Winthorpe Primary School

Mathematics

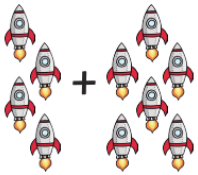
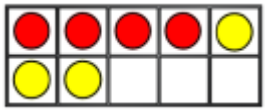
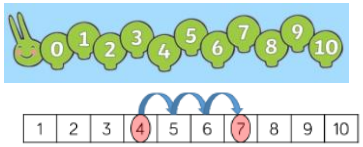
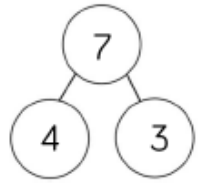
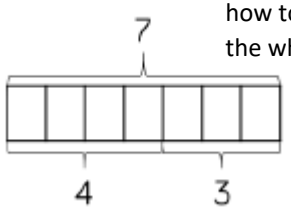
Calculations Policy

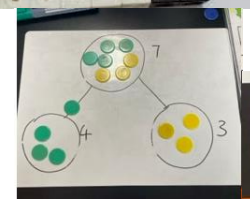
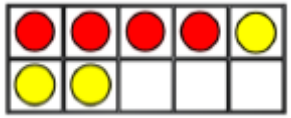
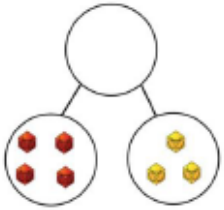
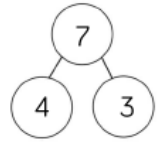
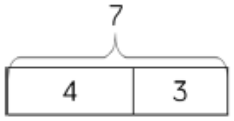
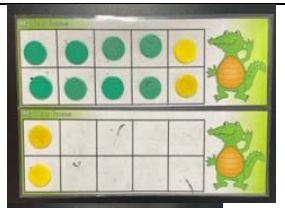
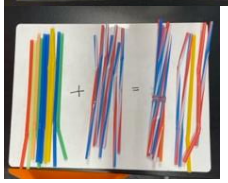
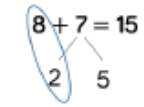
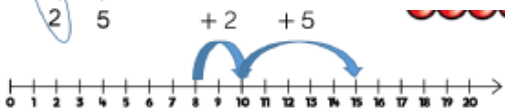
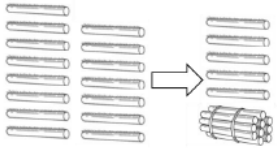
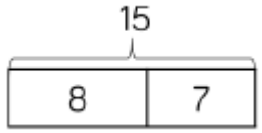
At Winthorpe, we believe that children should be introduced to the processes of calculation through practical, oral and mental activities. As children begin to understand the underlying ideas, they develop ways of recording to support their thinking and calculation methods, use particular methods that apply to special cases, and learn to interpret and use the signs and symbols involved.

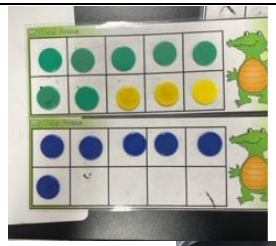
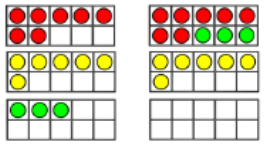
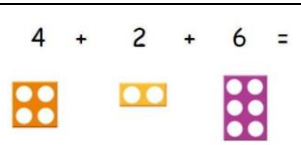
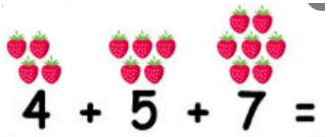
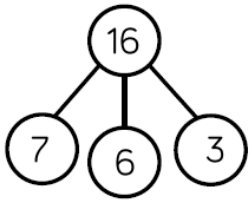
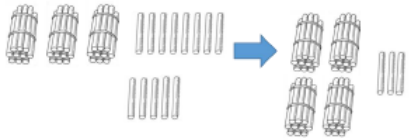
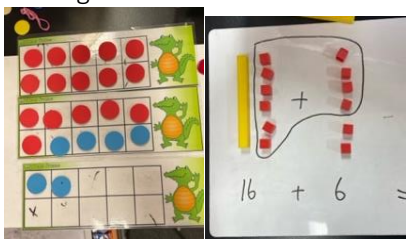
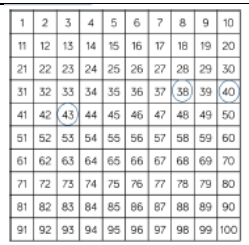
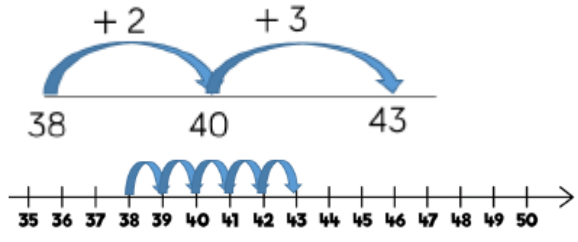
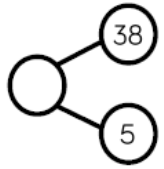
Children will explore different methods as they move through school and may be taught how to express their calculations in several different ways. Throughout the school, children will explore the four operations using concrete, pictorial and abstract concepts. It is important that children acquire secure mental methods of calculation to support the written methods and can decide when it is more appropriate for a mental or written method. By the end of Year 6, children should be able to confidently choose the most appropriate approach to solve a problem.

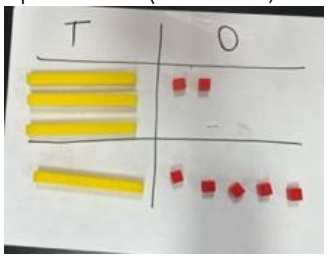
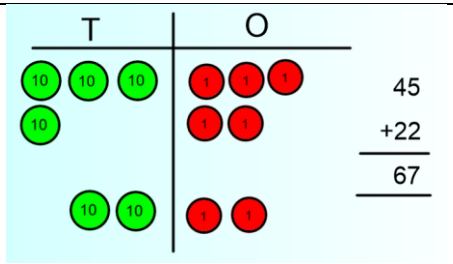
This document identifies progression in calculation strategies rather than specifying which method should be taught in a particular year group. Although a particular approach may be linked to a year group, the class teacher will use a range of strategies that best support their pupils. Children will not be made to go onto the next stage if they are not ready or confident using a previous method.

