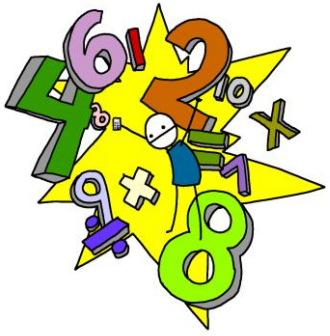
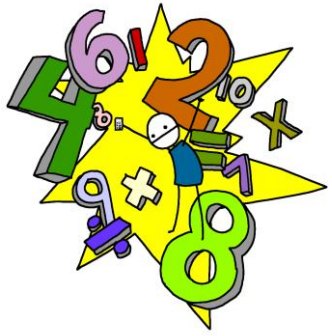
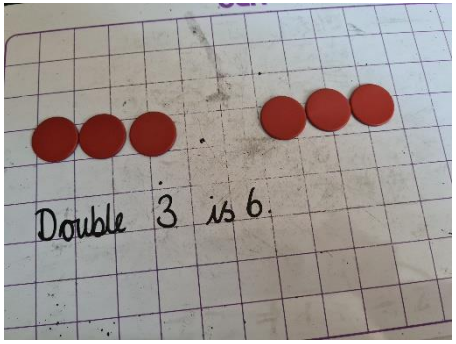
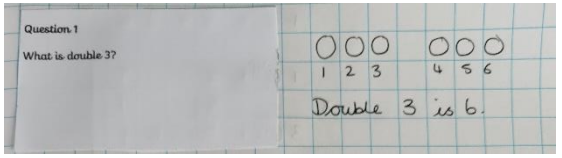
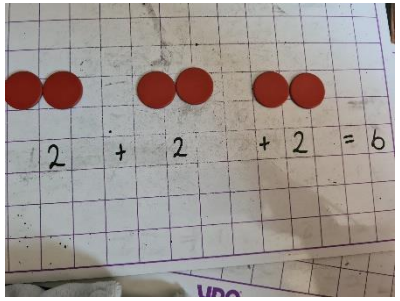
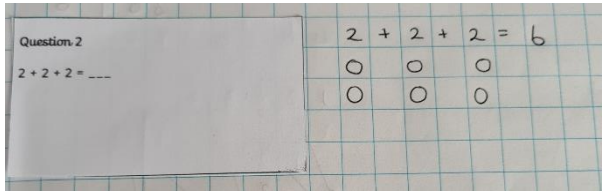
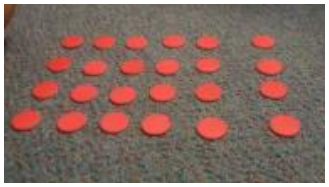
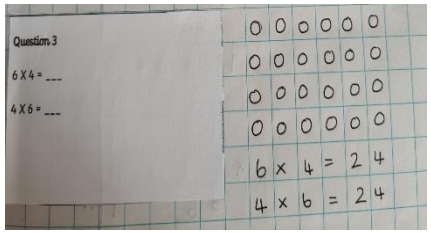
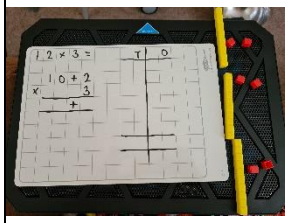
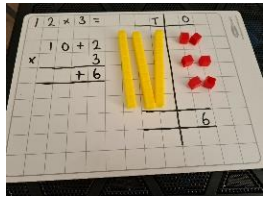
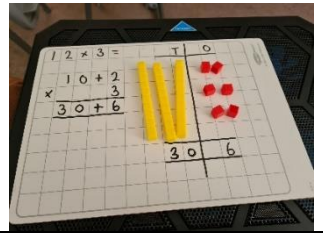
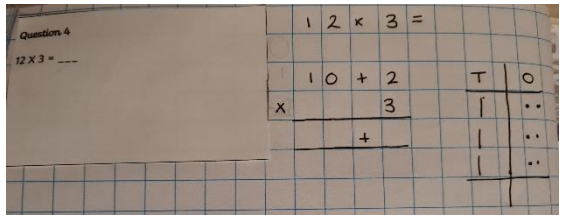
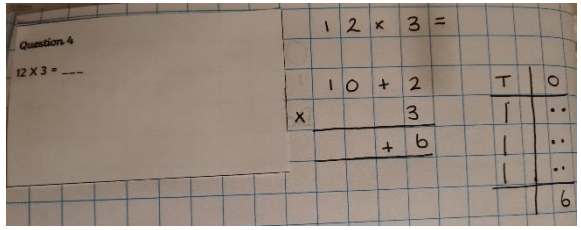
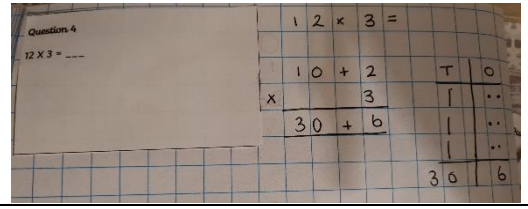


