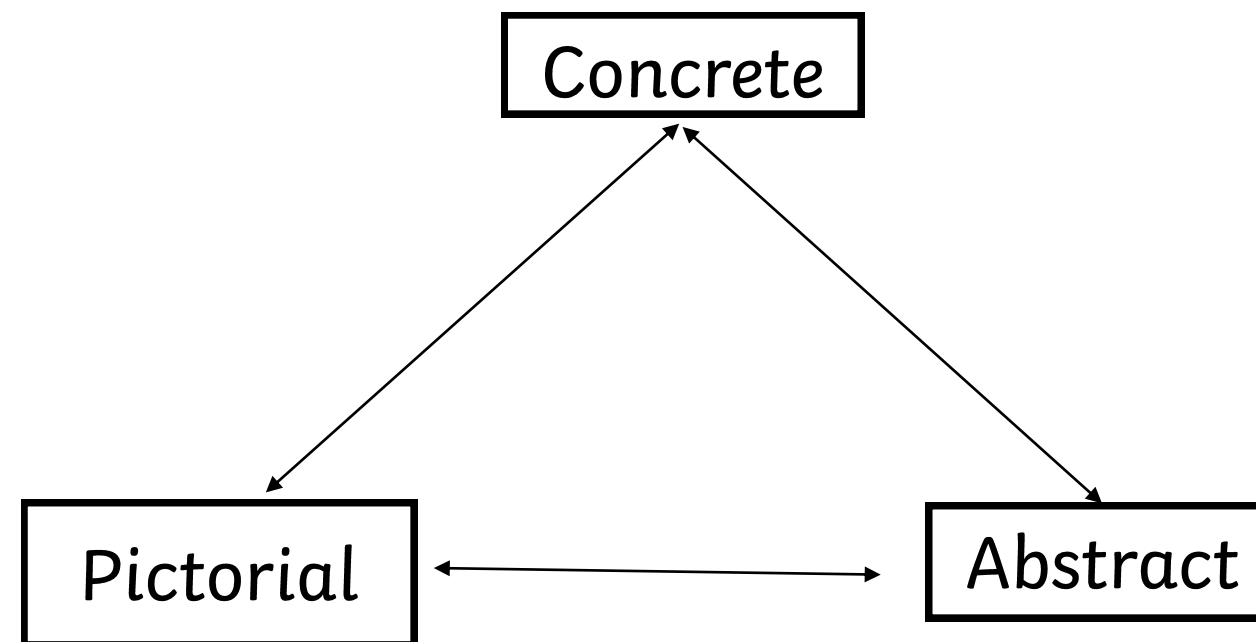


Division

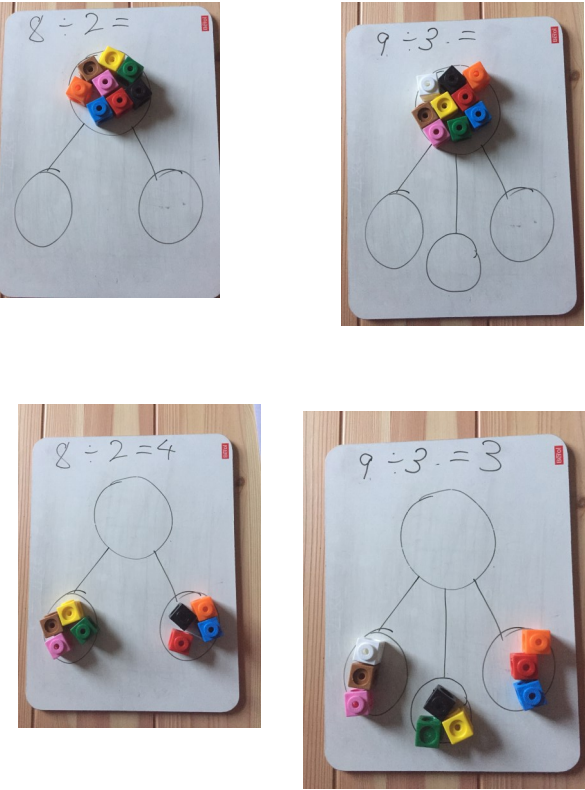
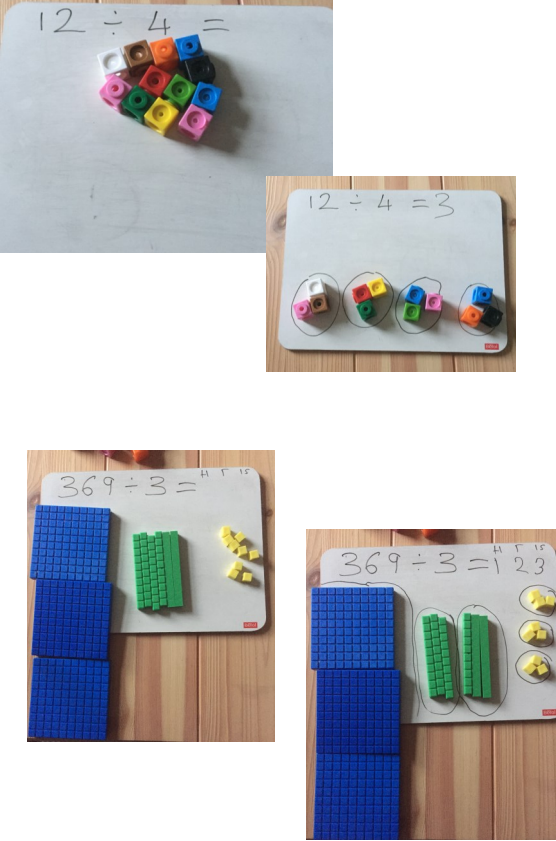
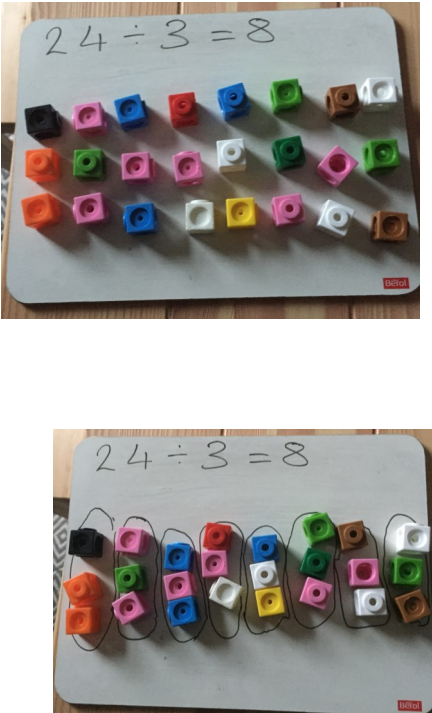
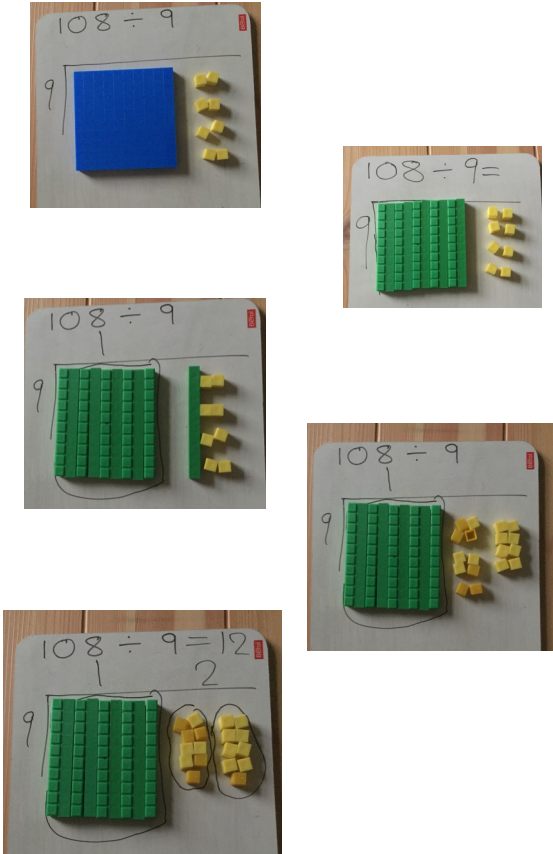


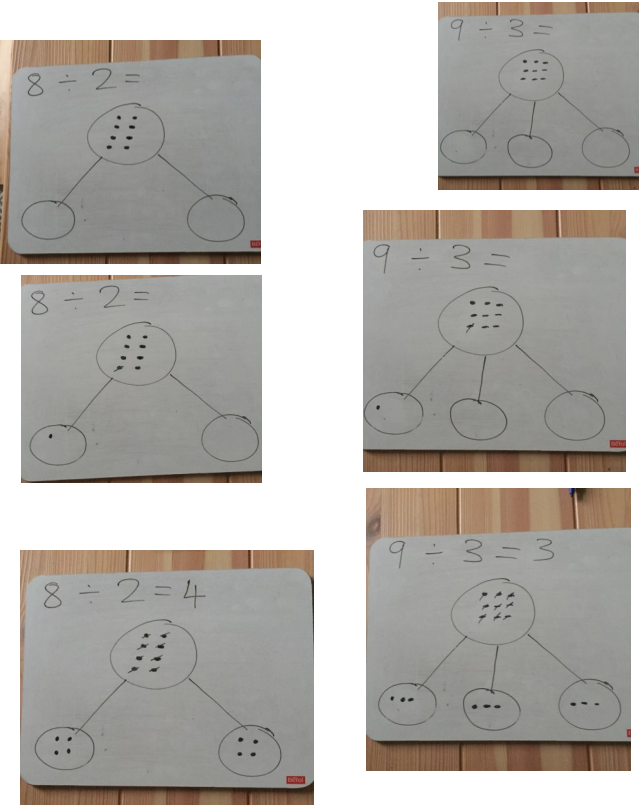
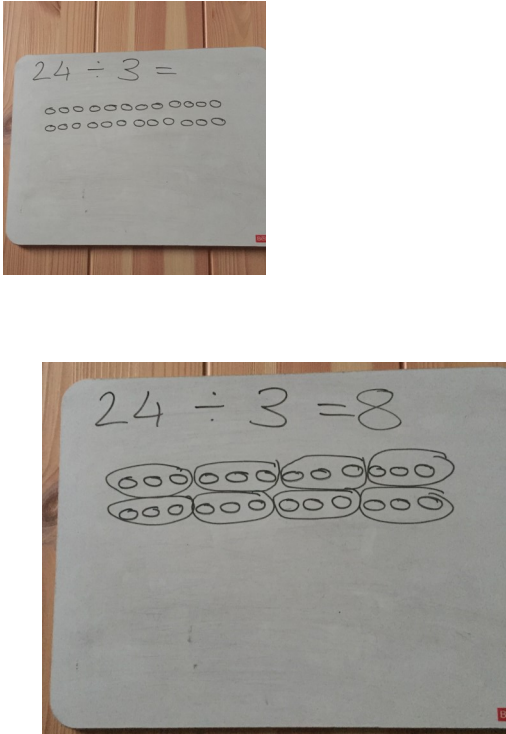
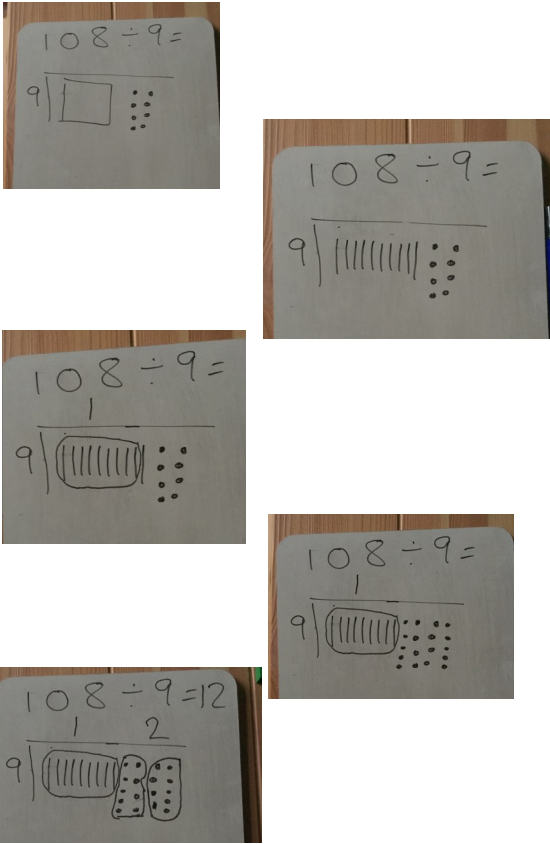
Children to be able to move through towards the stages as they feel ready, concrete resources to always be available to check calculation or reinforce method as needed. Using digits alone should be avoided until the child is secure in the method and able to apply it independently and reason using that skill in problem solving.

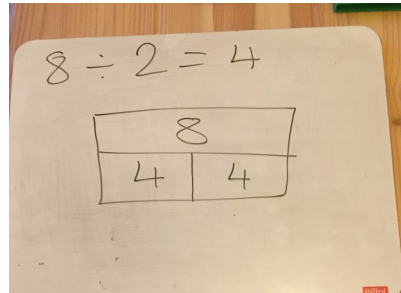
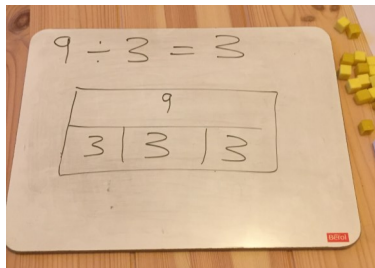
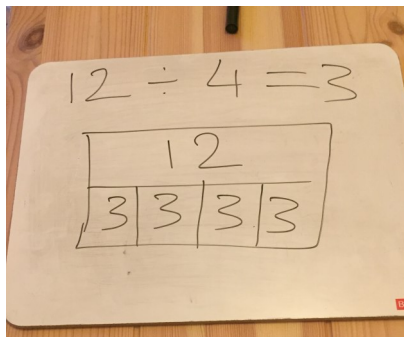
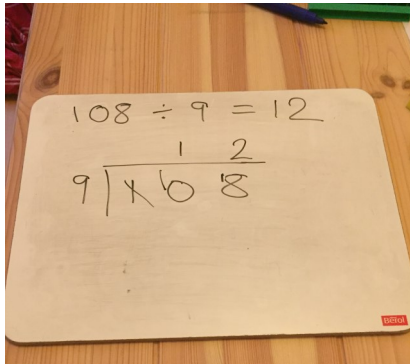
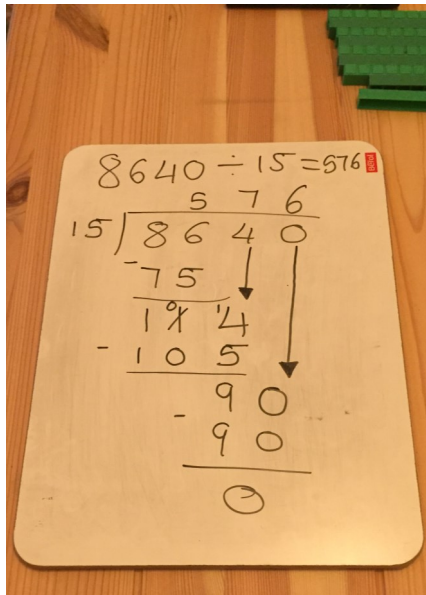
Division

Vocabulary

Concrete

Sharing	Grouping	Arrays	Formal (Bus Stop)	Long Division
share, equal, groups, quantity, shape, amount, between, parts, whole, digits, tens, ones, hundreds, exchange, dividend, divisor, quotient	divide, equal, groups, quantity, shape, amount, each, parts, whole, exchange, digits, calculation, tens, ones, hundreds, dividend, divisor, quotient	divide, array, groups, quantity, shape, amount, each, multiplication, dividend, divisor, quotient, hundred, tens, ones, calculation, digits, exchange,	biggest, smallest, tens, ones, divide, array, groups, quantity, shape, amount, multiples, left over, remainder, hundreds, tens, ones, digits, dividend, divisor, quotient, exchange,	