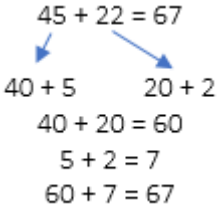
Addition

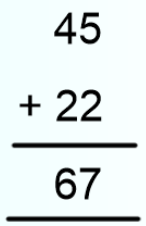
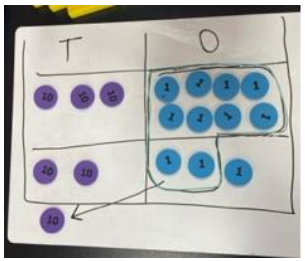
ADDITION			
EYFS			
VOCABULARY: add, more, make, total, and, one more, two more, how many…., altogether			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Knows that a group of things changes in quantity when something is added. When counting, counts one digit for one item/picture. Find the total number of items in two groups by counting all of them. Find the number that is one more than a given number. Using objects, add two single digit numbers and count on to find the answer.	   Use toys and general classroom resources to physically manipulate/group. Use specific maths resources such as cubes, Numicon ect. 	 Two groups of pictures so children can count the total.  Visual supports such as ten frames, number tracks, addition mats with pictures. 	 Use part-whole models and bar models to understand how to ‘make the whole’.  4 + 3 = 7 Children **begin** to understand a number sentence using symbols and numbers.
Mental Strategies: - Understand the value of a number - Counting forwards and backwards - Develop a mental image of the number system - Recall the number bonds to 10 Recognise an increasing number of 2-digit numbers			

ADDITION			
Year 1			
VOCABULARY: add, more, make, number bonds, total, and, one more, two more, how many more to make…?, how many more is … than …?, altogether, double, equals, is the same as, most			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Add 1-digit numbers within 10.	   Use physical objects and specific maths resources to add two numbers together.	 Children can move on to pictorial representations once they have mastered concrete representations. Use number lines/tracks and start on the larger number, before counting on.  	$4 + 3 = 7$  Children should recognise different ways of expressing addition calculations e.g. part-whole models, bar models. 
Add 1-digit and 2-digit numbers to 20 and regroup to make 10 if necessary.	  Start with the bigger number and use the smaller number to make 10. Straws can also be used to make 10.	 Use a number line to count on. Partition the smaller number to  Use pictures (straws) to easily regroup to make 10. 	 8 + 7 = 15 If I have 8, how many more do I need to make 10? How many more do I add on now?
Mental Strategies: - Understand that addition is commutative (can be carried out in any order) - Add 1- and 2-digit numbers to 20, including 0 - Double numbers up to double 10 - Recall the number bonds to 20 - Add 10 to a 1-digit number			

ADDITION			
Year 2			
VOCABULARY: add, addition, altogether, plus, more, sum, total, double, ten more, how many more to make…?, how many more is …. Than …?, equal to, exchange, inverse, column,			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Add three 1-digit numbers.	 Children should begin to look for number bonds to 10 or doubles to add the numbers efficiently. 	  Children should begin to recognise patterns and bonds to 'make 10'.  Some children may still use pictures of the items to add.	$7 + 6 + 3 = 16$  Children should recognise different ways of expressing addition calculations e.g. part-whole models, bar models.
Add 1-digit and 2-digit numbers to 100.	 Ten frames and straws support children when making 10.  Children may begin to use Base 10 which will support harder calculations later on.	 Use number square or number lines to count on. Children should recognise how many until the next 10, before working out how many they have left. 	$38 + 5 = 43$  Children should recognise different ways of expressing addition calculations e.g. part-whole models, bar models. Children should also explore related facts: 38 + 5 = 43 5 + 38 = 43 43 - 38 = 5 43 - 5 = 38

<table>
<tr>
<td>Add two 2-digit numbers to 100.</td>
<td>Using Base 10 or counters, children should line up columns (hundreds, tens and ones).
 
</td>
<td> 

After mastering concrete manipulatives, children can draw the counters to help them solve the addition.</td>
<td> 

Partition each number and use related number facts to add the tens and ones separately.
Recording addition in columns supports place value understanding and prepares for formal written methods with larger numbers. Some children may begin to do this by the end of Year 2.
 
</td>
</tr>
<tr>
<td>Add two 2-digit numbers (beginning to regroup).</td>
<td>Once children are secure without regrouping, they will begin to regroup (exchange).
 
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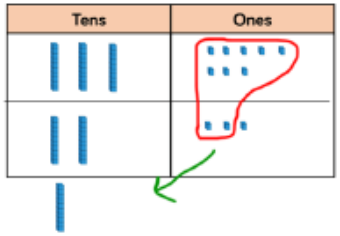
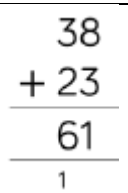
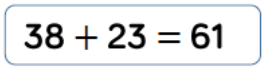
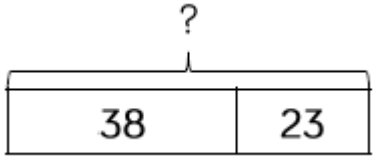
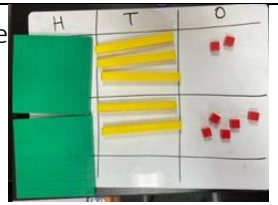
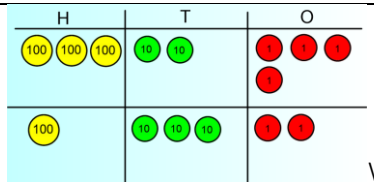
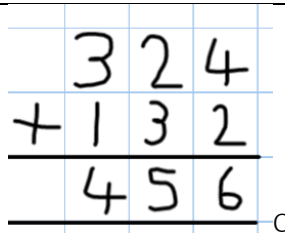
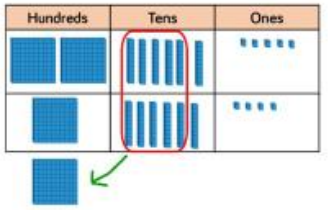
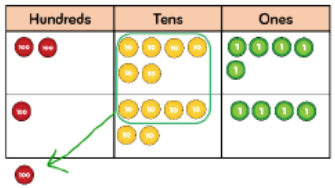
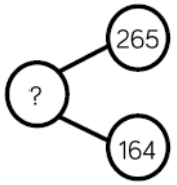
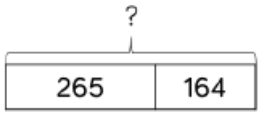
<td> 