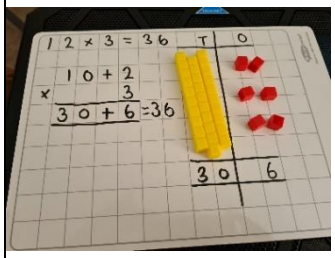
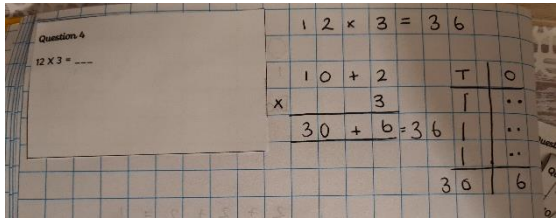
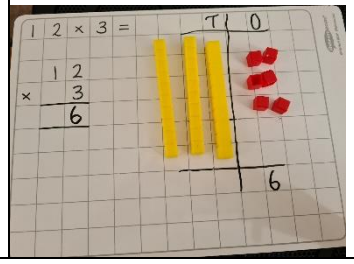
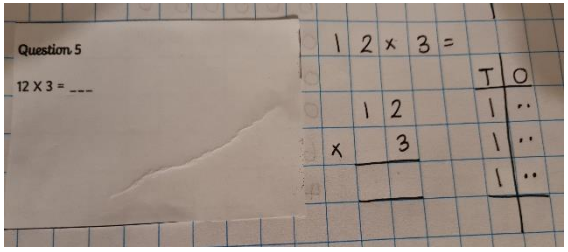
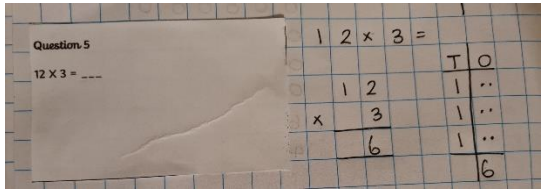
Bugle School Mulitplication and Division Policy September 2021

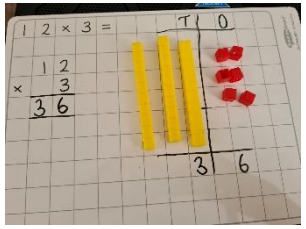
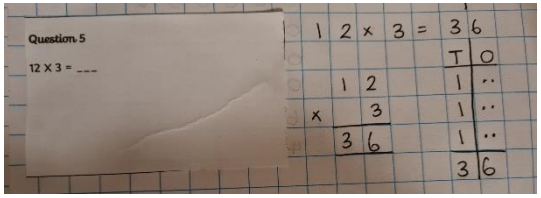


Multiplication

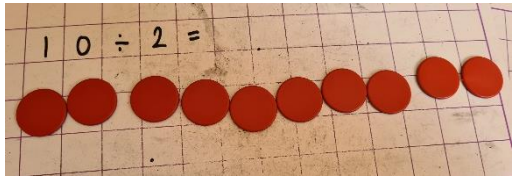
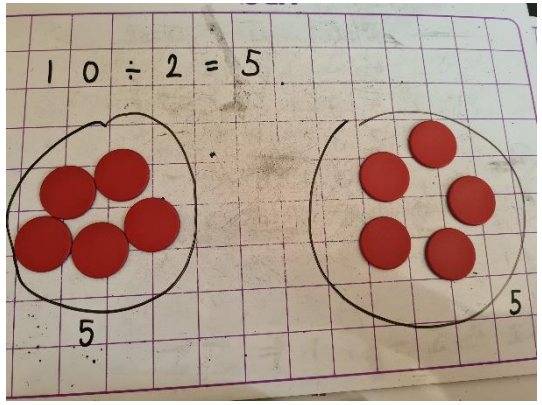
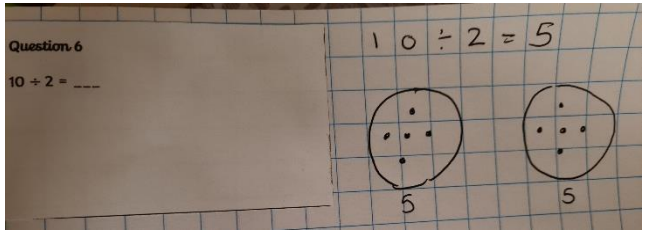
Objective and Strategies	Concrete	Pictorial	Abstract
YEAR 1 Doubling	Use concrete objects to double an amount.  Children should also link this to addition – 3 + 3 = 6.	Draw counters to double single digit numbers. 	Children to use their knowledge of doubling single digit numbers to partition larger numbers for doubling (see mental strategies document for further details).
YEAR 1 Up Repeated addition	Use concrete objects to represent a repeated addition equation. 	Draw counters to represent the repeated addition number sentence. 	Children to use mental strategies to solve repeated addition number sentences.

