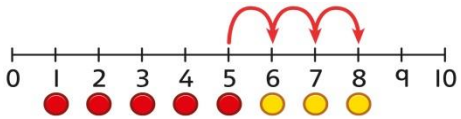
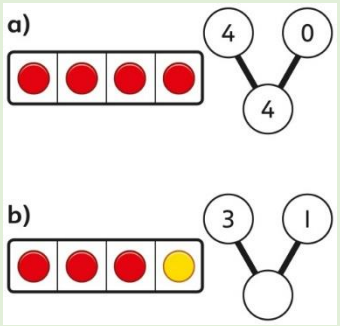
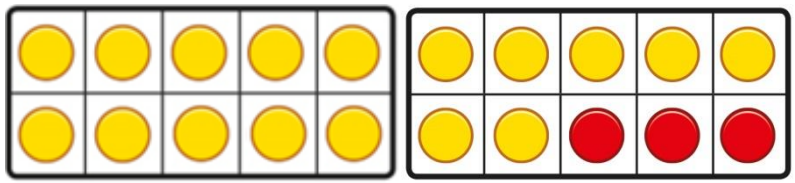
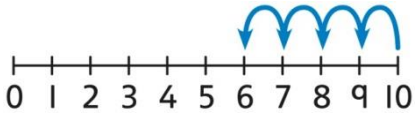
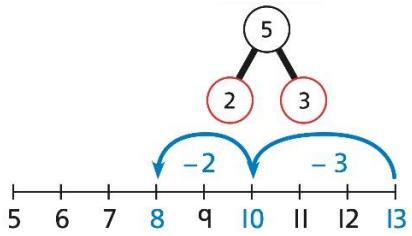
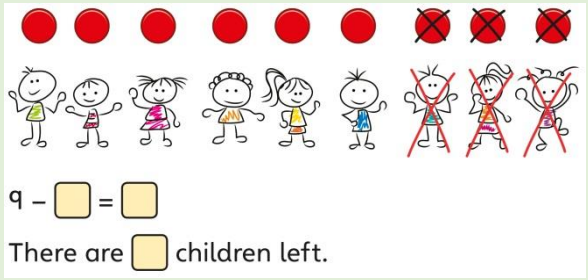
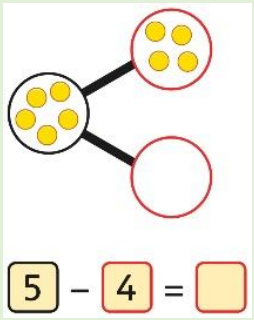
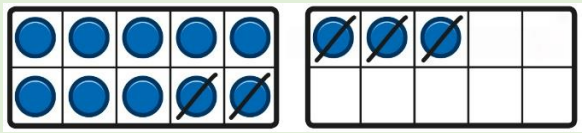
Year 1	
Addition	
Adding one-digit and two-digit numbers to 20 including 0	Write mathematical statements 'number sentences' involving (+) and (=) E.g. 3 + 4 = 7 Children to write number sentences in the correct order, with one digit in each box. Use a number line alongside counters, remove counters once children use this scaffold effectively.  *5 + 3 = 8*
Scaffolding	Children to use cubes, counters and part, part whole models E.g. Two different colours of cubes/counters for each number that is being added and count the total *3 + 4 = 7* E.g. Use counters on a part, part, whole model prior to writing the numerals and constructing the number sentence

	 *4 + 0 = 4* *3 + 1 = 4*
Number bonds	Use tens frames to check answers when representing a number bond to 10, and to then answer derived facts to 20.  *17 + _____ = 20* *I know that 7 + 3 = 10 and 17 is (10 + 7)* *Therefore 17 + 3 = 20*
Subtraction	
Subtract one-digit and two-digit numbers within 20	Write mathematical statements ‘number sentences’ involving (-) and (=) E.g. 9 = 5 = 4 Children to write number sentences in the correct order, with one digit in each box. Count backwards using a number line. E.g.

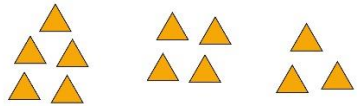
	 *10 − 4 = 6* *The difference between 10 and 6 is 4* *Moving onto -* 
Scaffolding	Children to draw and cross out objects or use counters and remove the amount being subtracted. E.g.  Children to use part, part, whole model to find the missing part. E.g.

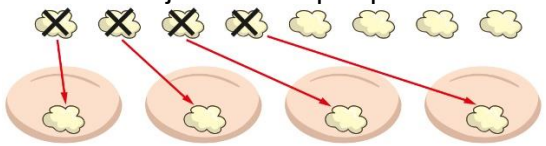


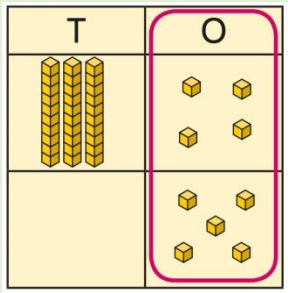
13 – 5 =

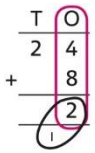


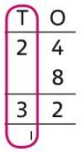
For 13 – 5, I take away 3 to make 10, then take away 2 to make 8.

	Multiplication
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	In order to identify equal groups within a number. Children can use the following scaffolds: Arranging objects: A B C Drawing and representing equal and unequal groups: A B 

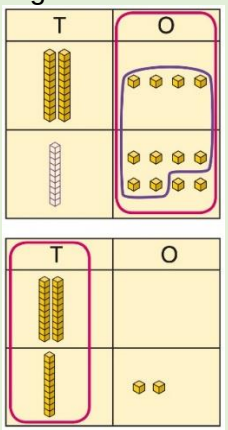
	Counting in 2's, 5's or 10's There are 5 pens in each pack … 5…10…15…20…25…30…35…40
Division	
Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	Share a set of objects into equal parts and work out how many are in each part**.** E.g.  Represent a whole and work out how many equal groups. E.g. *There are 10 in total.* *There are 5 in each group.* *There are 2 groups.*

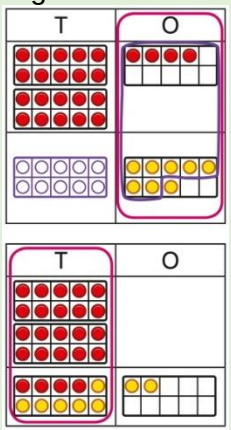
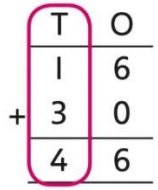
Year 2	
Addition	
Column addition when adding a one-digit number to a two-digit number (without regrouping)	*34 + 5 = 39* T O 3 4 + 5 9
Scaffolding	Use base ten equipment, dienes, drawn representations of tens and ones (e.g. sticks and dots) Add the 1s. *34 is 3 tens and 4 ones.* *4 ones and 5 ones are 9 ones.* *The total is 3 tens and 9 ones.* 

<table>
<tr><td>Column addition when adding a one-digit number to a two-digit number (with regrouping)</td><td colspan="2"> 

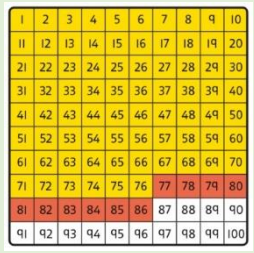
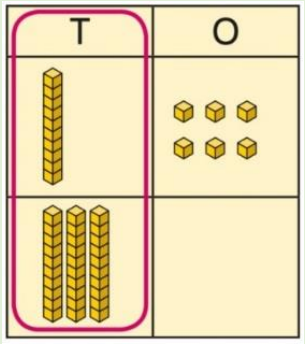
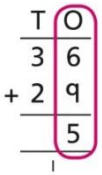
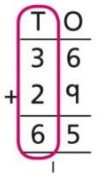
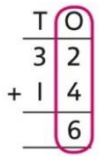
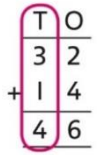