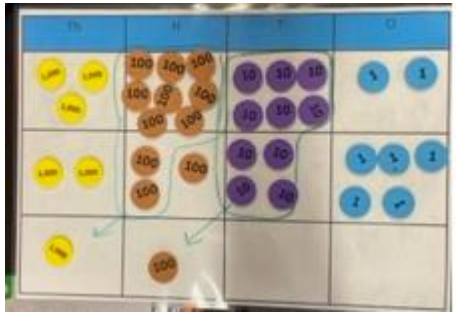
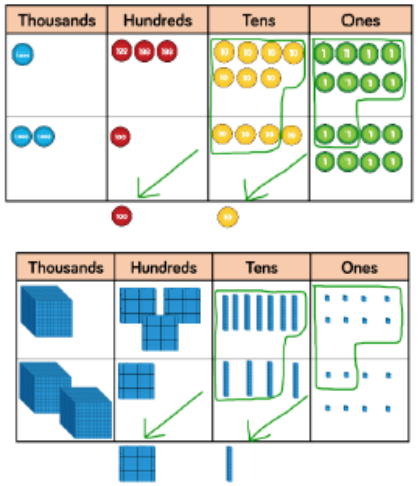
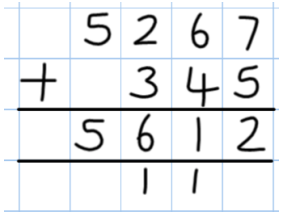
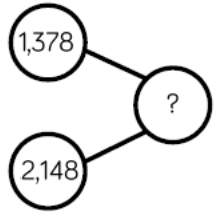
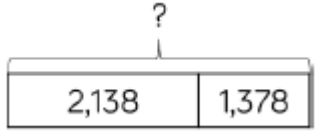
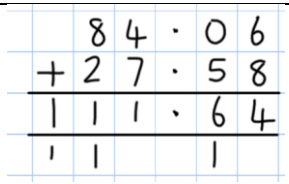
 

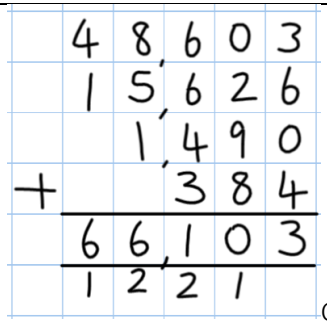
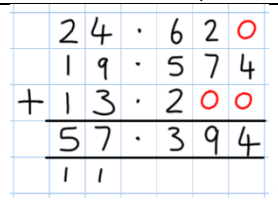
Children exchange 10 ones for a ten using Base 10 or counters.
Children understand that 10 ones are equal to 1 ten.</td>
<td> 

Some children may begin to explore the use of column addition alongside pictorial representation.
 

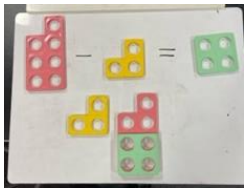
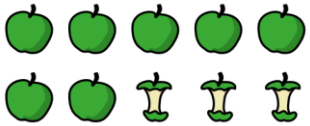
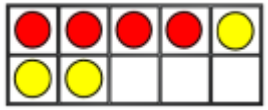
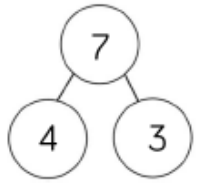
Children should recognise different ways of expressing addition calculations e.g. part-whole models, bar models.
 
</td>
</tr>
<tr>
<td colspan="4">Mental Strategies:
- Understand that addition is commutative (can be carried out in any order)
- Know that addition is the inverse of subtraction
- Add a 2-digit and 1-digit number
- Count on in tens from a given number (e.g 18 – 28)
- Add a multiple of 10 to a given 2-digit number
- Add three 1-digit numbers
Use knowledge of number bonds to 10 to calculate number bonds to 100</td>
</tr>
</table>

ADDITION			
Year 3			
VOCABULARY: add, addition, altogether, plus, more, sum, total, double, ten more, column addition, estimate, exchange, inverse,			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Add numbers with up to 3 digits using formal written methods (no exchanging).	Children use concrete resources such as Base 10 or counters to line up the hundreds, tens and ones in each number. 	 When children are confident using concrete manipulatives, they can progress to pictures/drawings.	 Children can then record the calculation formally, ensuring the hundreds, tens and ones are lined up.
Add numbers with up to 3 digits using formal written methods (exchanging).	 Children use Base 10 or counters to build numbers using the correct columns. Children further understand how to exchange when needed.	 265 + 164 429 1  Use pictures to partition number and exchange when needed. Children are encouraged to write the calculation alongside pictorial resources so they can see the links to the written column method.	 **265 + 164 = 429** Children should recognise different ways of expressing addition calculations e.g. part-whole models, bar models.  265 + 164 429 1 If children are confident using concrete/pictorial methods, they should use the formal written method of column addition.
Mental Strategies: - Add a 3-digit and 1-digit number - Add a 3-digit number and a multiple of 10 - Add a -digit number and a multiple of 100 - Calculate 10 or 100 more than a given number - Know number bonds to 1000 (multiples of 100)			

ADDITION			
Year 4			
VOCABULARY: add, addition, altogether, plus, more, sum, total, double, ten more, column addition, estimate, exchange, inverse,			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Add numbers of up to 4-digits using the formal written method of column addition.	Children will continue to use Base 10 or counters to add, exchanging when needed. 	 Children can draw pictorial representations, including columns to support their understanding, particularly when exchanging.	  Children should recognise different ways of expressing addition calculations e.g. part-whole models, bar models. 
Add decimals with up to 2 decimal places using the formal written method of column addition.	Children may use concrete manipulatives as above, ensuring the columns are lined up correctly.	Children may use pictures/drawings as above, ensuring the columns are lined up correctly.	 Children recognise the importance of using the correct columns and keeping the decimal point in the same place.
Mental Strategies: - Add a 4-digit number and a multiple of 1000 - Know number bonds to 1000 (multiples of 10) Estimate the answer to a calculation and use the inverse operation to check answers			