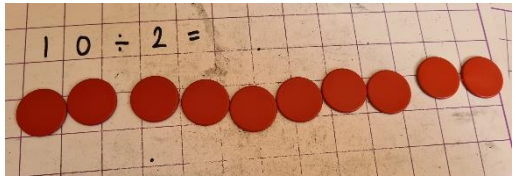
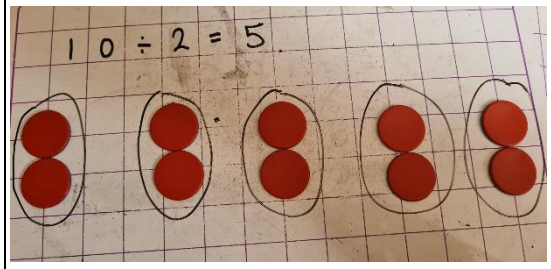
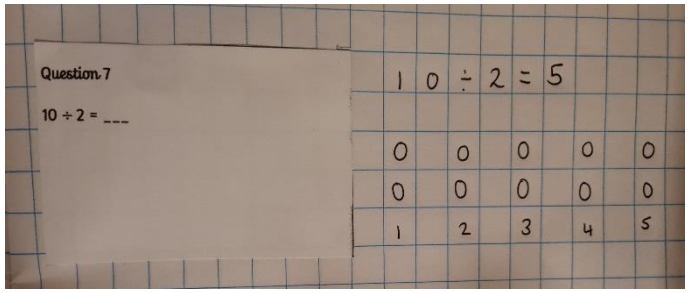
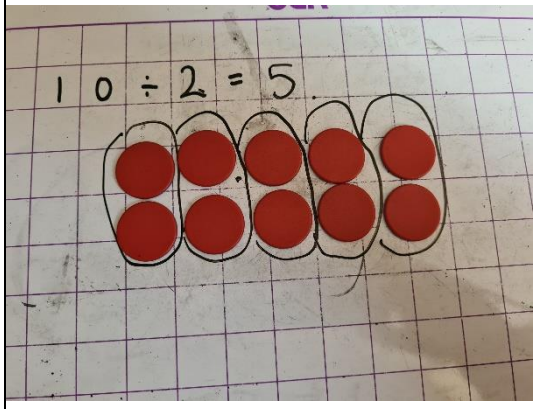
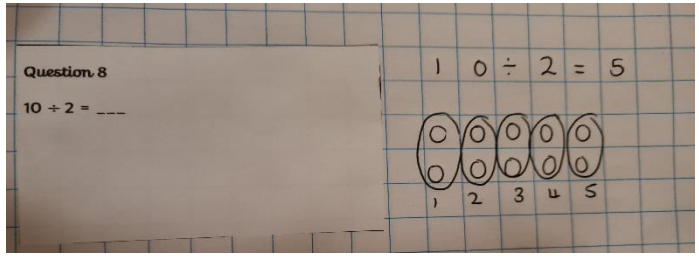
YEAR 1 Up Arrays	Create arrays using counters or cubes alongside a multiplication equation.  6 X 4 = 24 4 X 6 = 24	Draw arrays al ongside a multiplication equation. 	Picture the array to support mental calculation of repeated addition/multiplication equation.
YEAR 2 up Expanded Column multiplication Dienes to be used in Year 2 and 3, place value counters may be used if this needs revisiting in higher years	**Children will need to have the written recording alongside the practical equipment.** Write out the number sentence, layout the column method in expanded form and draw a place value grid. Make the 2-digit number with base 10 and replicate it to the number it is being multiplied by.  Place the base 10 into the place value grid and total the number of ones. Record on place value grid and on the column method  . Total the value of the tens (ensure children understand the difference between 'value of' and 'number of') and record on the place 	Write out the number sentence, layout the column method in expanded form and draw a place value grid. Draw the 2-digit number with base 10 and replicate it to the number it is being multiplied by.  Total the number of ones. Record on place value grid and on the column method.  Total the value of the tens (ensure children understand the difference between 'value of' and 'number of') 	Children to use their knowledge to times tables to complete the expanded method without the need to use images or concrete materials.