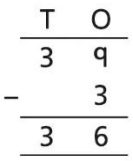
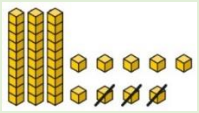
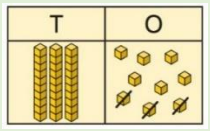
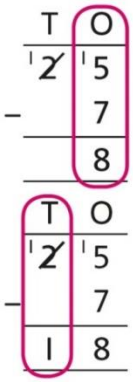
Children to understand that they are exchanging ’10 ones’ for ‘1 ten’</td></tr>
<tr><td>Scaffolding</td><td>Use base ten/dienes equipment

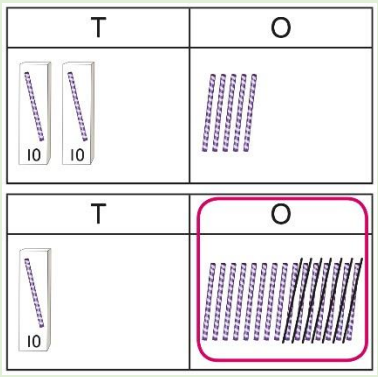
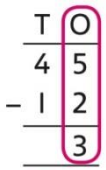
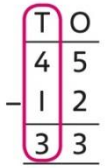
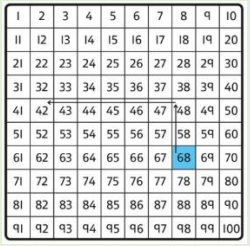
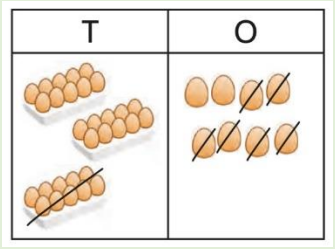
E.g.
 
</td><td>Use tens frames

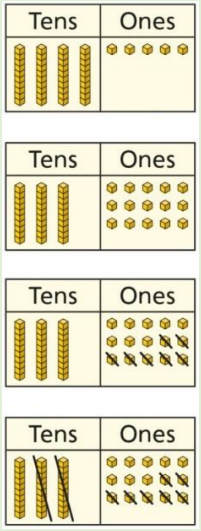
E.g.
 
</td></tr>
<tr><td>Adding a multiple of 10 to a two-digit number</td><td colspan="2">Add the 10s represented vertically. Children must understand how the method relates to unitising of 10s and place value.
 

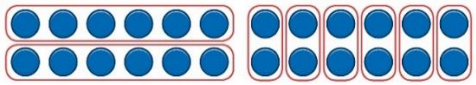
1 + 3 = 4
1 ten + 3 tens = 4 tens
16 + 30 = 46</td></tr>
</table>

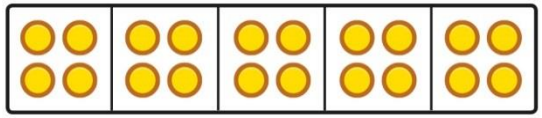
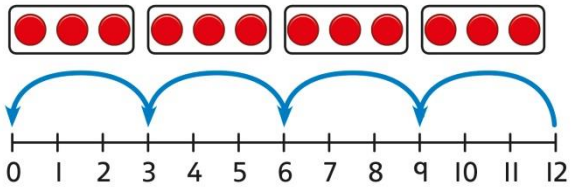
Scaffolding	A 100 square can support this understanding.  	Add the 10s using a place value grid to support.  *16 is 1 ten and 6 ones.* *30 is 3 tens.* *There are 4 tens and 6 ones in total.*
Adding two two-digit numbers (with and without regrouping)	Add the 1s. Exchange 10 ones for a ten. Then add the 10s.   	Add the 1s. Then add the 10s.  
Scaffolding	*As above – place value grids, base ten/diene equipment*	
Subtraction		

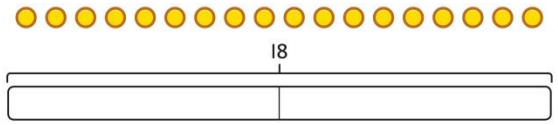
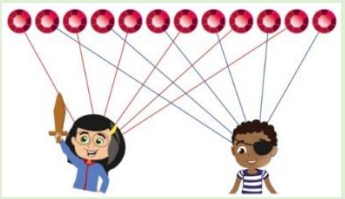
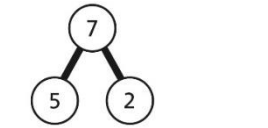
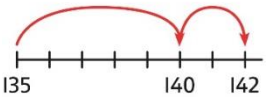
Column subtraction of a one-digit number from a two-digit number (without renaming)	 *9 − 3 = 6* *39 − 3 = 36*
Scaffolding	Subtract the 1s. This may be done in or out of a place value grid.  
Column subtraction of a one-digit number from a two-digit number (with regrouping)	Exchange 1 ten for 10 ones.  *25 − 7 = 18*
Scaffolding	Exchange 1 ten for 10 ones. This may be done in or out of a place value grid.

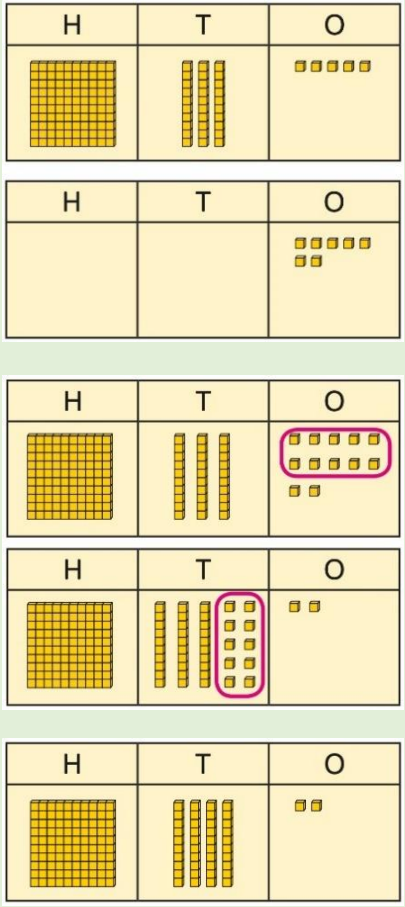
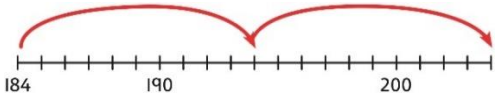
		
Subtracting a two-digit number from a two-digit number (without regrouping)	Using column subtraction, subtract the 1s. Then subtract the 10s.  	
Scaffolding	Subtract the 10s and the 1s. This can be represented on a 100 square. 68 – 26 = 42 	Subtract the 1s. Then subtract the 10s. This may be done in or out of a place value grid. 38 – 16 = 22  *38 − 16 = 22*
Subtracting a two-digit	Using column subtraction, exchange 1 ten for 10 ones. Then subtract the 1s. Then subtract the 10s.	