ADDITION			
Year 5/6			
VOCABULARY: add, addition, altogether, plus, more, sum, total, double, ten more, column addition, estimate, exchange, inverse, decimal place, tenths, hundredths, place holder,			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Add several numbers with more than 4 digits using the formal written method of column addition.	See Year 4	See Year 4	 Children continue to use the formal written method of column addition, continuing to ensure columns are lined up correctly.
Add several numbers of increasing complexity including decimals with different numbers of decimal places.	See Year 4	See Year 4	 Children should use place holders (0) when needed. Children recognise the importance of using the correct columns and keeping the decimal point in the same place.
Mental Strategies: - Add numbers mentally with increasingly large numbers (e.g. 10,362 + 3,400) - Mentally add tenths (0.1 + 0.5) and 1-digit whole numbers and tenths (2 + 0.7) Use rounding and estimation to check answers to calculations			

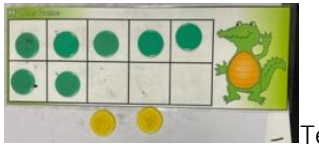
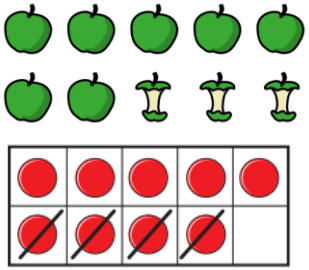
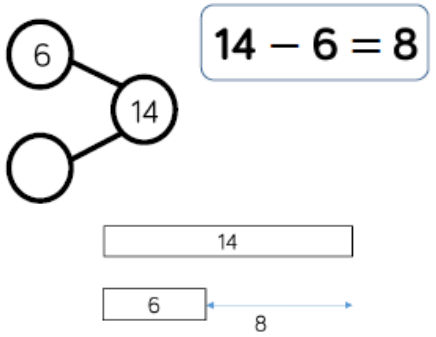
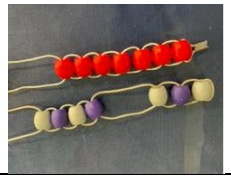
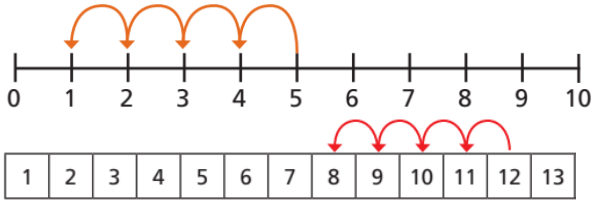
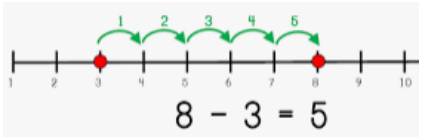
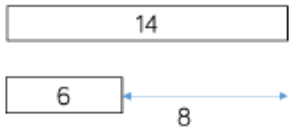
Subtraction

SUBTRACTION			
EYFS			
VOCABULARY: take away, subtract, less than, one less			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Knows that a group of things changes in quantity when something is taken away. Find one less from a group of objects (up to 10). Using objects, begin to count back to subtract 1-digit numbers.	  Use toys and general classroom resources to physically Use specific maths resources such as cubes, Numicon ect. 	 Count the pictures and cross off to represent 'taking away'.  Visual supports such as ten frames, part-whole models, addition mats with pictures.  Children begin to count backwards using number lines/tracks. 	 Use part-whole models and bar models to understand how to 'make the whole' and what is left. 7 - 1 = 6 Children **begin** to understand a number sentence using symbols and numbers.

Mental Strategies:

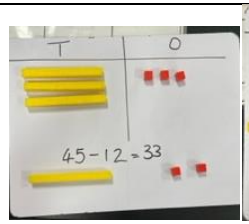
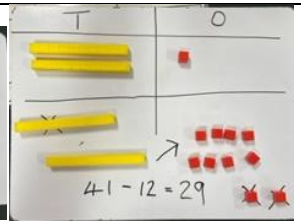
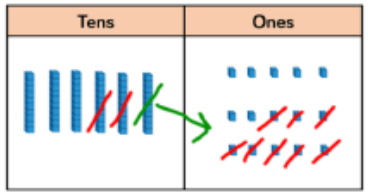
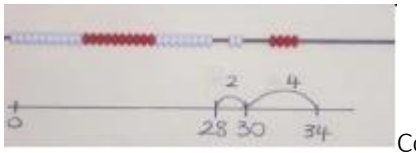
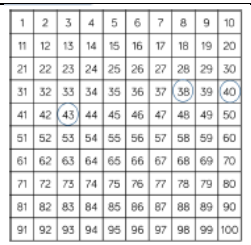
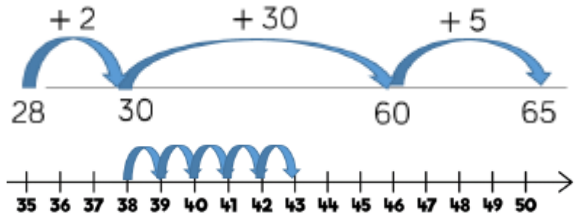
- Understand the value of a number
- Counting forwards and backwards
- Develop a mental image of the number system
- Recall the number bonds to 10

