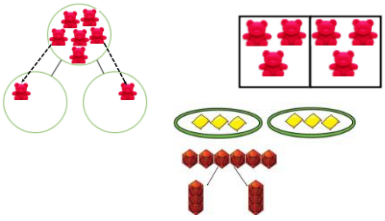
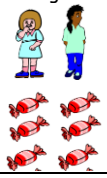
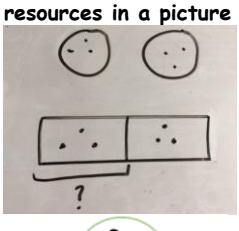
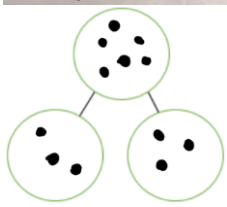
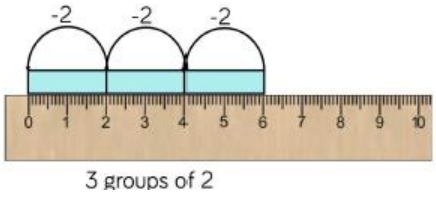
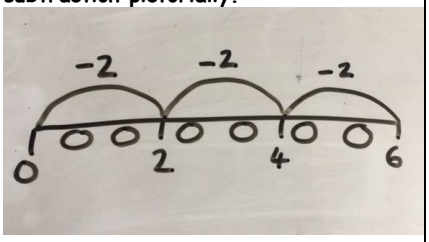
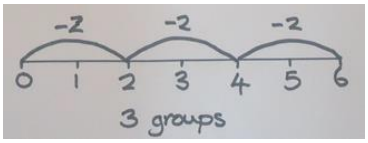
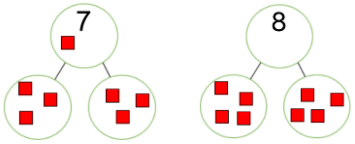
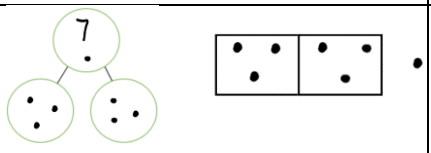
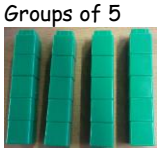
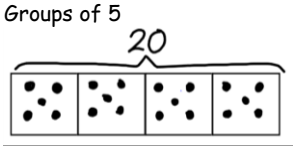
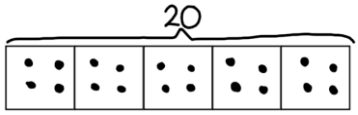
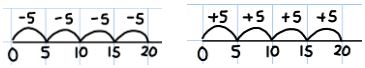
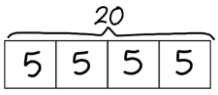
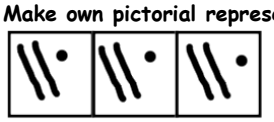
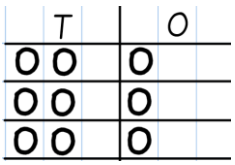
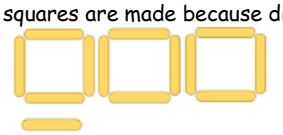
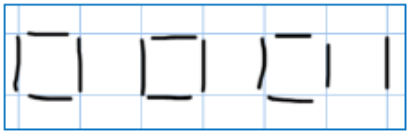
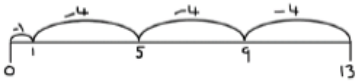
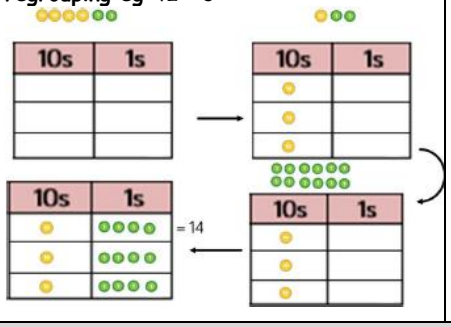
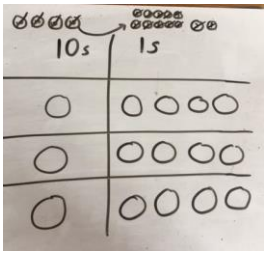
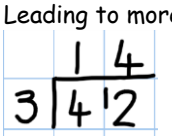
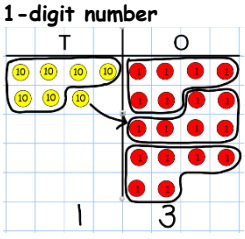
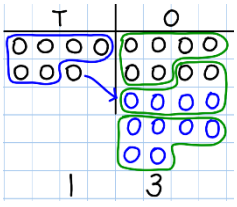
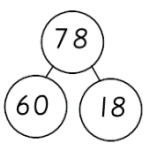
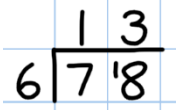
Fourfields Community Primary School

