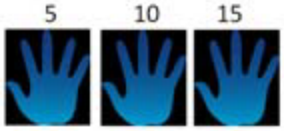
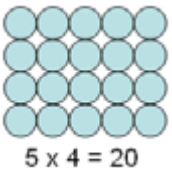
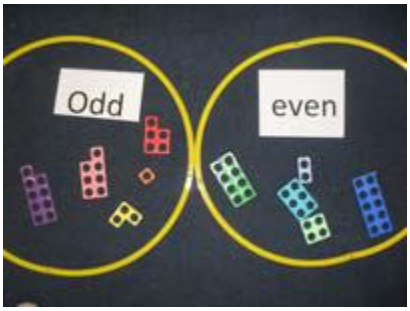
<table>
<tr><td colspan="2">Multiplication and Division Year 1</td></tr>
<tr><td>Mental Calculations</td><td rowspan="2">Solve one step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher
Count in multiples of 2s, 5s and 10s (socks, shoes, animal legs, fingers toes etc)
Doubles up to 10
Odd and even numbers
Number patterns (what comes next)
May be useful to begin writing repeated addition
Experiment with concept of sharing and groups- arrays as the default model)</td></tr>
<tr><td>Written Calculations</td></tr>
<tr><td>Representations to support mental and written calculations</td><td>Use a range of concrete and pictorial representations
 
4 groups of 2p
2p multiplied by 4
2p x 4 = 8p
 

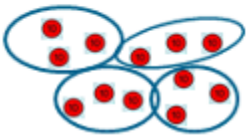
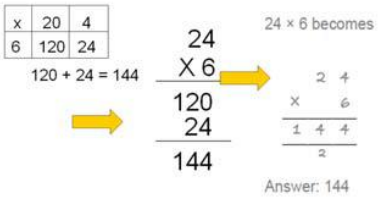
3 + 3 + 3 + 3 = 12
3 multiplied by 4 is 12
3 x 4 = 12
 
  </td></tr>
</table>

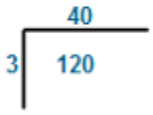
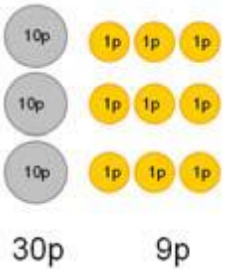
	 
Other Links	Fractions- recognise, find and name a half as one of two equal parts of an object, shape or quantity Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity

Multiplication and Division Year 2	
Mental Calculations	**Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables and making connections between these** Connect the 10 multiplication table to place value Recognise odd and even numbers Show that the multiplication of 2 numbers can be done in any order (commutative) and the division of two number cannot May be useful to begin writing repeated addition Experiment with concept of sharing and groups- arrays as the default model) **Calculate mathematical statements for the 2, 5 and 10 times tables** **Solve problems involving multiplication and division using materials, arrays, repeated addition, mental methods and multiplication and division facts**

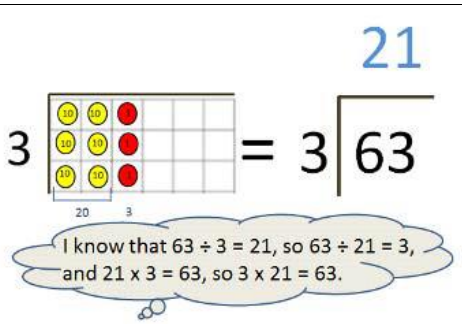
Written Calculations	
Representations to support mental and written calculations	Use a range of concrete and pictorial representations  5 x 4 = 20 3 multiplied by 5 ⟶ 3 x 5 3 + 3 + 3 + 3 + 3 =  0 3 6 9 12 15  
Other Links	Write simple fr… …nce of □ and 2/4 Statistics- tally c… Measurement- 5…

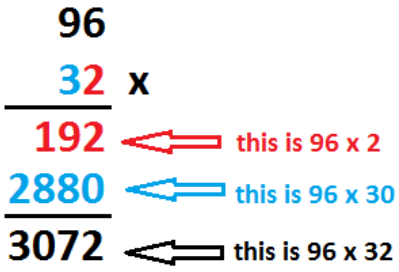
Using dienes if 70 divided by 10 is 7 and 30 divided by 10 is 3, what do you think 90 divided by 9 will be?