 Using objects, children create the whole amount (the first number in the calculation), before physically sharing by the second number in the calculation. Using the part-whole model, the whole amount is placed in the whole part of the diagram before the bottom is split into the number of parts shown by the second number in the calculation. Children then share the whole amount before counting how many each part has. With larger numbers, children will need to exchange. The calculation should be displayed and digits may accompany objects.	 Similar to sharing, children first use objects to count out the first amount in the calculation. Then then group the objects, for example if the divisor is 4 they create groups of 4. The answer is how many groups are created. Using the part-whole diagram, each group becomes one part, the answer being the number of parts. Exchange may be needed with larger numbers. The calculation should be displayed and digits may accompany objects.	 Using objects, children create an array. With larger numbers, the array is partitioned into the place value groups. Working from the largest worth to the smallest, the objects are grouped. The answer is then written above. Exchange may be needed with larger numbers and known multiples should be used, with grouping to check. The calculation should be displayed and digits to accompany objects.	 Using the bus stop template or self drawn, children using objects to create the dividend. Working from right to left, children group the objects, with the answer being the number of groups. The answer should be written above the bus stop. With larger numbers, exchange may be needed and known multiples should be used. The answer may be partitioned then added or written in the more compact form. The calculation should be displayed and digits will accompany objects.	N/A—this can be done with physical resources however it would not be an efficient method. Long division should be introduced only when secure with abstract formal short method.
<u>Possible Resources</u> dienes, cubes, topic-related objects, part-whole diagram, whiteboards, pens,	<u>Possible Resources</u> squared paper, bus stop template, dienes, cubes, topic related objects, whiteboard pens,	<u>Possible Resources</u> bus stop template, dienes, cubes, topic related objects, whiteboards, pens,	<u>Possible Resources</u> NA	
<u>How it would look in books</u>	<u>How it would look in books</u>	<u>How it would look in books</u>	<u>How it would look in books</u>	<u>How it would look in books</u> N/A