Calculation: Division

'By end of' indicates the expected standard for children achieving age-related expectations.

By	Concrete	Pictorial	Abstract
End Yr FS	Solve problems including doubling, halving and sharing in practical contexts. For example sweets amongst some teddies. 	Teacher may model pictorial representations.	
End Yr 1	**NC** Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.		
	Sharing using a range of objects eg 6shared between 2  Two children share 6 sweets. How many do they each get? 	**Children to represent the practical resources in a picture eg** 6 ÷ 2  	All work to be within the context of a problem eg Jack shares 6 teddies equally between two boxes. How many teddies will there be in each box? 6 – 2 – 2 – 2 =
	Repeated subtraction using different apparatus eg Cuisenaire with number line (ruler)  3 groups of 2	**Children to represent repeated subtraction pictorially.**  	**Abstract number line to represent the equal groups that have been subtracted.** 
	Divide into two equal groups to find odd and even numbers.  **7 is odd** **8 is even**	 	
End Yr 2	**NC** Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.		

	2-digit number ÷ 1-digit number without remainders eg 20 ÷ 5 = as grouping and sharing Groups of 5 Divided into 5 groups  	**Make own pictorial representation** Groups of 5  Divided into 5 groups (sharing) 	**Abstract number line** 20 ÷ 5 = 4  
End Yr 3	**NC** Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.		
	2-digit number ÷ 1-digit number without remainders **63 ÷ 3 =** 	**Make own pictorial representation**  	63 ÷ 3 = 60 3 60 ÷ 3 = 20 3 ÷ 3 = 1 20 + 1 = 21
	2-digit number ÷ 1-digit number with remainders eg using different apparatus eg Cuisenaire rods with a ruler (see above) Use lollipop sticks to form wholes – squares are made because dividing by 4.  There are three whole squares with one left over.	**Make own pictorial representation** 	**Children use the array to write a range of calculations** 
	Share using place value counters without regrouping (eg 48 ÷ 4) **and then with regrouping eg** 42 ÷ 3 	**Make own pictorial representation of the counters** 	**Children to be able to make sense of the place value counters and write calculations to show the process** 42 ÷ 3 = 30 12 30 ÷ 3 = 10 12 ÷ 3 = 4 10 + 4 = 14 Leading to more formal method 
End Yr 4	**NC** Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.		
	Develop work from year 3 dividing a 2-digit number by a 1-digit number eg 78 ÷ 6 = 	**Make own pictorial representation of the counters** 78 ÷ 6 = 	78 ÷ 6 =  

<table>
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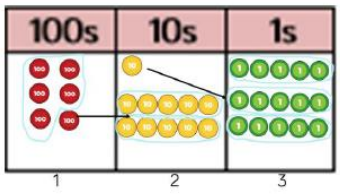
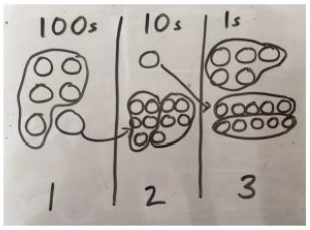
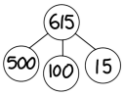
<td>Divide a 3-digit number by a 1-digit number eg 615 ÷ 5 =
 