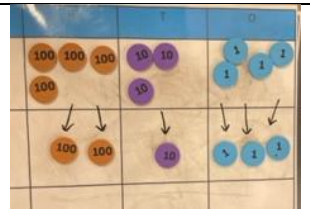
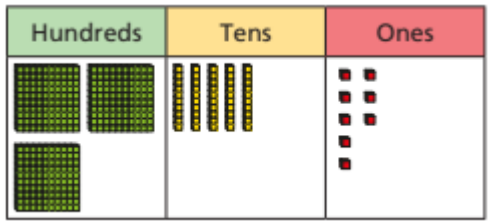
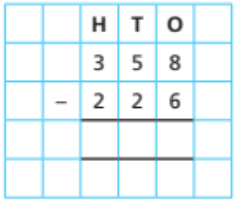
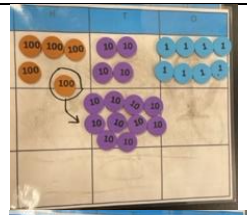
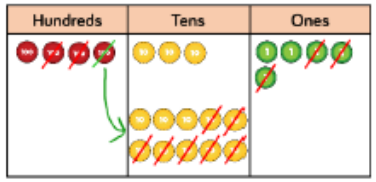
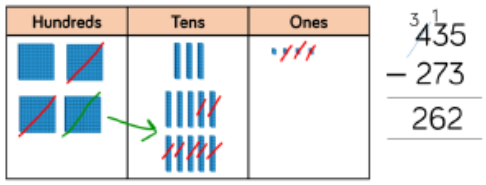
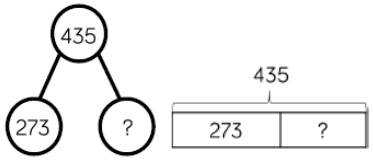
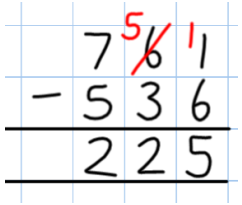
Recognise an increasing number of 2-digit numbers

SUBTRACTION			
Year 1			
VOCABULARY: subtract, less, take away, number bonds, one less, two less, how many less to get…?, less than, leave,			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Subtract 1-digit numbers within 20.	 Use physical objects to show how objects can be taken away.  Ten-frames and counters can be used to physically remove.	 Count the pictures and cross off to represent 'taking away'.	
Children are able to start at the bigger number, before counting backwards.	Start with the larger number on the bead string and count back 1 by 1 to find the answer. 	 Use number lines/tracks and start on the larger number, before counting backwards.	12 – 4 = 8 Children start at the bigger number and count backwards in their heads.
Find the difference.	Compare objects and amounts using the correct vocabulary. '7 is 3 more than 4' 	Use number lines to count on to find the difference.   Use bar models to find the difference between two numbers and understand that the 'gap' is the difference.	Finding the difference in context and understanding how to link the number sentence. Jessica has 15 sweets and Jack has 9. How many more sweets does Jessica have than Jack? 15 – 9 = 6

Mental Strategies:

- Understand that subtraction is not commutative and you must start with the larger number
- Subtract 1-digit numbers to 20, including 0
- Recall the number bonds to 20
- Subtract 1 from a given number up to 20

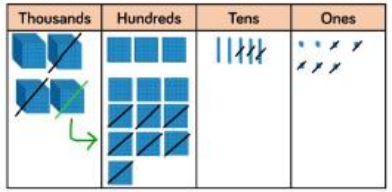
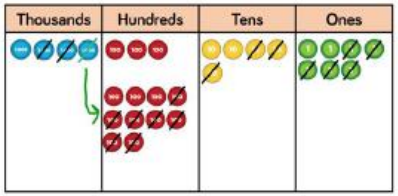
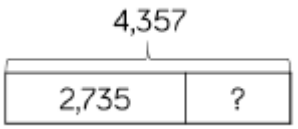
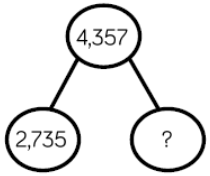
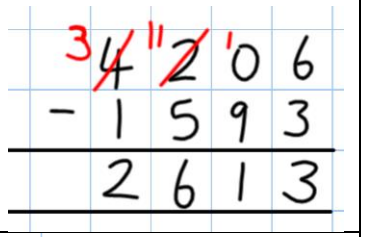
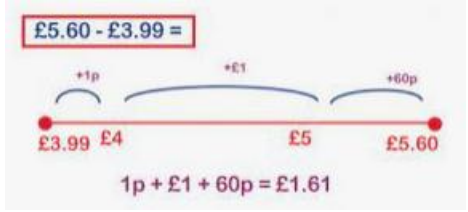
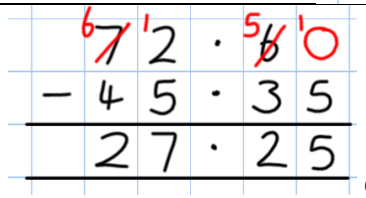
SUBTRACTION			
Year 2			
VOCABULARY: subtract, take away, number bonds, one less, two less, ten less, leave, how many less is…?, difference			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Subtract 1 and 2-digit numbers to 100.	  Children build their number using Base 10 or counters, using the correct columns. Children can then take away the correct amount, exchanging if needed.	 Children draw representations of Base 10 or counters and cross off to take away.	65 - 28 = 37 Recording subtraction in columns prepares for formal written methods with larger numbers. Children may **begin** to set the calculation out in columns next to concrete or pictorial resources.
Count on to find the difference.	 Count on to the next ten and the rest. Add the jumps together.	Use number square or number lines to count on. Children should recognise how many until the next 10, before working out how many they have left.  	65 - 28 = 37 Children continue to recognise related number facts. 65 - 37 = 28 37 + 28 = 65 28 + 37 = 65
Mental Strategies: - Understand that subtraction is not commutative and you must start with the larger number - Know subtraction is the inverse of addition - Subtract a 1-digit from a 2-digit number - Count backwards in tens from a given number - Subtract a multiple of 10 from a given 2-digit number Use knowledge of number bonds to 10 to calculate number bonds to 100			

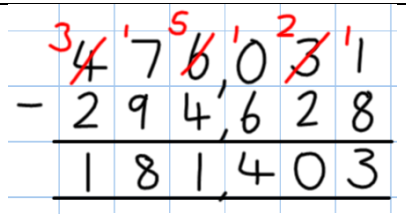
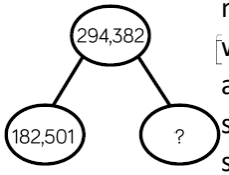
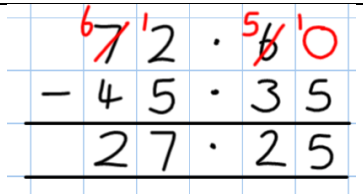
SUBTRACTION			
Year 3			
VOCABULARY: subtract, take away, number bonds, one less, two less, ten less, leave, how many less is…?, difference, estimate, exchange, inverse, minus			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Subtract numbers with up to 3 digits using formal written methods (no regrouping).	 Children use concrete manipulatives that they can physically take away. Children will set the hundreds, tens and ones in columns.		 When children are confident with concrete/pictorial resources, they can use the formal written method.
Subtract numbers with up to 3 digits using formal written methods (regrouping).	 Children learn to exchange if they do not have enough to subtract, before completing the subtraction.	  Use pictures to partition numbers and exchange when needed. Children are encouraged to write the calculation alongside concrete or pictorial resources so they can see the links to the written column method.	 Children should recognise different ways of expressing subtraction calculations e.g. part-whole models, bar models.  If children are confident using concrete/pictorial methods, they should use the formal written method of column subtraction.