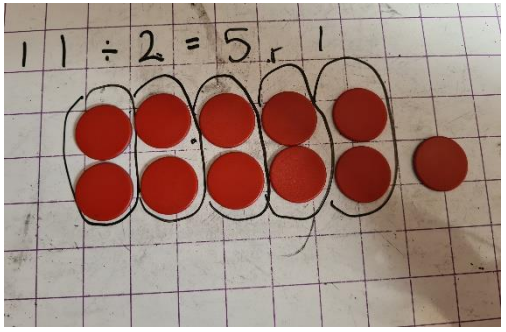
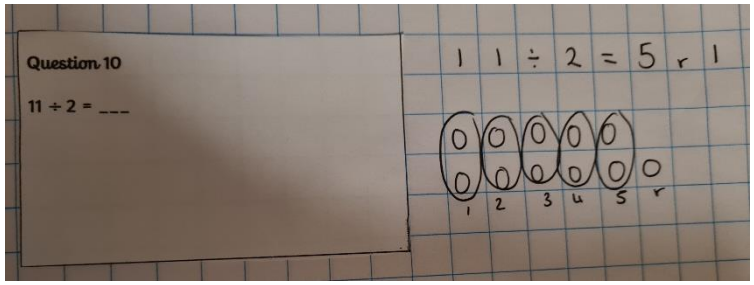
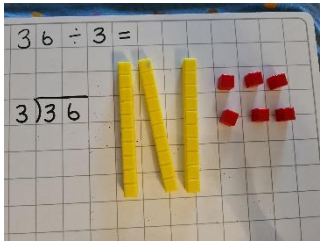
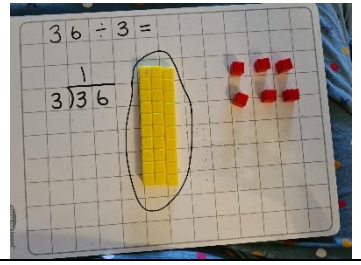
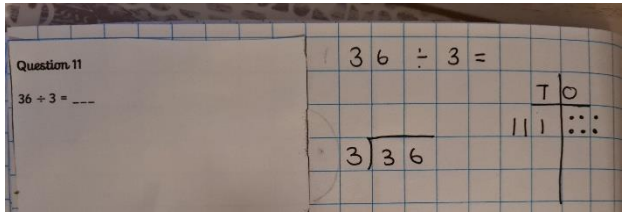
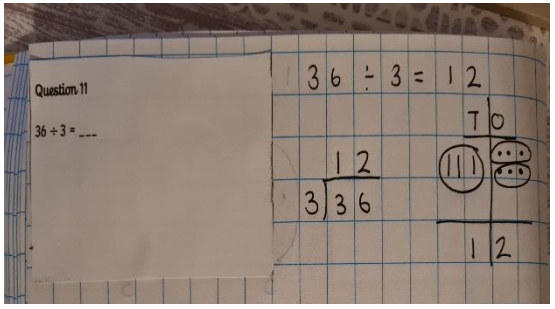
	value grid and the expanded column method. Add together the tens and ones. Record on the expanded column method and at the end of the number sentence.  	and record on the place value grid and the expanded column method. Add together the tens and ones. Record on the expanded column method and at the end of the number sentence.  	
YEAR 3 Up Column multiplication. Dienes to be used in Year 3, place value counters can be used in higher years.	**Children will need to have the written recording alongside the practical equipment.** Write out the number sentence, layout the column method and draw a place value grid. Make the 2-digit number with base 10 and replicate it to the number it is being multiplied by. Place the base 10 into the place value grid and total the number of ones. Record on place value grid and on the column method.  	Write out the number sentence, layout the column method and draw a place value grid. Draw the 2-digit number with base 10 and replicate it to the number it is being multiplied by.  Total the number of ones. Record on place value grid and on the column method.  	Children to use the written method without the need for concrete resources or images.