Division	Sharing	Grouping	Arrays	Formal (Bus Stop)	Long Division
Vocabulary	share, equal, groups, quantity, shape, amount, between, parts, whole, digits, tens, ones, hundreds, exchange, dividend, divisor, quotient	divide, equal, groups, quantity, shape, amount, each, parts, whole, exchange, digits, calculation, tens, ones, hundreds, dividend, divisor, quotient	divide, array, groups, quantity, shape, amount, each, multiplication, dividend, divisor, quotient, hundred, tens, ones, calculation, digits, exchange,	biggest, smallest, tens, ones, divide, array, groups, quantity, shape, amount, multiples, left over, remainder, hundreds, tens, ones, digits, dividend, divisor, quotient, exchange,	
Pictorial	 Jottings or pictures replace objects, drawing or sticking the dividend (the first number in the calculation), before re-drawing as they are shared. Using the part-whole model, the divided is drawn in the whole part of the diagram before the bottom is split into the number of parts shown by the second number in the calculation. Children then share the whole amount before counting how many each part has. With larger numbers, children will need to exchange. The calculation should be displayed and digits to accompany jottings.	 Similar to sharing, children first use pictures or jottings to count out the first amount in the calculation. Then then circle groups, for example if the divisor is 4 they circle a groups of 4. The answer is how many groups are created. Using the part-whole diagram, each group becomes one part, the answer being the number of parts. Exchange may be needed with larger numbers. The calculation should be displayed and digits to accompany objects.	Using jottings or pictures, children create an array. With larger numbers, the array is partitioned into the place value groups. Working from the largest worth to the smallest, the jottings are grouped and circled. The number of groups for each place value amount is then written above. Exchange may be needed with larger numbers and known multiples should be used, with grouping to check. The calculation should be displayed and digits to accompany jottings.	 Using the bus stop template or self drawn, objects are replaced with jottings to create the dividend. Working from right to left, children circle amounts of the dividend, with the answer being the number of groups. The answer should be written above the bus stop. With larger numbers, exchange may be needed and known multiples should be used. The answer may be partitioned then added or written in the more compact form. The calculation should be displayed and digits will accompany objects.	N/A—this can be done with jottings however it would not be an efficient method. Long division should be introduced only when secure with abstract formal short method.