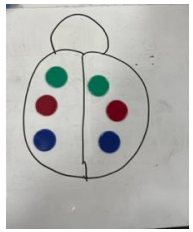
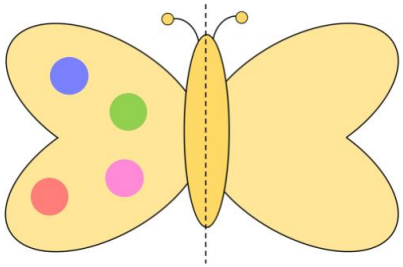
Mental Strategies:

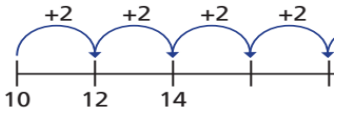
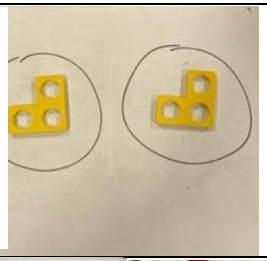
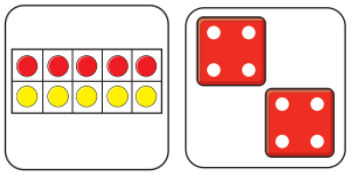
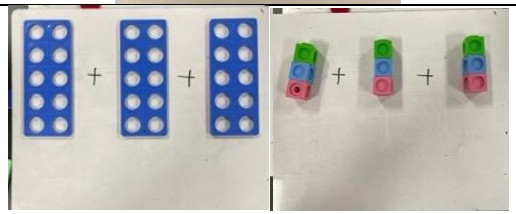
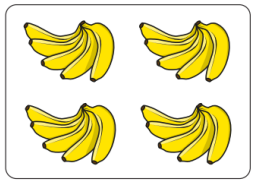
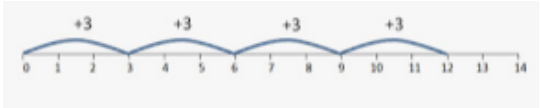
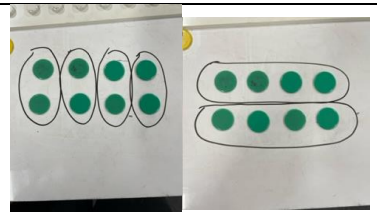
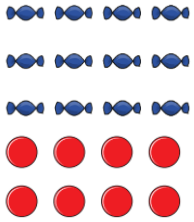
- Subtract a 1-digit number from a 3-digit number
- Subtract a multiple of 10 from a 3-digit number
- Subtract a multiple of 100 from a 3-digit number
- Calculate 10 or 100 less than a given number
- Know number bonds to 1000 (multiples of 100)

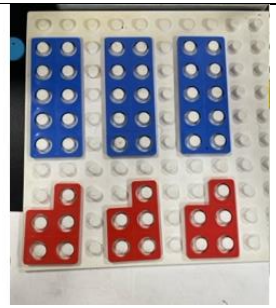
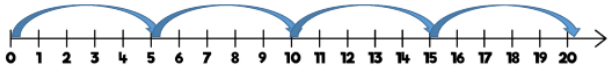
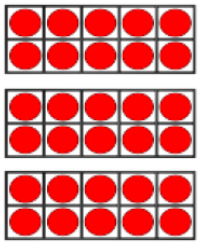
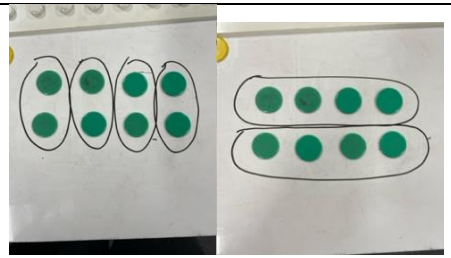
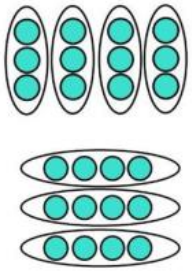
Estimate the answer to a calculation and use inverse operations to check answers

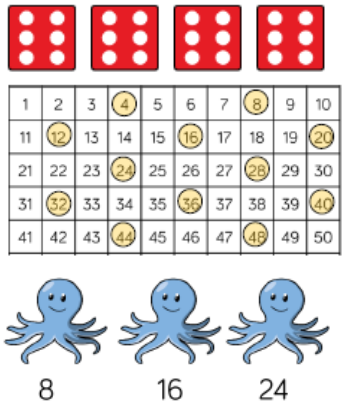
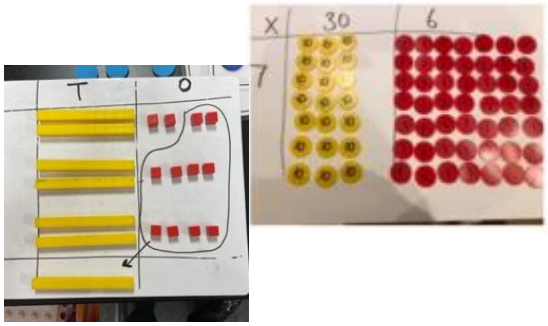
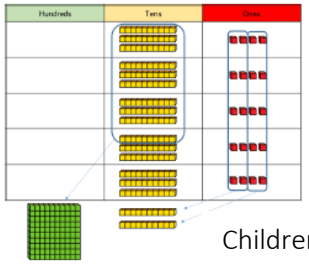
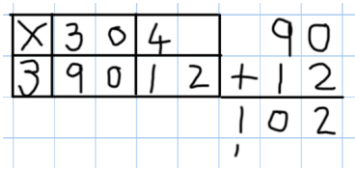
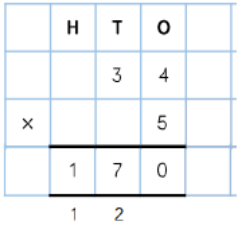
SUBTRACTION			
Year 4			
VOCABULARY: subtract, take away, number bonds, column subtraction, leave, how many less is…?, difference, estimate, exchange, inverse, minus, decimal place, tenths, hundredths			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Subtract numbers of up to 4-digits using the formal written method of column subtraction.	Children will continue to use Base 10 or counters to subtract, exchanging when needed. See Year 3.	  Children can draw pictorial representations, including columns to support their understanding, particularly when exchanging.	  Children can interpret bar models and part-whole models and use column subtraction to solve. 
Introduce the subtraction of decimals using money.		 Children can use the ‘couniting on’ method to find change (the difference)	 Children recognise the importance of using the correct columns and keeping the decimal point in the same place and using place holders if necessary.
Mental Strategies: - Subtract a 4-digit number and a multiple of 1000 - Know number bonds to 1000 (multiples of 10) Estimate the answer to a calculation and use the inverse operation to check answers			