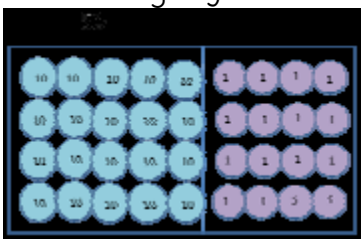
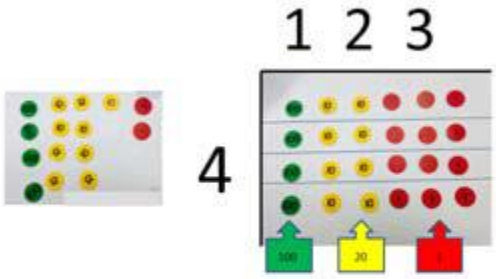
<table>
<tr><td colspan="2">Multiplication and Division Year 3</td></tr>
<tr><td>Mental Calculations</td><td>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
Use doubling to connect 2, 4 and 8 times tables
Develop commutativity and associativity
Write & calc math statements for x & ÷using the tables they know, including 2 digit numbers times 1-digit numbers, using mental methods
Partitioning</td></tr>
<tr><td>Written Calculations</td><td>120 ÷ 3
 
Towards the column method …
 

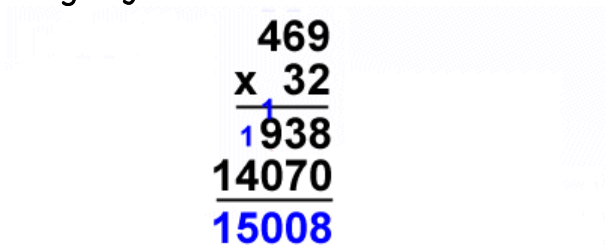
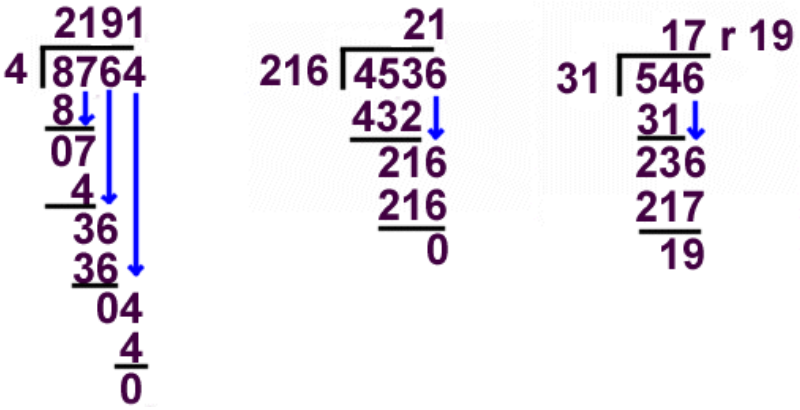
 
</td></tr>
<tr><td>Representations to support mental and written calculations</td><td>Use a range of concrete and pictorial representations
 

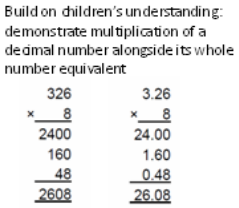
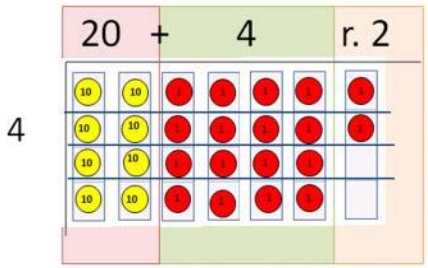
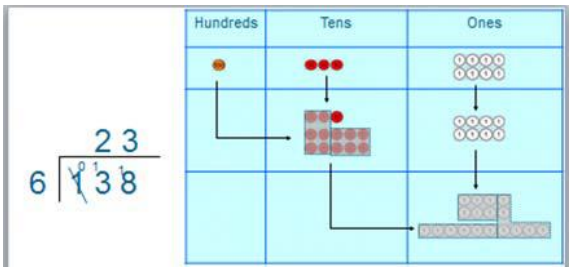
13p x 3
= 10p x 3 + 3p x 3
= 30p + 9p
= 39p</td></tr>
</table>