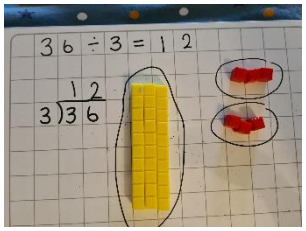
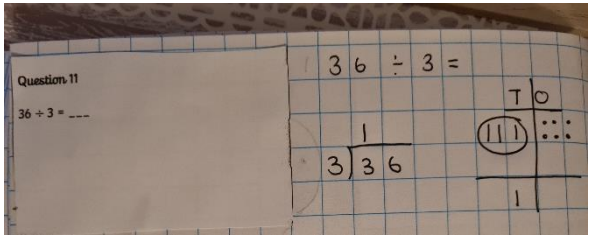
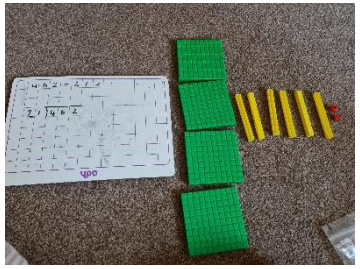
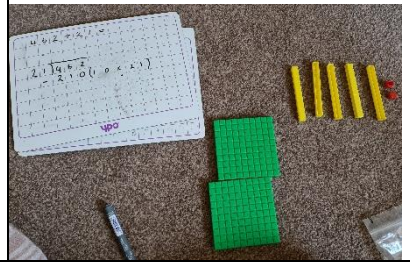
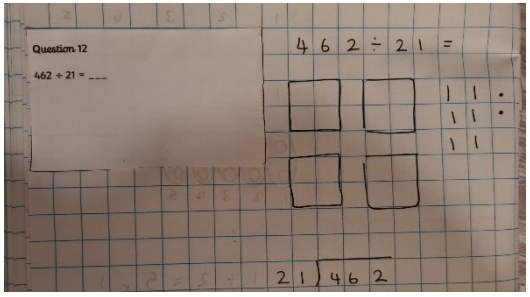
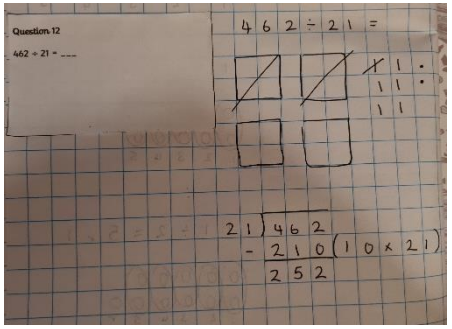
	 Total the value of the tens (ensure children understand the difference between ‘value of’ and ‘number of’) and record on the place value grid, the column method and the end of the number sentence.	Total the value of the tens (ensure children understand the difference between ‘value of’ and ‘number of’) and record on the place value grid,  the column method and the end of the number sentence.	

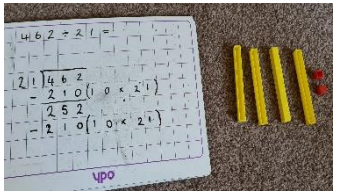
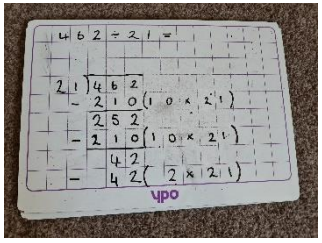
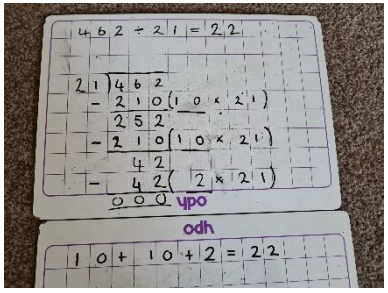
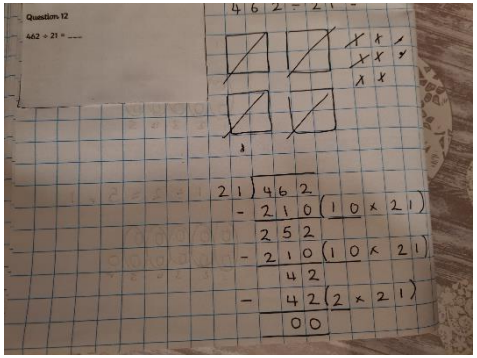
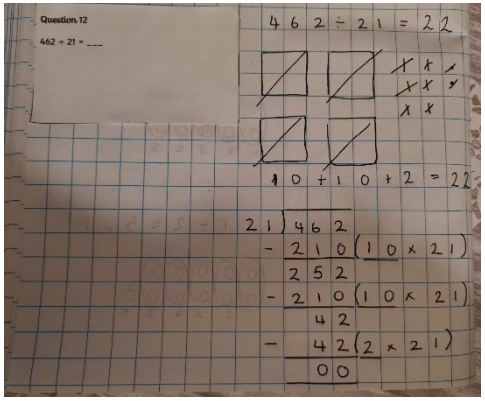
Division