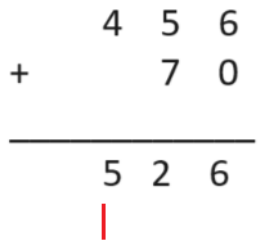
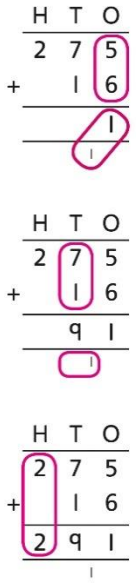
number from a two-digit number (with regrouping)	T O 4 5 − 2 7 _____ T O ~~3~~ ~~4~~ 15 − 2 7 _____ T O ~~3~~ ~~4~~ 15 − 2 7 8 T O ~~3~~ ~~4~~ 15 − 2 7 1 8
Scaffolding	Exchange 1 ten for 10 ones. Then subtract the 1s. Then subtract the 10s. 
Multiplication	

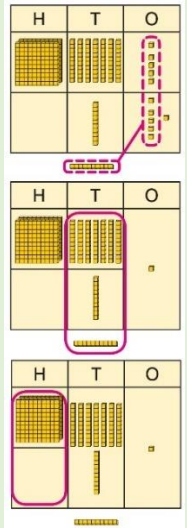
Recall and use multiplication facts for the 2, 5 and 10 multiplication tables	Write multiplication statements (a number sentence) correctly using (x) and (=) symbols. *E.g. 2 x 5 = 10* *9 x 10 = 90* *6 = 3 x 2* Children can represent these statements using arrays and on a number line and begin by expressing multiplication as repeated addition. *5 + 5 + 5 = 15* *3 equal groups of 5 is written as 3 x 5 = 15* *"3 lots of 5" "3 groups of 5"*
Commutativity	Use arrays to visualise commutativity – real life objects are a good way of demonstrating this. *I can see 6 groups of 3.* *I can see 3 groups of 6.* Form arrays using counters to visualise commutativity. Rotate the array to show that orientation does not change the multiplication.  *This is 2 groups of 6 and also 6 groups of 2.* Using knowledge of commutativity will help children to check their answers. *"If 4 groups of 2 is 8, let me check if 2 lots of 4 is 8"*

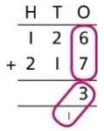
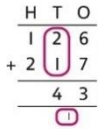
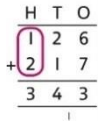
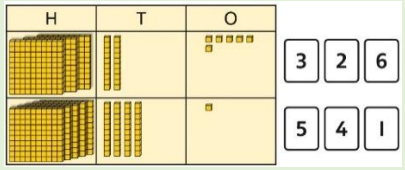
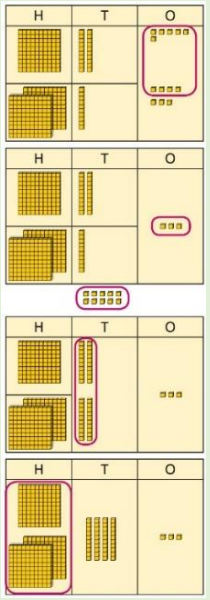
Division		
Recall and use multiplication facts for the 2, 5 and 10 multiplication tables	Write a division statement correctly using (÷) and (=) symbols. Sharing equally Represent the objects shared into equal parts using a bar model.  *20 shared into 5 equal parts.* *There are 4 in each part.* Use a bar model to support understanding of the division.	Write a division statement correctly using (÷) and (=) symbols. Grouping equally Understand how to relate division by grouping to repeated subtraction.  There are 4 groups now.

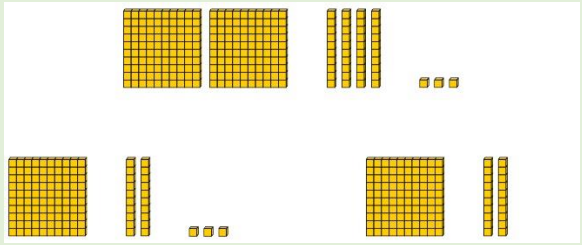
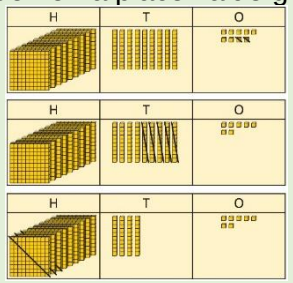
	 *18 ÷ 2 = 9*	*12 divided into groups of 3.* *12 ÷ 3 = 4* *There are 4 groups.*
Scaffolding	Start with a whole and share into equal parts, one at a time.  *12 shared equally between 2.* *They get 6 each.* Start to understand how this also relates to grouping. To share equally between 3 people, take a group of 3 and give 1 to each person. Keep going until all the objects have been shared.	Understand how to make equal groups from a whole. *8 divided into 4 equal groups.* *There are 2 in each group.*
Year 3		
Addition		
Adding a three-digit number and a one-digit number (with regrouping)	Understand how to rename by partitioning to the 1s to make the next 10.   *135 + 7 = ?* *135 + 5 + 2 = 142* Ensure that children understand how to add 1s renaming a 100.	Children to use column method and exchange 10 ones for 1 ten. 4 6 7 + 4 4 7 1

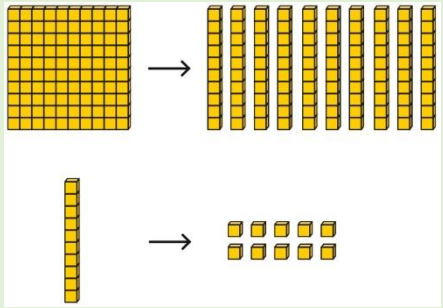
	198 + 5 = ? *198 + 2 + 3 = 203*	
Scaffolding	Exchange 10 ones for 1 ten where needed. Use a place value grid to support the understanding.  *135 + 7 = 142*	
Add a three-digit number with a multiple of ten (with renaming)	Understand how the addition relates to counting on in 10s across 100. 	Column addition with the renaming of the hundreds column, in exchange for 10 tens:

	184 + 20 = ? *I can count in 10s … 194 … 204* *184 + 20 = 204* Use number bonds within 20 to support efficient mental calculations. *385 + 50* *There are 8 tens and 5 tens.* *That is 13 tens.* *385 + 50 = 300 + 130 + 5* *385 + 50 = 435*	
Add a three-digit number and a two-digit number	Without renaming: Use the vertical column method to represent the addition. Children must understand how this relates to place value at each stage of the calculation.	With renaming: Use a column method with exchange. Children must understand how the method relates to place value at each stage of the calculation.  *275 + 16 = 291*

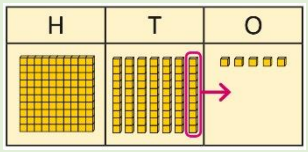
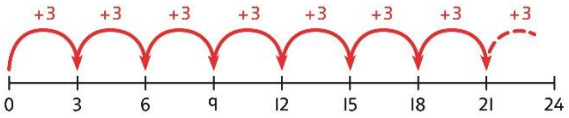
Scaffolding	 Use place value equipment to make and combine groups to model addition. Use a place value grid to organise thinking and adding of 1s, then 10s.	Represent the required exchange on a place value grid using equipment. *275 + 16 = ?*  *275 + 16 = 291* Note: In this example, a mental method may be more efficient. The numbers for the example calculation have been chosen to allow children to visualise the concept and see how the method relates to place value.
Three-digit number add a three-digit number	Without renaming: Use a column method to solve efficiently, using known bonds. Children must understand how this relates to place value at every stage of the calculation.	With renaming: Use column addition, ensuring understanding of place value at every stage of the calculation.

		   *126 + 217 = 343* Note: Children should also study examples where exchange is required in more than one column, for example *185 + 318 = ?*
Scaffolding	Represent the place value grid with equipment to model the stages of column addition. Use place value equipment to make a representation of a calculation. This may or may not be structured in a place value grid. *326 + 541 is represented as:* 	Model the stages of column addition using place value equipment on a place value grid. 