	<u>Possible Resources</u> fish, chips and peas jottings, pictures of topic related objects, yellow and green paper to represent dienes, part-whole diagram, whiteboards, pens,		<u>Possible Resources</u> squared paper, bus stop template, whiteboard pens, pictures of objects, yellow and green paper to represent dienes, jottings,	<u>Possible Resources</u> bus stop template, dienes, cubes, topic related objects, whiteboards, pens,	<u>Possible Resources</u> NA
	<u>How it would look in books</u>	<u>How it would look in books</u>	<u>How it would look in books</u>	<u>How it would look in books</u>	<u>How it would look in books</u> N/A

Division	Sharing	Grouping	Arrays	Formal (Bus Stop)	Long Division	
Vocabulary	share, equal, groups, quantity, shape, amount, between, parts, whole, digits, tens, ones, hundreds, exchange, dividend, divisor, quotient	divide, equal, groups, quantity, shape, amount, each, parts, whole, exchange, digits, calculation, tens, ones, hundreds, dividend, divisor, quotient	N/A—see formal bus stop method.	biggest, smallest, tens, ones, divide, array, groups, quantity, shape, amount, multiples, left over, remainder, hundreds, tens, ones, digits, dividend, divisor, quotient, exchange,		
Abstract	  Numbers or digits replace jottings. Known facts multiple facts should be used. With larger numbers, children will need to exchange. The calculation should be displayed and jottings can be used to support understanding.	 Increasingly a mental skill, children use known multiples to identify how many groups of the divisor there are. Known multiples of the divisor can be written out to increase efficiency. Exchange may be needed with larger numbers. The calculation should be displayed and jottings can be used to support understanding.		 Using the bus stop template or self drawn, digits are used instead of jottings. Working from right to left, children use known multiples to work out how many groups there are. Multiples of the divisor can be written out to increase efficiency. With larger numbers, exchange may be needed. The answer may be partitioned then added or written in the more compact form. Jottings can be used to support understanding.	 Long division requires a good application of number bonds and multiples. Whilst it can be done using jottings this is not an efficient use of time. When dividing a four digit number by a two digit number, you first calculate how many groups of the divisor go into the dividend rounded to the nearest hundred. The answer is then written above the hundreds digit. The exact multiple amount is then subtracted from the rounded number. The tens digit of the dividend is then dropped down to make another rounded number. Known multiples are used to work out how many groups of the divisor are found in the new rounded number. The answer is written above the tens number of the dividend. The exact multiple is then subtracted from this, and the ones number of the original dividend is then dropped down. The final step is to calculate how many groups of the divisor fit in this final amount and the answer written above the original ones number.	
	<u>Possible Resources</u> part-whole diagram, pencils, squared paper,			<u>Possible Resources</u> bus stop template, dienes, cubes, topic related objects, whiteboards, pens,	<u>Possible Resources</u> Whiteboards, pens,	
	<u>How it would look in books</u>	<u>How it would look in books</u>		<u>How it would look in books</u>	<u>How it would look in books</u>	<u>How it would look in books</u>