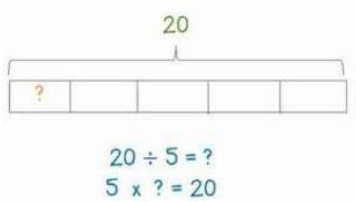
			
Division as grouping	Use cubes, counters, objects or place value counters to aid understanding.  24 divided into groups of 6 = 4 	Continue to use bar modelling to aid solving division problems. 	How many groups of 6 in 24? 24 ÷ 6 = 4

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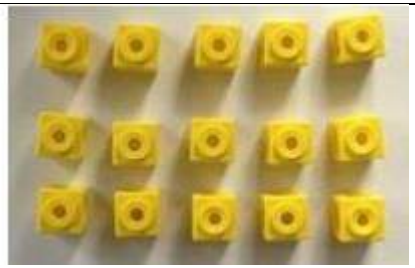
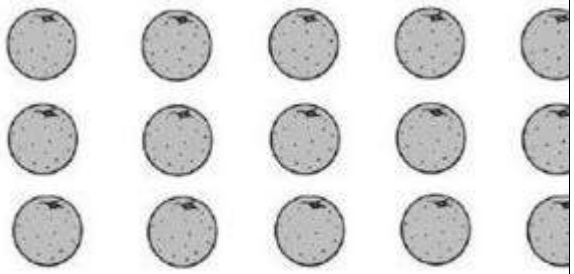
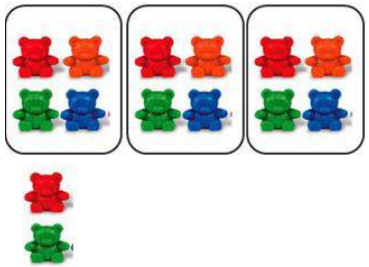
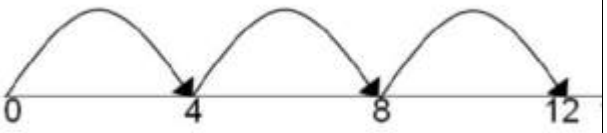
<table>
<tr>
<td>Division with arrays</td>
<td> 
Link division to multiplication by creating an array and thinking about the number sentences that can be created.
Eg 15 ÷ 3 = 5
5 x 3 = 15
15 ÷ 5 = 3
3 x 5 = 15</td>
<td>Draw an array and use lines to split the array into groups to make multiplication and division sentences.
  </td>
<td>Find the inverse of multiplication and division sentences by creating eight linking number sentences. 5 x 4 = 20

5 x 4 = 20
4 x 5 = 20
20 = 5 x 4
20 = 4 x 5
20 ÷5 = 4
20 ÷4 = 5
4 = 20 ÷5
5 = 20 ÷ 4</td>
</tr>
<tr>
<td colspan="4">Year 3 Division</td>
</tr>
<tr>
<td>Division with remainders</td>
<td>14 ÷ 3 = Divide objects between groups and see how much is left over
  </td>
<td>Jump forward in equal jumps on a number line then see how many more you need to jump to
 
find a remainder.
Draw dots and group them to divide an amount and clearly show a remainder.
  </td>
<td>Complete written divisions and show the remainder using r.
  </td>
</tr>
</table>

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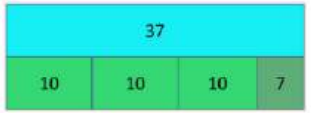
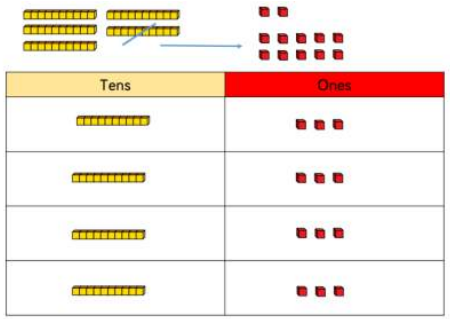
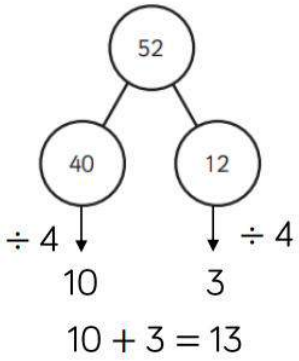
		Use bar models to show division with  remainders.	
Divide 2 digits by 1 digits	Use base 10 and counters to exchange one ten for ten ones  	 	**52 ÷ 4 = 13**
Year 4 Division			
Objective / strategy	**Concrete**	**Pictorial**	**Abstract**