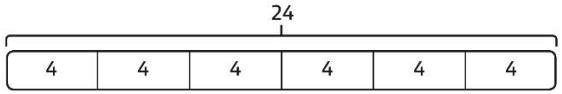
Subtraction		
Three-digit number subtract up to a three-digit number (without renaming)	Use column subtraction to calculate accurately and efficiently. H T O 9 9 9 – 3 5 2 7 H T O 9 9 9 – 3 5 2 4 7 H T O 9 9 9 – 3 5 2 6 4 7	
Scaffolding	 Use place value equipment to explore the effect of splitting a whole into two parts, and understand the link with taking away.	Represent the calculation on a place value grid. 
Three-digit number subtract up to a three-digit number (with renaming)	Use column subtraction to work accurately and efficiently. H T O 1 ~~6~~ 7 15 – 3 8 1 3 7 175 – 38 = 137 If the subtraction is a 3-digit number subtract a 2-digit number, children should understand how the recording relates to the place value, and so how to line up the digits correctly. Children should also understand how to exchange in calculations where there is a zero in the 10s column.	

<table>
<tr><td></td><td colspan="2">
</td></tr>
<tr><td>Scaffolding</td><td>Use equipment to enact the exchange of 1 hundred for 10 tens, and 1 ten for 10 ones.
  </td><td>Model the required exchange on a place value grid.

175 − 38 = ?
I need to subtract 8 ones, so I will exchange a ten for 10 ones.

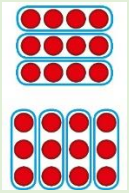
 
</td></tr>
<tr><td colspan="3">Multiplication</td></tr>
<tr><td>Understanding equal grouping and repeated addition for unknown tables.</td><td colspan="2">Children understand the link between repeated addition and multiplication.
 

8 groups of 3 is 24.

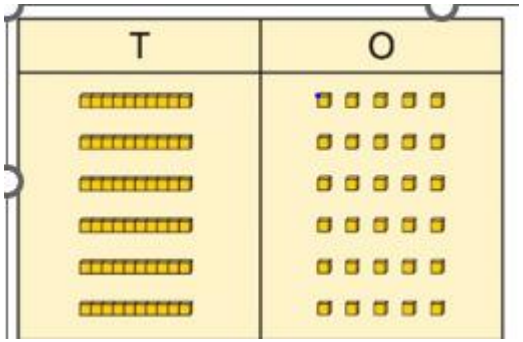
3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 24
8 × 3 = 24
A bar model may represent multiplications as equal groups.
 

6 × 4 = 24</td></tr>
</table>

<table>
<tr><td>Scaffolding</td><td colspan="2">Children recognise that arrays demonstrate commutativity.

This is 3 groups of 4.
This is 4 groups of 3.</td></tr>
<tr><td>Multiplying a two-digit number by a one-digit number</td><td colspan="2">Children may write calculations in expanded column form but must understand the link with place value and exchange.

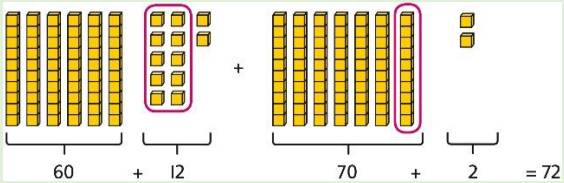
 

<table>
<tr><td></td><td>T</td><td>O</td></tr>
<tr><td></td><td>1</td><td>5</td></tr>
<tr><td>×</td><td></td><td>6</td></tr>
</table></td></tr>
<tr><td>Scaffolding</td><td>Use place value equipment to model how 10 ones are exchanged for a 10 in some multiplications.

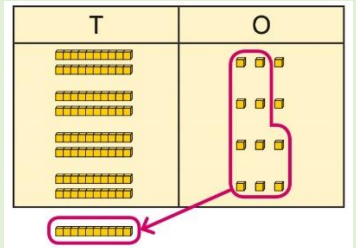
3 × 24 = ?

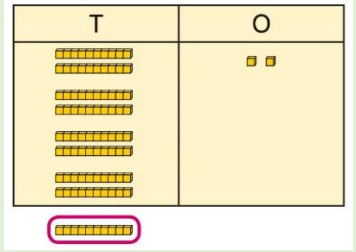
3 × 20 = 60
3 × 4 = 12</td><td>Understand that multiplications may require an exchange of 1s for 10s, and also 10s for 100s.

4 × 23 = ?</td></tr>
</table>

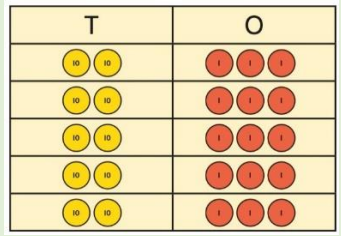


3 × 24 = 60 + 12
3 × 24 = 70 + 2
3 × 24 = 72



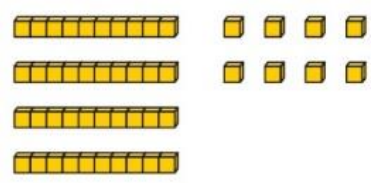
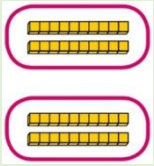


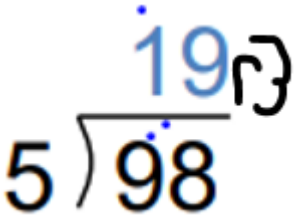
4 × 23 = 92



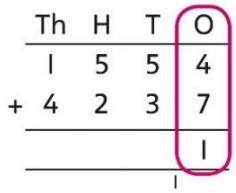
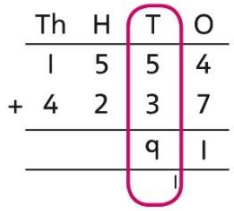
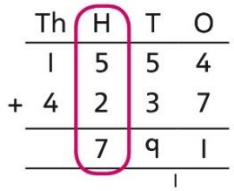
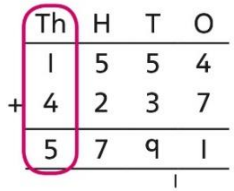
5 × 23 = ?
5 × 3 = 15
5 × 20 = 100
5 × 23 = 115

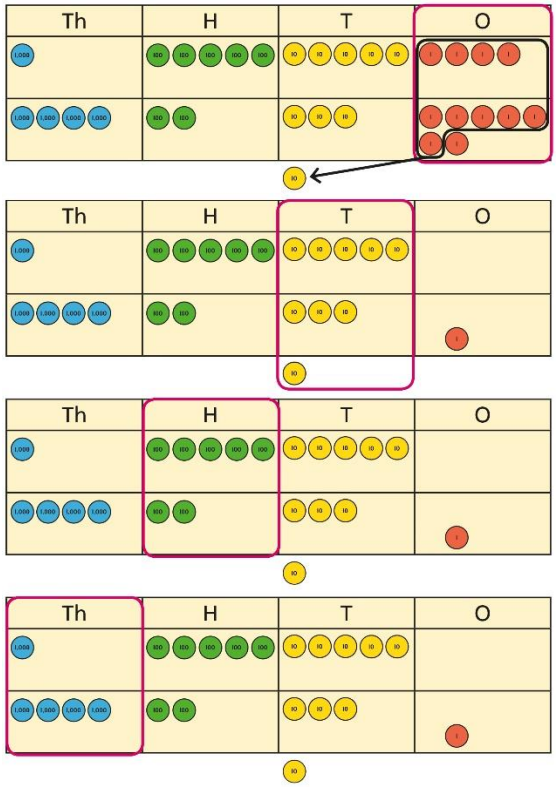
Division

Two-digit number divided by one-digit number, no remainders	$3\overline{)78}$ 26
Scaffolding	Children explore dividing 2-digit numbers by using place value equipment.  *48 ÷ 2 = ?* *First divide the 10s.*  *Then divide the 1s.*

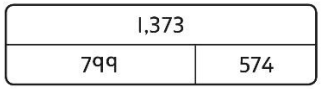
Two-digit number divided by one-digit number, with remainders	
Scaffolding	Use place value equipment to understand the concept of remainder. *Make 29 from place value equipment.* *Share it into 2 equal groups*. *There are two groups of 14 and 1 remainder.*

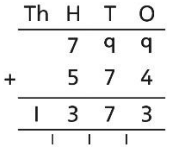
Year 4	
Addition	
Column addition with exchange	Use a column method to add, including exchanges.