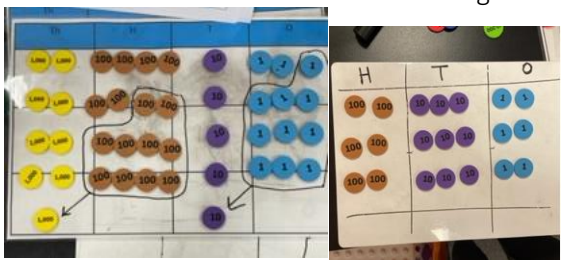
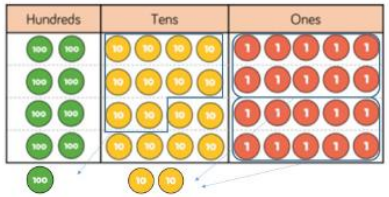
SUBTRACTION			
Year 5/6			
VOCABULARY: subtract, take away, minus, difference, leave, how many less…?, , column subtraction, estimate, exchange, inverse, decimal place, tenths, hundredths, place holder,			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Subtract numbers with more than 4 digits using the formal written method of column subtraction.	See Year 4	See Year 4	  Children can interpret bar models and part-whole models and use column subtraction to solve.
Subtract with more complex numbers, including numbers with up to 3 decimal places.	See Year 4	See Year 4	 Children should use place holders (0) when needed. Children recognise the importance of using the correct columns and keeping the decimal point in the same place.
Mental Strategies: - Subtract numbers mentally with increasingly large numbers (e.g. 10,362 + 3,400) - Mentally subtract tenths (0.1 + 0.5) and 1-digit whole numbers and tenths (2 + 0.7) Use rounding and estimation to check answers to calculations			

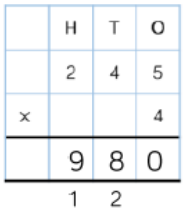
MULTIPLICATION			
EYFS			
VOCABULARY: group, groups of, altogether			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Making equal groups and doubling.	 Make two equal groups using general classroom or specific maths resources.	 Make two equal groups using pictorial representation. Make a second equal group when given one group. Children are introduced to the concept of doubling by drawing or making two equal groups.	2 + 2 = 4 3 + 3 = 6 4 + 4 = 8 Children **begin** to understand number sentences and recognise two equal groups.
Mental Strategies: - Make equal groups			

MULTIPLICATION			
Year 1			
VOCABULARY: group, groups of, altogether, lots of, array			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Counting in multiples.	 Make equal groups using general classroom or specific maths resources.	 Use number lines or pictures to support counting. 	 Write sequences of multiples. Count in multiples aloud. 2, 4, 6, 8, 10, 12, 14…
Doubling	Make equal groups with concrete manipulatives. 	Draw pictures to make two equal groups and understand how to double numbers. 	2 + 2 = 4 3 + 3 = 6 4 + 4 = 8 Children recognise two equal groups and build their knowledge of doubles.
Repeated addition	 Use Numicon, cubes etc. to add equal groups.	 Pictures and number lines to count in multiples by adding on. 	Children should begin to write number sentences to match pictures. 5 + 5 + 5 + 5 = 20 3 + 3 + 3 + 3 = 12
Understanding arrays	 Grouping arrays in different ways; understanding that multiplication is commutative.	 Children should interpret arrays and begin to understand that multiplication is commutative; the calculation can be completed in any order and the answer will be the same.	4 x 3 = 12 3 x 4 = 12
Mental Strategies: - Make equal groups			

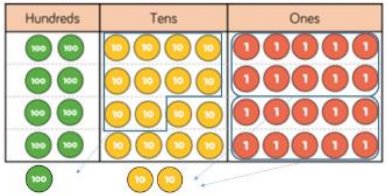
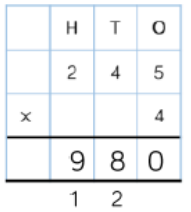
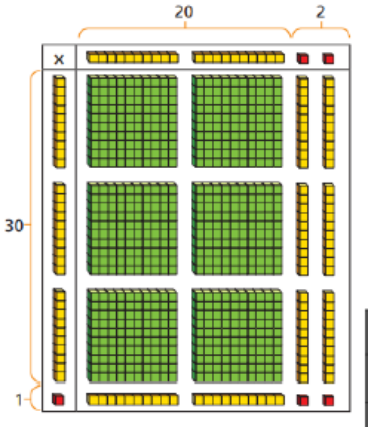
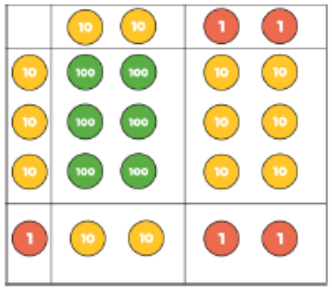
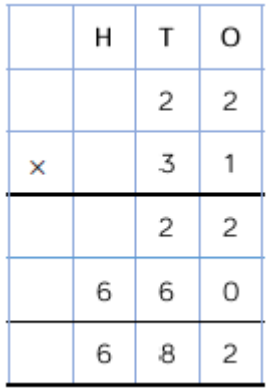
MULTIPLICATION			
Year 2			
VOCABULARY: group, groups of, altogether			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Counting in multiples of 2, 5 and 10.	 Use concrete manipulatives to add on equal groups.	   Use number lines, ten-frames, pictures, number squares to count in multiples.  	Counting aloud as often as possible. Write sequences with multiples of numbers. 2, 4, 6, 8, 10, 12, 14, 16, 18, 20… 5, 10, 15, 20, 25, 30, 35, 40… 10, 20, 30, 40, 50, 60…
Solve simple multiplication problems using arrays.		 Children should be able to interpret arrays and understand that multiplication is commutative; the calculation can be completed in any order and the answer will be the same.	One bag holds 5 apples. How many apples do 4 bags hold? Children should begin to record multiplication formally. For example: 4 x 5 = 20
Mental Strategies: - Make equal groups - Count in 2s, 5s and 10s - Begin to respond to multiplication questions orally e.g. 2 x 2 =			