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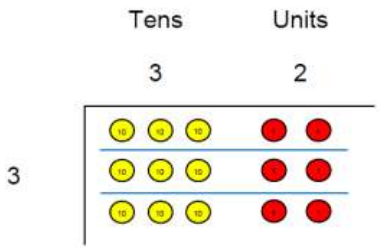
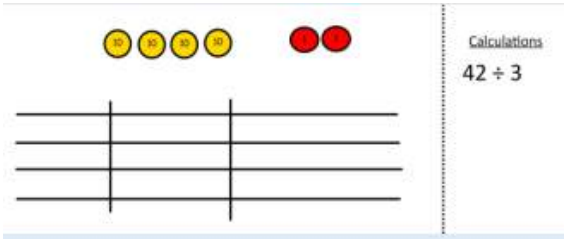
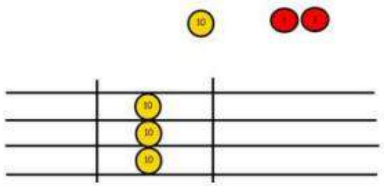
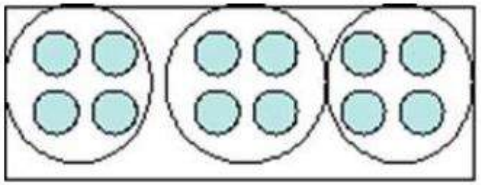
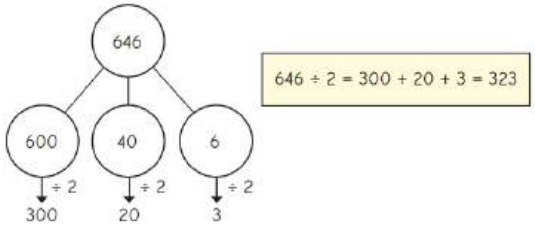
<table>
<tr>
<td>Divide at least 3 digit numbers by 1 digit.</td>
<td>


Use place value counters to divide using the bus stop method alongside


42 ÷ 3=
Start with the biggest place value, we are sharing 40 into three groups. We can put 1 ten in each group and we have 1 ten left over

</td>
<td>Pupils can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups.


Encourage them to move towards counting in multiples to divide more efficiently.


</td>
<td></td>
</tr>
</table>

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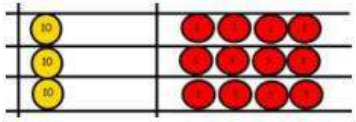
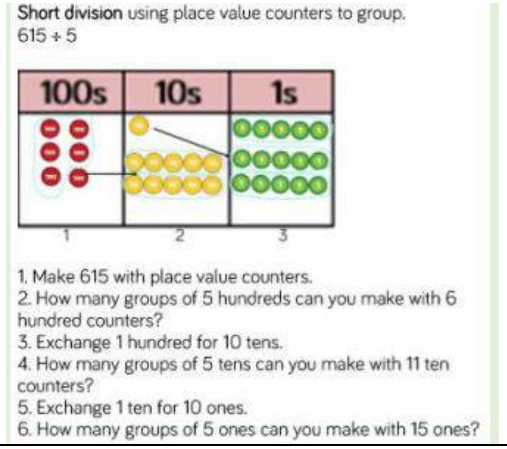
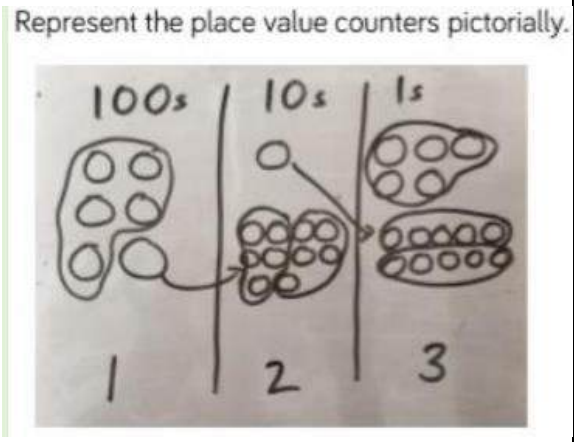
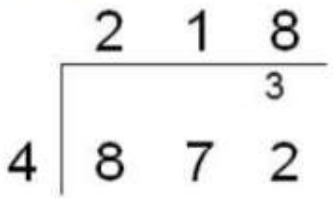
	 We exchange this ten for ten ones and then share the ones equally among the groups. We look how much in 1 group so the answer is 14.		
Year 5 Division			
Objective / strategy	**Concrete** 	**Pictorial** 	**Abstract** Begin with divisions that divide equally with no remainder. 

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			Move onto divisions with a remainder. 8 6 r 2 5 | 4 3 2 3
Year 6 Division			
Objective / strategy	**Concrete**	**Pictorial**	**Abstract**

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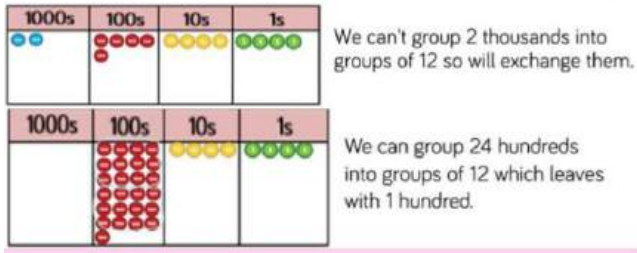
Long Division *used when dividing by numbers 12 or above.	**Long division** using place value counters 2544 ÷ 12  	Record known facts down the side of calculation, as an aid. For example: 1x 12 = 12 2 x 12 = 12 5 x 12 = 60 10 x 12 = 60	Begin with divisions that divide equally with no remainder. Move onto divisions with a remainder. Move into decimal places to divide the total accurately.