	    Include examples that exchange in more than one column.
Scaffolding	Use place value equipment to model required exchanges.

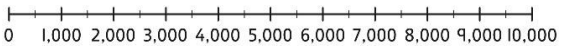
<table>
<tr>
<td></td>
<td colspan="2"> 

Include examples that exchange in more than one column.</td>
</tr>
<tr>
<td>Representing additions and checking strategies</td>
<td>Bar models may be used to represent additions in problem contexts, and to justify mental methods where appropriate.



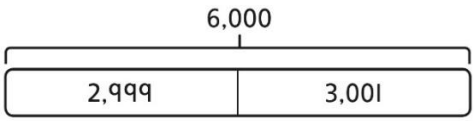
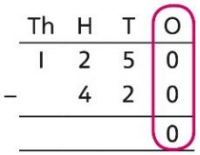
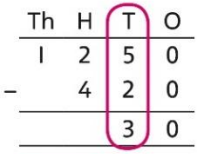
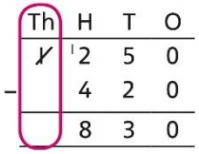


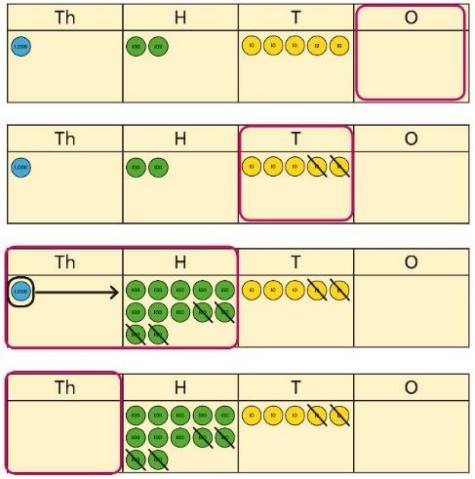
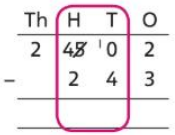
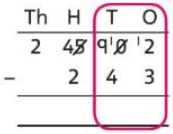
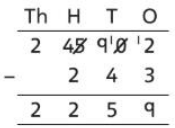
I chose to work out 574 + 800, then subtract 1.</td>
<td>Use rounding and estimating on a number line to check the reasonableness of an addition.

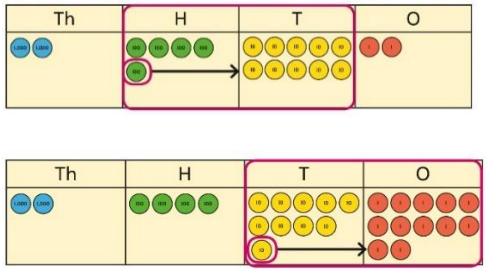


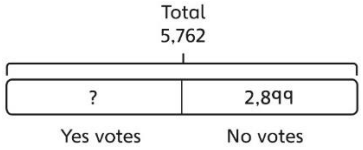
912 + 6,149 = ?

I used rounding to work out that the answer should be approximately 1,000 + 6,000 = 7,000.</td>
</tr>
</table>

	 *This is equivalent to 3,000 + 3,000.*	
Subtraction		
Column subtraction with exchange	Use column subtraction, with understanding of the place value of any exchange required.   	
Scaffolding	Represent place value equipment on a place value grid to subtract, including exchanges where needed.	

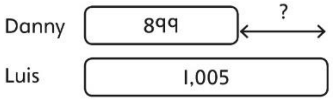
	
Column subtraction with exchange across more than one column	Make exchanges across more than one column where there is a zero as a place holder. *2,502 − 243 = ?*   
Scaffolding	Make exchanges across more than one column where there is a zero as a place holder. *2,502 − 243 = ?*

<table>
<tr><td></td><td colspan="2"> 
</td></tr>
<tr><td>Representing subtractions and checking strategies</td><td>Use bar models to represent subtractions where a part needs to be calculated.

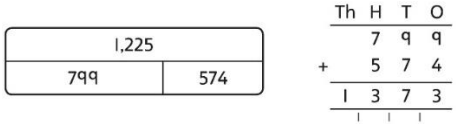
 

I can work out the total number of Yes votes using 5,762 − 2,899.

Bar models can also represent ‘find the difference’ as a subtraction problem.

 
</td><td>Use inverse operations to check subtractions.

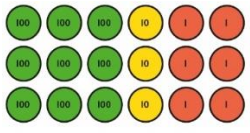
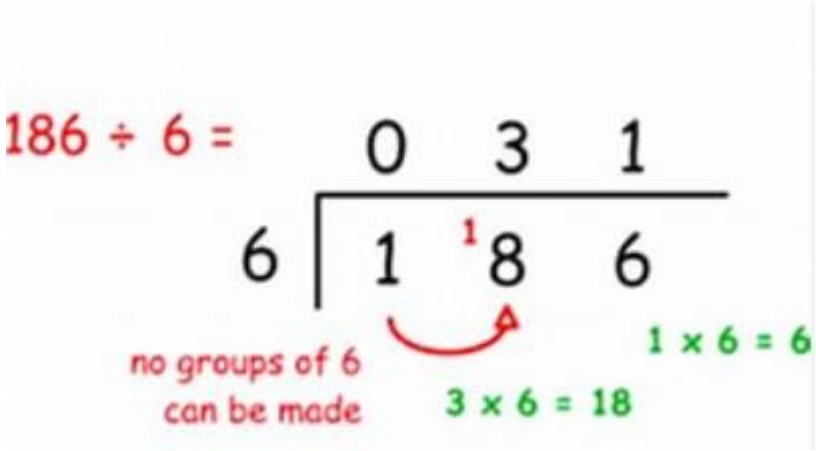
I calculated 1,225 − 799 = 574.
I will check by adding the parts.

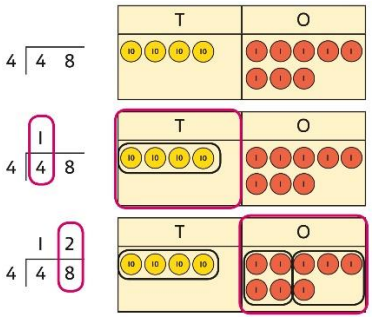
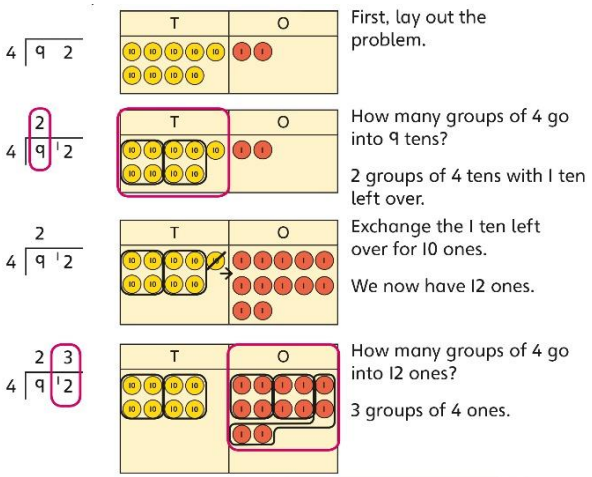
 

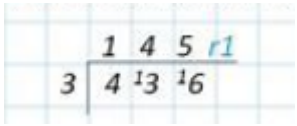
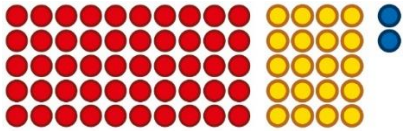
The parts do not add to make 1,225.
I must have made a mistake.</td></tr>
<tr><td colspan="3">Multiplication</td></tr>
<tr><td>Column multiplication for 2- and 3-digit numbers multiplied by a single digit</td><td colspan="2">Use the formal column method for up to
3-digit numbers multiplied by a single digit.