Make 615 with place value counters.
How many groups of 5 hundreds can you make with 6 hundred counters?
Exchange 1 hundred for 10 tens.
How many groups of 5 tens can you make with 11 ten counters?
Exchange 1 ten for 10 ones.
How many groups of 5 ones can you make with 15 ones?</td>
<td>Make own pictorial representation of the counters
 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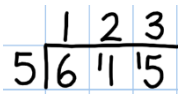
<td>615 ÷ 5 =
  </td>
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<td>End Yr 5</td>
<td colspan="3">NC Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</td>
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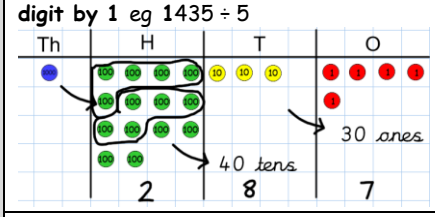
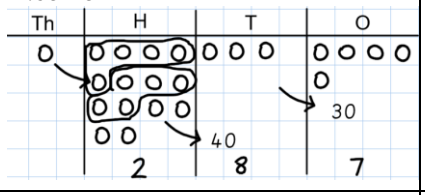
<td>Build upon work in year 4 to multiply 4-digit by 1 eg 1435 ÷ 5
 
</td>
<td>Make own pictorial representation
1435 ÷ 5
 
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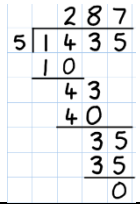
<td>1435 ÷ 5
  </td>
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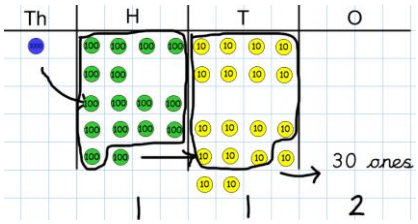
<td>Divide 4-digit by 2-digit number eg 1680 ÷ 15
 
</td>
<td>Make own pictorial representation
1680 ÷ 15</td>
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<td>End Yr 6</td>
<td colspan="3">NC Divide numbers up to 4 digits by a two-digit whole n number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. Solve problems involving addition, subtraction, multiplication and division.</td>
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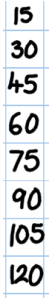
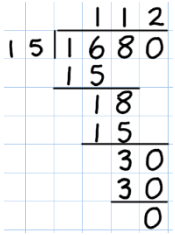
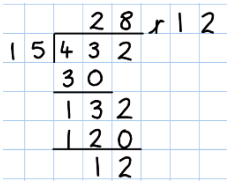
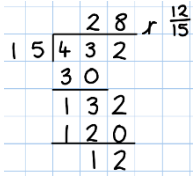
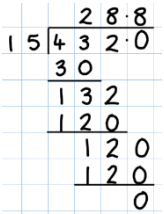
<td></td>
<td colspan="3">Divide 4-digit by 2-digit number, first with numbers without remainders, leading to examples with reminders (whole number, fraction and decimal reminders).
Children to make a list of multiples down the page to support the calculation
 

 
 
 
  </td>
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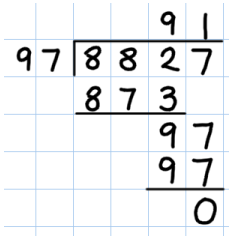
Develop long division with trickier 2-digit numbers *eg* 8827 ÷ 97

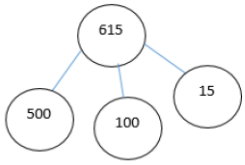
97
194
291
388
485
582
679
776
873



Conceptual variation: different ways to ask children to solve 615 ÷ 5

Using the part whole model below, how can you divide 615 by 5 without using the 'bus stop' method?

Using the part whole model below, how can you divide 615 by 5 without using short division?



I have £615 and share it equally between 5 bank accounts. How much will be in each account?

615 pupils need to be put into 5 groups. How many will be in each group?

$5 \overline{)615}$

$615 \div 5 =$

$\square = 615 \div 5$

Vocabulary:

- divide
- divide by
- share
- share equally
- lots of
- groups of
- group in
- multiple of
- divisor
- dividend
- array
- written method