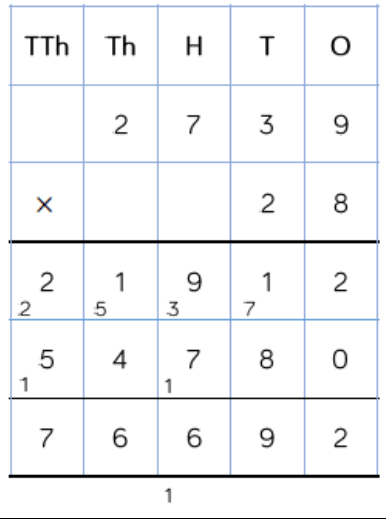
MULTIPLICATION			
Year 3			
VOCABULARY: group, groups of, altogether, multiply, times tables, times, lots of,			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Counting in multiples.	Use concrete manipulatives to add on equal groups. 	 8 16 24 Children can use pictures, number squares, number lines to help them count. Children should begin to recognise patterns. E.g. multiples of 4 are all even.	Counting aloud as often as possible forwards and backwards. Write sequences with multiples of numbers. 4, 8, 12, 16, 20, 24, 28…. 6, 12, 18, 24, 30, 36, 42… Recall multiples by writing number sentences. 1 x 8 = 8, 2 x 8 = 16, 3 x 8 = 24, 4 x 8 =32…
Multiply a 2-digit number by a 1-digit number.	Using the grid method and counters or Base 10, children partition the 2-digit number. They can then multiply the number and add the answers together. 	Children can represent the calculation in their own way by drawing counter, Base 10 etc.  Children understand when to exchange 10 tens for 1 hundred or 10 ones for 1 ten.	 Children begin by using the grid method to help them partition the number.  If children are confident, they may begin to use the formal method of multiplication.
Mental Strategies: - Make equal groups - Recall multiplication facts - Count in multiples			

<table>
<tr><th colspan="4">MULTIPLICATION</th></tr>
<tr><td colspan="4">Year 4</td></tr>
<tr><td colspan="4">VOCABULARY: group, groups of, altogether, multiply, times tables, times, lots of, exchange, multiples, product, inverse, array</td></tr>
<tr><th>Objective:</th><th>Concrete:</th><th>Pictorial:</th><th>Abstract:</th></tr>
<tr>
<td>Multiply a 3-digit number by a 1-digit number.</td>
<td>Using the grid method and counters or Base 10, children partition the 3-digit number. They can then multiply the number and add the answers together.
  </td>
<td>Children can still use counters on a place value grid for extra support.
 

Children exchange when needed.</td>
<td>Some children may still need to use the grid method but most should use the short, column multiplication method.
 

-Begin multiplying the ones
-Exchange in the next column
-Add any exchanged numbers
If children are confident, they may begin to multiply 4-digit numbers.</td>
</tr>
<tr><td colspan="4">Mental Strategies:
- Make equal groups
- Recall multiplication facts
- Count in multiples
- Multiply multiples of 10 by a 1-digit number</td></tr>
</table>

MULTIPLICATION			
Year 5			
VOCABULARY: group, groups of, altogether, multiply, times tables, times, lots of, exchange, multiples, product, inverse, array			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Multiply a 4-digit number by a 1-digit number.	Children can still use concrete manipulatives if required, beginning with smaller numbers.	Children can still use counters on a place value grid for extra support.  Children exchange when needed.	Some children may still need to use the grid method but most should use the short, column multiplication method.  H T O 2 4 5 × 4 9 8 0 1 2 -Begin multiplying the ones -Exchange in the next column -Add any exchanged numbers If children are confident, they may begin to multiply 4-digit numbers.
Multiply 2-digit numbers by 2-digit numbers. Multiply 3-digit by 2-digit numbers.	 Children may use Base 10 or counters in a grid to support their learning. This also helps children understand the size of the numbers they are using.	 Children may use Base 10 or counters in a grid to support their learning. This also helps children understand the size of the numbers they are using.	 H T O 2 2 × 3 1 2 2 6 6 0 6 8 2 -Begin with 22 x 1 on the first row, exchanging when needed. -Multiply 20 x 30 on the second row, using a 0 as a place holder (as multiplying by a 10). -Add the two numbers together -Children may place exchanges where they are comfortable but they must be clear and easy to read.
Mental Strategies: - Make equal groups - Recall multiplication facts - Count in multiples - Multiply multiples of 10 by a 1-digit number			

MULTIPLICATION			
Year 6			
VOCABULARY: group, groups of, altogether, multiply, times tables, times, lots of, exchange, multiples, product, inverse, array			
Objective:	**Concrete:**	**Pictorial:**	**Abstract:**
Multiply 4-digit numbers by 2-digit numbers.	See Year 5	See Year 5	 -Begin with 2739 x 8 on the first row, exchanging when needed. -Multiply 2739 x 20 on the second row, using a 0 as a place holder (as multiplying by a 10). -Add the two numbers together -Children may place exchanges where they are comfortable but they must be clear and easy to read.
Mental Strategies: - Make equal groups - Recall multiplication facts - Count in multiples - Multiply multiples of 10 by a 1-digit number			