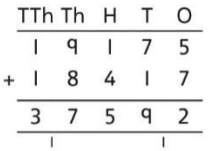
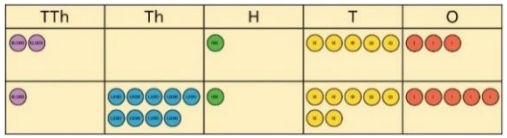
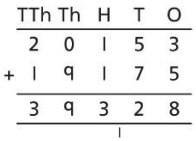
3 1 2
× 3
9 3 6

Understand how the expanded column method is related to the formal column method and understand how any exchanges are related to place value at each stage of the calculation.</td></tr>
</table>

	23 × 5 = 100 + 15 = 115 23 × 5 = 115	
Scaffolding	Use place value equipment alongside a column method for multiplication of up to 3-digit numbers by a single digit.  312 × 3 = 936	
Division		
Dividing up to three digits by a single digit using short division	 	

Scaffolding	Use place value equipment on a place value grid alongside short division. The model uses grouping. A sharing model can also be used, although the model would need adapting.  Lay out the problem as a short division. *There is 1 group of 4 in 4 tens.* *There are 2 groups of 4 in 8 ones.* Work with divisions that require exchange. 

Understanding remainders.	
Scaffolding	Represent the remainder as the part that cannot be shared equally.  72 ÷ 5 = 14 remainder 2

Year 5	
Addition	
Column addition with whole numbers	Use column addition, including exchanges. 
Scaffolding	Represent additions, using place value equipment on a place value grid alongside written methods.  *I need to exchange 10 tens for a 100.* 

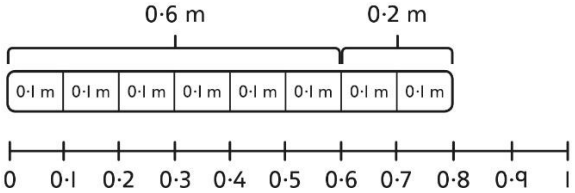
<table>
<tr><td>Adding tenths</td><td colspan="2">Understand the link with adding fractions.

$\frac{6}{10} + \frac{2}{10} = \frac{8}{10}$

6 tenths + 2 tenths = 8 tenths
0·6 + 0·2 = 0·8</td></tr>
<tr><td>Scaffolding</td><td>Link measure with addition of decimals.

Two lengths of fencing are 0·6 m and 0·2 m.
How long are they when added together?

</td><td>Use a bar model with a number line to add tenths.

0·6 + 0·2 = 0·8
6 tenths + 2 tenths = 8 tenths</td></tr>
<tr><td>Adding decimals using column addition</td><td colspan="2">Add using a column method, ensuring that children understand the link with place value.

<table>
<tr><th></th><th>O</th><th>·</th><th>Tth</th><th>Hth</th></tr>
<tr><td></td><td>0</td><td>·</td><td>2</td><td>3</td></tr>
<tr><td>+</td><td>0</td><td>·</td><td>4</td><td>5</td></tr>
<tr><td></td><td>0</td><td>·</td><td>6</td><td>8</td></tr>
</table>
Include exchange where required, alongside an understanding of place value.

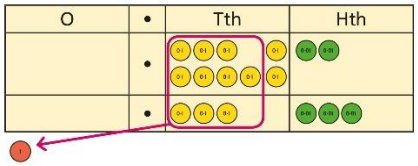
<table>
<tr><th></th><th>O</th><th>·</th><th>Tth</th><th>Hth</th></tr>
<tr><td></td><td>0</td><td>·</td><td>9</td><td>2</td></tr>
<tr><td>+</td><td>0</td><td>·</td><td>3</td><td>3</td></tr>
<tr><td></td><td>1</td><td>·</td><td>2</td><td>5</td></tr>
<tr><td></td><td>1</td><td></td><td></td><td></td></tr>
</table>
Include additions where the numbers of decimal places are different.

3.4 + 0.65 = ?

<table>
<tr><th></th><th>O</th><th>·</th><th>Tth</th><th>Hth</th></tr>
<tr><td></td><td>3</td><td>·</td><td>4</td><td>0</td></tr>
<tr><td>+</td><td>0</td><td>·</td><td>6</td><td>5</td></tr>
<tr><td></td><td></td><td>·</td><td></td><td></td></tr>
</table></td></tr>
</table>

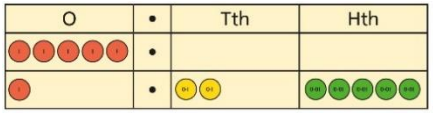
<table>
<tr><td>Scaffolding</td><td colspan="2">Use place value equipment on a place value grid to represent additions.

Represent exchange where necessary.

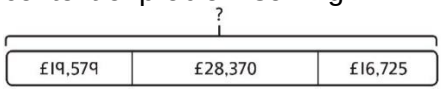
	O	·	Tth	Hth
	0	·	9	2
+	0	·	3	3
	1	·	2	5

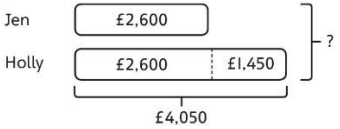
Include examples where the numbers of decimal places are different.

	O	·	Tth	Hth
	5	·	0	0
+	1	·	2	5
	6	·	2	5

</td></tr>
<tr><td>Checking strategies and representing additions</td><td>Bar models represent addition of two or more numbers in the context of problem solving.

Th	H	T	O
2	6	0	0
+ 1	4	5	0
4	0	5	0

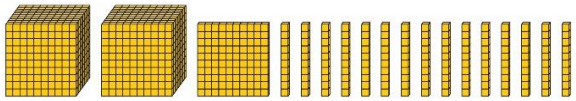
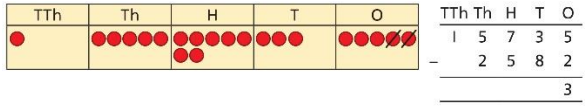
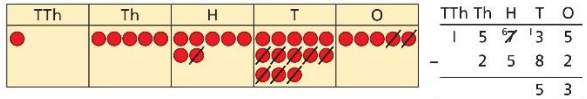
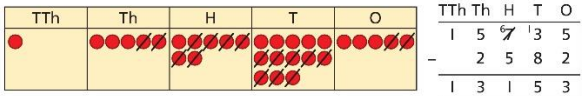
Th	H	T	O
2	6	0	0
+ 4	0	5	0
6	6	5	0

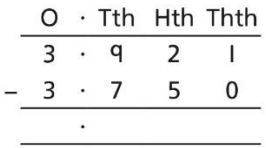
</td><td>Use approximation to check whether answers are reasonable.