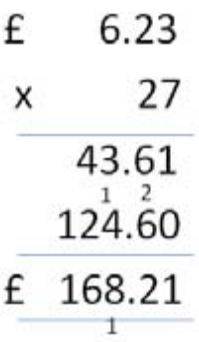
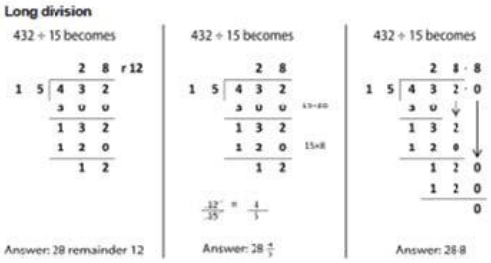
	2 digit x 1 digit number: e.g. 7 x 38 = 266 | x | 30 | 8 | | 7 | 210 | 56 | 210 + 56 = 266 
Other Links	Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. Recognise and show, using diagrams, equivalent fractions with small denominators. Solve problems & missing number problems, involving x & ÷, including integer scaling problems & correspondence problems in which n objects are connected to m objects.

Multiplication and Division Year 4	
Mental Calculations	**Recall multiplication and division facts for multiplication tables up to 12 × 12.** **Recognise and use factor pairs and commutativity in mental calculations.** Using facts and rules
Written Calculations	**Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.** Estimate before calculating Grid and expanded column methods 

Representations to support mental and written calculations	Use a range of concrete and pictorial representations  
Other Links	Recognise and show, using diagrams, families of common equivalent fractions. Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths. Area Converting measures

Multiplication and Division Year 5	
Mental Calculations	Multiply and divide numbers mentally drawing upon known facts Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 Recognise and use square and cube numbers Identify multiples and factors including finding all factor pairs of a number and common factors of two numbers
Written Calculations	Multiply numbers up to 4 digits by a one or two digit number using a formal written method  Divide numbers with up to 4 digits by a 1 digit number using a formal written method, interpreting remainders appropriately 

Representations to support mental and written calculations	Use a range of concrete and pictorial representations   
Other Links	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers

Multiplication and Division Year 6	
Mental Calculations	Perform mental calculations, including with mixed operations and large numbers Use all multiplication tables Use estimation to check answers to calculations and determine an appropriate degree of accuracy Identify the value of each digit in a number given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places Identify common factors, common multiples and prime numbers
Written Calculations	Multiply multi digit numbers up to 4 digits by a two digit number whole number using a formal written method of long multiplication Multiply one digit numbers with up to two decimal places by whole numbers  Divide numbers with up to 4 digits by a 2 digit whole number using long division and interpret reminders as whole number remainders, fractions or by rounding as appropriate Divide numbers up to 4 digits by a two digit number using the formal written method of short division where appropriate interpreting remainders according the to the context 

Representations to support mental and written calculations	Use a range of concrete and pictorial representations | x	8	0.4	0.06
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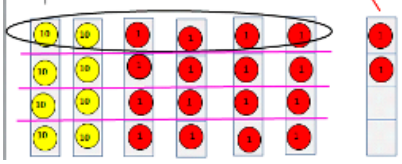
11	88	4.4	0.66	 = 93.06 2 4 r.2 4) 9 ¹8 - 8 0 (4 x 20) 1 8 - 1 6 (4 x 4) 2 20 + 4 r. 2 or 2/4 or 0.5 4) 
Other Links	Multiply simple proper fractions and simplify the answer (e.g. □, ½, ⅛). Divide proper fractions by whole numbers (e.g. ⅓ ÷ 2 = ⅙) Multiply simple proper fractions and simplify the answer (e.g. □, ½, ⅛). Divide proper fractions by whole numbers (e.g. ⅓ ÷ 2 = ⅙)