Objective and Strategies	Concrete	Pictorial	Abstract
YEAR 1 up Sharing objects into Groups – the total number and number of groups is known but the number in each group is unknown.	Start off by counting out the total number of counters.  Section your board to represent the number of groups and share the counters equally into the groups. The number of counters in each group is your answer.  	Children to draw counters or dots to share quantities.  	Children to use mental skip counting to find the answer.

YEAR 1 up Division as grouping – the total number and number in each group is known but the number of groups is unknown.	Start off by counting out the total number of counters.  Put the counters into groups of the number shown and count the number of groups (to start with, children may need to draw around the groups to make this clear). The number of groups is your answer.  	Draw counters into groups of the number shown and count the number of groups (to start with, children may need to draw around the groups to make this clear). The number of groups is your answer.  	Children to use mental skip counting to find the answer.
YEAR 2 Division using arrays	Lay out counters to form an array and circle the groups to find the number of groups.  	Draw out counters to form an array and circle the groups to find the number of groups.  	Children to use mental skip counting to find the answer.

YEAR 2 Division using arrays with a remainder	Lay out counters to form an array and circle the groups to find the number of groups. Any not included because they don't make a full group are the remainder. 	Draw dots and group them to divide an amount and clearly show a remainder. 	Children to use mental skip counting to find the answer.
YEAR 3 up Short Division (compact/'bus stop' method) with and without remainders. Dienes to be used in Year 3, place value counters can be used in higher years	**Children will need to have the written recording alongside the practical equipment.** Make the largest number with dienes and write out the compact method.  Starting with the 10s dienes, group the dienes into groups of the number you are dividing by. (Any that can't be grouped need to be exchanged for 1s dienes and this is shown by making an 	Draw the largest number with dienes and write out the compact method .  Starting with the 10s dienes, group the dienes into groups of the number you are dividing by. (Any that can't be grouped need to be exchanged for 1s dienes and this is shown by crossing out 10s dienes and drawing more 1s dienes as well as making an adjustment to the ones digit in the written 	Children apply their knowledge to times tables to use the compact method in abstract form.

	adjustment to the ones digit in the written method to show the new number of ones). Record the number of groups on the compact method. Now group the ones into groups of the number you are dividing by. Record the number of groups on the compact method. Then place your answer at the end of your number sentence  Any unused ones dienes. are recorded as a remainder.	method to show the new number of ones). Record the number of groups on the compact method. Now group the ones into groups of the number you are dividing by. Record the number of groups on the compact method. Then place your answer at the end of your number sentence.  Any unused ones dienes are recorded as a remainder.	
YEAR 6 Chunking	**Children will need to have the written recording alongside the practical equipment.** Begin by writing out the standard compact division method and make the largest number with base 10.   Subtract a 'chunk' from the total started with, using	Begin by writing out the standard compact division method and draw the largest number with base 10.  Subtract a 'chunk' from the total started with, using multiplication of the divisor (usually start with X10). Record the subtraction underneath the compact method (as you would for column subtraction) and remove the relevant dienes. Record the remaining value.  	Children to use the written method without the need for concrete resources or images.

	multiplication of the divisor (usually start with X10). Record the subtraction underneath the compact method (as you would for column subtraction) and remove the relevant dienes. Record the remaining value. Repeat this step until you reach 0 (or a value lower than the divisor – this would become a remainder).   Total the number of times you multiplied the divisor and place at the end of your number sentence. 	Repeat this step until you reach 0 (or a value lower than the divisor – this would become a remainder).  Total the number of times you multiplied the divisor and place at the end of your number sentence.