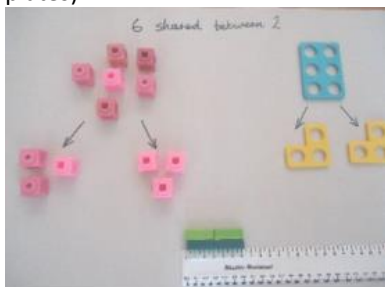
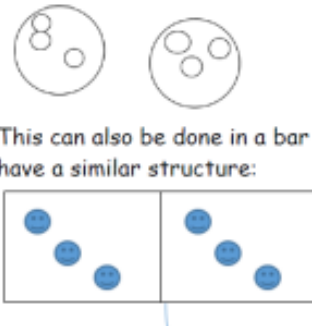
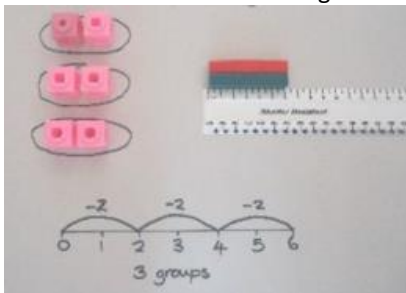
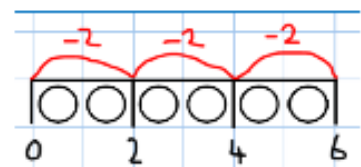
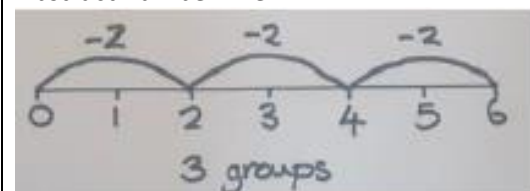



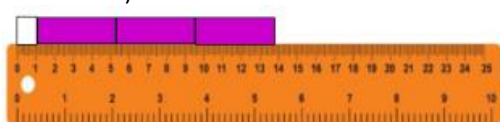
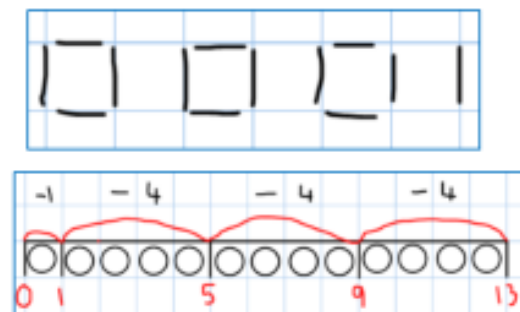

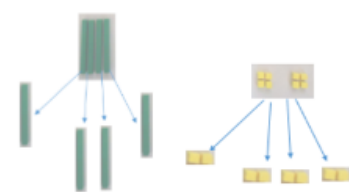
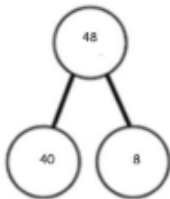


Thythorn Field Calculation Policy - Division


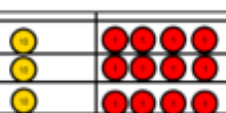
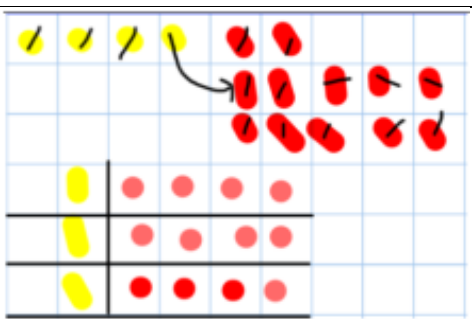
Progression in Calculations				
Sharing objects into groups			Year 1 Year 2	
<div>CONCRETE</div> <div>6 shared between 2 (other concrete objects can also be used e.g. children and hoops, teddy bears, cakes and plates)</div> <div></div>	<div>PICTORAL</div> <div></div> <div>This can also be done in a bar so all 4 operations have a similar structure:</div>	<div>ABSTRACT</div> <div>$6 \div 2 = 3$</div> <div>What's the calculation?</div> <div><table><tr><td>3</td><td>3</td></tr></table></div>		3
3	3			
Understand division as repeated grouping and subtracting			Year 2	
<div>CONCRETE</div> <div>Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding.</div> <div></div>	<div>PICTORAL</div> <div></div>	<div>ABSTRACT</div> <div>Abstract number line</div> <div></div>		

Thythorn Field Calculation Policy - Division

Division with Arrays		
CONCRETE	PICTORAL	ABSTRACT
<p>Link division to multiplication by creating an array and thinking about the number sentences that can be created.</p> <p>e.g. $15 \div 3 = 5$ $5 \times 3 = 15$ $15 \div 5 = 3$ $3 \times 5 = 15$</p> 	<p>Draw an array and use lines to split the array into groups to make multiplication and division sentences</p> 	<p>Find the inverse of multiplication and division sentences by creating four linking number sentences.</p> <p>$7 \times 4 = 28$ $4 \times 7 = 28$ $28 \div 7 = 4$ $28 \div 4 = 7$</p>
Division with remainders		
CONCRETE	PICTORAL	ABSTRACT
<p>Divide objects between groups and see how much is left over.</p> <p>Use of lollipop sticks to form wholes:- $13 \div 4 =$</p>  <p>Use of Cuisenaire rods and rulers (using repeated subtraction)</p> 		<p>$13 \div 4 = 3 \text{ remainder } 1$</p> <p>Children to count their times table facts in their heads.</p> 
Division using 2 digit by 1 digit		
CONCRETE	PICTORAL	ABSTRACT
<p>Using Base 10 (no remainders)</p> <p>$48 \div 3 = 16$</p>  <p>Start with the tens.</p>	<p>Children to represent the base 10 and sharing pictorially.</p>	<p>$48 \div 4 =$</p> <p>4 tens $\div 4 = 1 \text{ ten}$ 8 ones $\div 4 = 2 \text{ ones}$</p> <p>$10 \div 2 = 5$</p> 