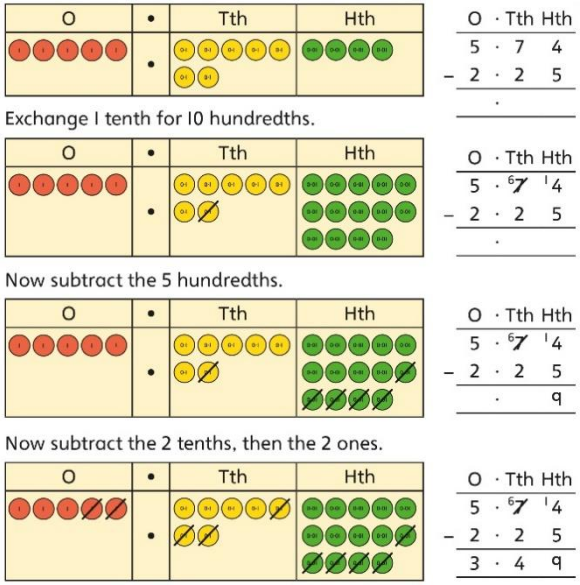
TTh	Th	H	T	O
2	3	4	0	5
+	7	8	9	2
2	0	2	9	7

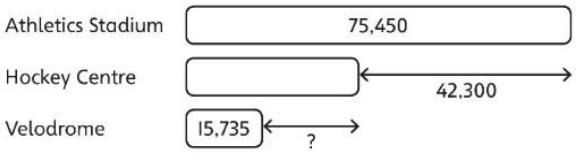
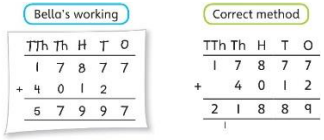
TTh	Th	H	T	O
2	3	4	0	5
+	7	8	9	2
3	1	2	9	7

I will use 23,000 + 8,000 to check.</td></tr>
<tr><td colspan="3">Subtraction</td></tr>
<tr><td>Column subtraction with whole numbers</td><td colspan="2">Use column subtraction methods with exchange where required.</td></tr>
</table>

	TTh Th H T O $^{5}\not{6}$ $^{11}\not{2}$ $^{1}0$ 9 7 − 1 8 5 3 4 4 3 5 6 3 *62,097 − 18,534 = 43,563*
Scaffolding	Use place value equipment to understand where exchanges are required. *2,250 – 1,070*  **OR** Represent the stages of the calculation using place value equipment on a grid alongside the calculation, including exchanges where required. *15,735 − 2,582 = 13,153*  TTh Th H T O 1 5 7 3 5 − 2 5 8 2 3 Now subtract the 10s. Exchange 1 hundred for 10 tens.  TTh Th H T O 1 5 $^{6}\not{7}$ $^{1}3$ 5 − 2 5 8 2 5 3 Subtract the 100s, 1,000s and 10,000s.  TTh Th H T O 1 5 $^{6}\not{7}$ $^{1}3$ 5 − 2 5 8 2 1 3 1 5 3

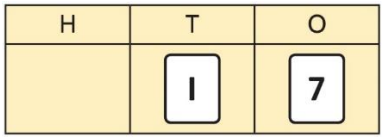
Subtracting decimals	Explore complements to a whole number by working in the context of length. 1 m – ☐ m = ☐ m *1 − 0·49 = ?*	Use column subtraction, with an understanding of place value, including subtracting numbers with different numbers of decimal places. *3·921 − 3·75 = ?* 
Scaffolding	Use a place value grid to represent the stages of column subtraction, including exchanges where required. *5·74 − 2·25 = ?*	

<table>
<tr>
<td></td>
<td colspan="2">


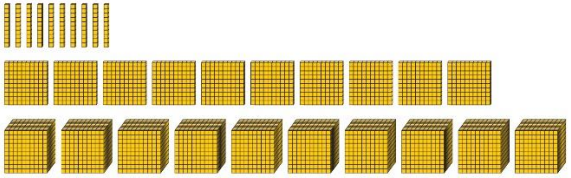
</td>
</tr>
<tr>
<td>Checking strategies and representing subtractions</td>
<td>Bar models represent subtractions in problem contexts, including ‘find the difference’.
 
</td>
<td>Children can explain the mistake made when the columns have not been ordered correctly.
 

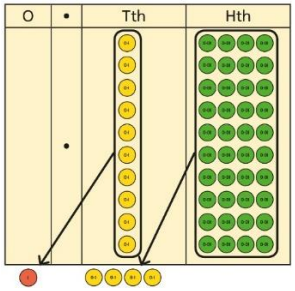
Use approximation to check calculations.
I calculated 18,000 + 4,000 mentally to check my subtraction.
Use addition to check subtractions.
I calculated 7,546 − 2,355 = 5,191.
I will check using the inverse.</td>
</tr>
<tr><td colspan="3"></td></tr>
<tr>
<td></td>
<td colspan="2">Multiplication</td>
</tr>
</table>

<table>
<tr><td>Multiplying by 10, 100 and 1,000</td><td colspan="3">Understand how exchange relates to the digits when multiplying by 10, 100 and 1,000.

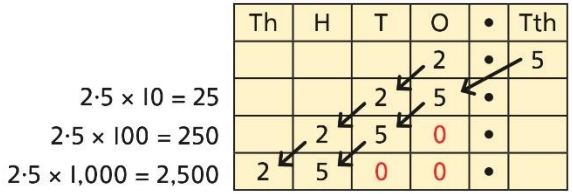
 

17 × 10 = 170
17 × 100 = 17 × 10 × 10 = 1,700
17 × 1,000 = 17 × 10 × 10 × 10 = 17,000</td></tr>
<tr><td>Scaffolding</td><td colspan="3">Understand the effect of repeated multiplication by 10.

  </td></tr>
<tr><td></td><td>Use place value equipment to explore and understand the exchange of 10 tenths, 10 hundredths or 10 thousandths.</td><td>Represent multiplication by 10 as exchange on a place value grid.

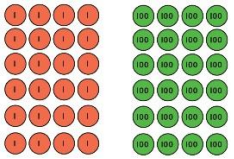
 

0·14 × 10 = 1·4</td><td>Understand how this exchange is represented on a place value chart.

 
</td></tr>
<tr><td>Multiplying by multiples of 10, 100 and 1,000</td><td colspan="3">Use known facts to multiply.

5 × 4 = 20
5 × 40 = 200
5 × 400 = 2,000
5 × 4,000 − 20,000</td></tr>
</table>

<table>
<tr><td></td><td colspan="3">5,000 × 4 = 20,000</td></tr>
<tr><td>Scaffolding</td><td colspan="3">Use place value equipment to represent how to multiply by multiples of 10, 100 and 1,000.

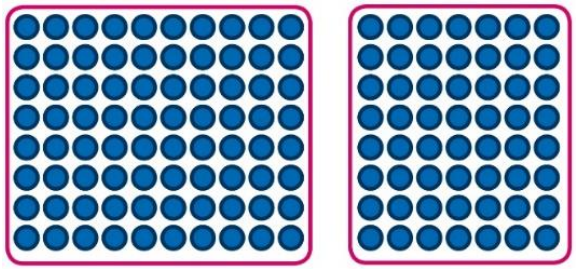
 

4 × 3 = 12
4 × 300 = 1,200

6 × 4 = 24
6 × 400 = 2,400</td></tr>
<tr><td>Multiplying up to 4-digit numbers by a single digit</td><td colspan="3">Use a column multiplication, including any required exchanges.

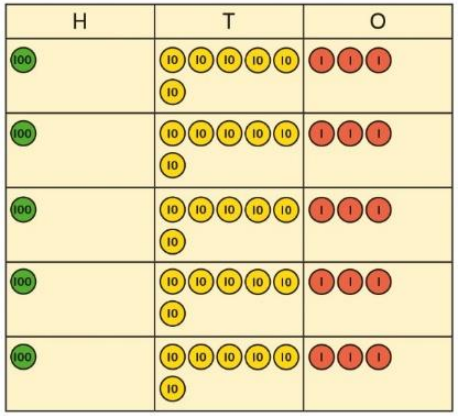
<table>
<tr><td></td><td>1</td><td>3</td><td>6</td></tr>
<tr><td>×</td><td></td><td></td><td>6</td></tr>
<tr><td></td><td>8</td><td>1</td><td>6</td></tr>
<tr><td></td><td></td><td>2</td><td>3</td></tr>
</table></td></tr>
<tr><td>Scaffolding</td><td>Explore how to use partitioning to multiply efficiently.