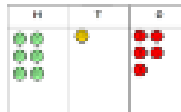

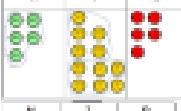
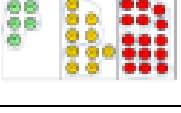
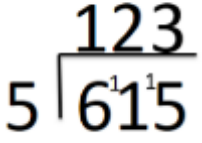
Thythorn Field Calculation Policy - Division

Sharing using place value counters

CONCRETE	PICTORAL	ABSTRACT
<p>$42 \div 3 = 14$</p>  <p>1. Make 42. Share the 4 tens between 3. Can we make an exchange with the extra 10?</p>  <p>Exchange the ten for 10 ones and share out 12 ones</p>		<p>$42 \div 3$</p> <p>$42 = 30 + 12$</p> <p>$30 \div 3 = 10$</p> <p>$12 \div 3 = 4$</p> <p>$10 + 4 = 14$</p>


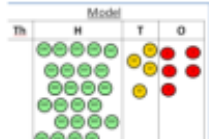
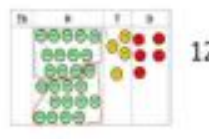
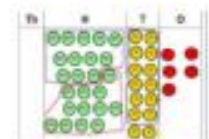
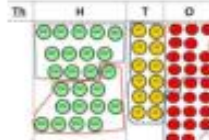
Year 3
Year 4

Bus stop method

CONCRETE	PICTORAL	ABSTRACT
<p>Use of the 'bus stop method' using grouping and counters. Key language for grouping- how many groups of X can we make with X hundreds'- this can also be done using sharing! $615 \div 5$</p>  <p>Step 1: make 615</p>  <p>Step 2: Circle your groups of 5</p>  <p>Step 3: Exchange 1H for 10T and circle groups of 5</p>  <p>Step 4: exchange 1T for 10ones and circles groups of 5</p>	<p>This can easily be represented pictorially, till the children no longer to do it. It can also be done to decimal places if you have a remainder!</p>	

Yr 4 – 6

Thythorn Field Calculation Policy - Division

Long Division		
CONCRETE	PICTORAL	ABSTRACT
<div>  $\begin{array}{r} 212 \\ 12 \overline{) 2544} \\ \underline{24} \\ 14 \\ \underline{12} \\ 24 \\ \underline{24} \\ 0 \end{array}$ <p>2544 ÷ 12</p> <p>How many groups of 12 thousands do we have? None</p> </div> <div>  <p>Exchange 2 thousand for 20 hundreds.</p> </div> <div>  $\begin{array}{r} 02 \\ 12 \overline{) 2544} \\ \underline{24} \\ 1 \end{array}$ <p>How many groups of 12 are in 25 hundreds? 2 groups. Circle them.</p> <p>We have grouped 24 hundreds so can take them off and we are left with one.</p> </div> <div>  $\begin{array}{r} 021 \\ 12 \overline{) 2544} \\ \underline{24} \\ 14 \\ \underline{12} \\ 2 \end{array}$ <p>Exchange the one hundred for ten tens so now we have 14 tens. How many groups of 12 are in 14? 1 remainder 2.</p> </div> <div>  <p>Exchange the two tens for twenty ones so now we have 24 ones. How many groups of 12 are in 24? 2</p> </div>	<p>Children to represent the counters, pictorially and record the subtractions beneath.</p>	<div> $\begin{array}{r} 0 \\ 12 \overline{) 2544} \end{array}$ <p>Step one- exchange 2 thousand for 20 hundreds so we now have 25 hundreds.</p> </div> <div> $\begin{array}{r} 02 \\ 12 \overline{) 2544} \\ \underline{24} \\ 1 \end{array}$ <p>Step two- How many groups of 12 can I make with 25 hundreds? The 24 shows the hundreds we have grouped. The one is how many hundreds we have left.</p> </div> <div> $\begin{array}{r} 021 \\ 12 \overline{) 2544} \\ \underline{24} \\ 14 \\ \underline{12} \\ 2 \end{array}$ <p>Exchange the one hundred for 10 tens. How many groups of 12 can I make with 14 tens? The 14 shows how many tens I have, the 12 is how many I grouped and the 2 is how many tens I have left.</p> </div> <div> $\begin{array}{r} 0212 \\ 12 \overline{) 2544} \\ \underline{24} \\ 14 \\ \underline{12} \\ 24 \\ \underline{24} \\ 0 \end{array}$ <p>Exchange the 2 tens for 20 ones. The 24 is how many ones I have grouped and the 0 is what I have left.</p> </div>

Yr4-6