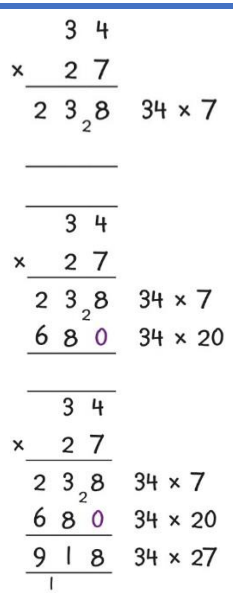
8 × 17 = ?

 
8 × 10 = 80 8 × 7 = 56

80 + 56 = 136

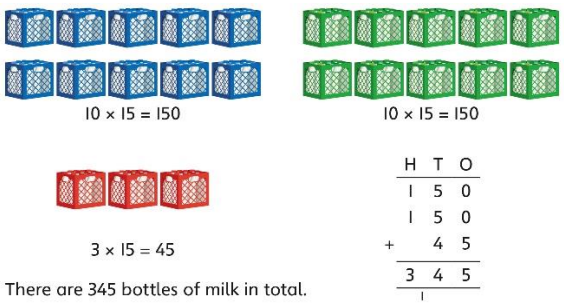
So, 8 × 17 = 136</td><td>Represent multiplications using place value equipment and add the 1s, then 10s, then 100s, then 1,000s.

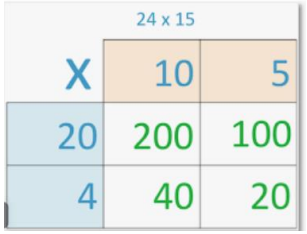
 
</td><td>GRID METHOD?</td></tr>
<tr><td>Multiplying 2-digit numbers</td><td colspan="3">Use column multiplication, ensuring understanding of place value at each stage.</td></tr>
</table>

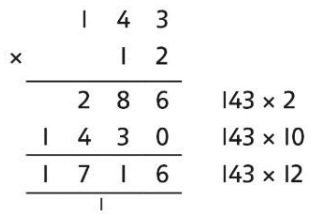
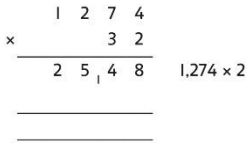
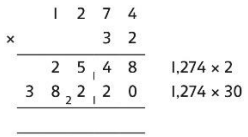
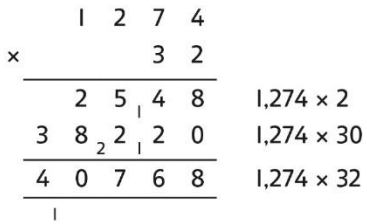
<table>
<tr>
<td>by 2-digit numbers</td>
<td colspan="2">


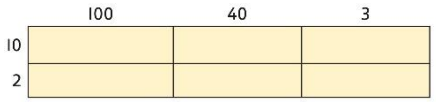
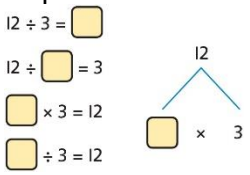
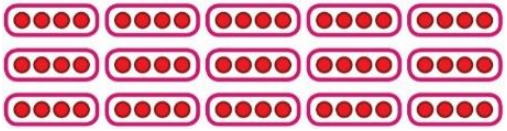
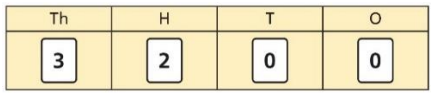
</td>
</tr>
<tr>
<td>Scaffolding</td>
<td>Partition one number into 10s and 1s, then add the parts.

23 × 15 = ?

23 × 15 = 345</td>
<td> 
</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiplying up to 4-digits by 2-digits</td>
<td colspan="2">Use column multiplication, ensuring understanding of place value at each stage.</td>
</tr>
</table>

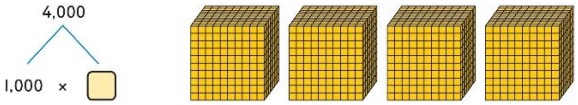
	143 × 12  143 × 2 143 × 10 143 × 12 Progress to include examples that require multiple exchanges as understanding, confidence and fluency build. *1,274 × 32 = ?* *First multiply 1,274 by 2.*  1,274 × 2 *Then multiply 1,274 by 30.*  1,274 × 2 1,274 × 30 *Finally, find the total.*  1,274 × 2 1,274 × 30 1,274 × 32 *1,274 × 32 = 40,768*
Scaffolding	Use the grid method then add the parts.

	 143 × 12 = 1,716 There are 1,716 boxes of cereal in total. *143 × 12 = 1,716*
Division	
Understanding inverse operations and the link with multiplication, grouping and sharing	Represent the different multiplicative relationships to solve problems requiring inverse operations.  Understand missing number problems for division calculations and know how to solve them using inverse operations. *22 ÷ ? = 2* *22 ÷ 2 = ?* *? ÷ 2 = 22* *? ÷ 22 = 2*
Scaffolding	Represent multiplicative relationships and explore the families of division facts.  *60 ÷ 4 = 15* *60 ÷ 15 = 4*
Dividing whole numbers by 10, 100 and 1,000	Understand how and why the digits change on a place value grid when dividing by 10, 100 or 1,000. 

<table>
<tr><td></td><td colspan="2">3,200 ÷ 100 = ?

3,200 is 3 thousands and 2 hundreds.
200 ÷ 100 = 2
3,000 ÷ 100 = 30
3,200 ÷ 100 = 32

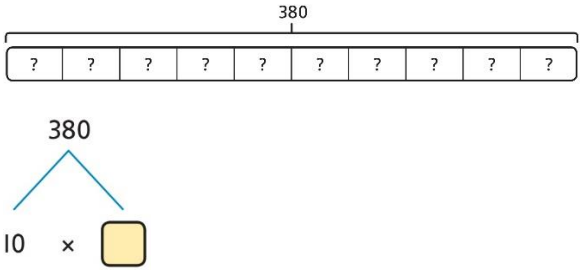
So, the digits will move two places to the right.</td></tr>
<tr><td>Scaffolding</td><td>Use place value equipment to support unitising for division.

4,000 ÷ 1,000
 

4,000 is 4 thousands.

4 × 1,000= 4,000

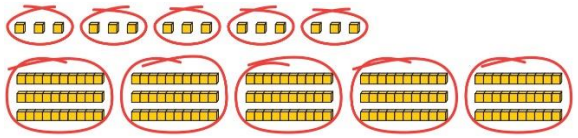
So, 4,000 ÷ 1,000 = 4</td><td>Use a bar model to support dividing by unitising.

380 ÷ 10 = 38
 

380 is 38 tens.
38 × 10 = 380
10 × 38 = 380
So, 380 ÷ 10 = 38</td></tr>
<tr><td>Dividing by multiples of 10, 100 and 1,000</td><td colspan="2">Reason from known facts, based on understanding of unitising. Use knowledge of the inverse relationship to check.

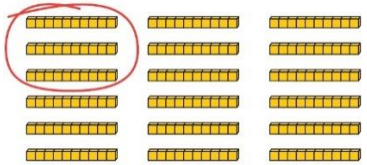
3,000 ÷ 5 = 600
3,000 ÷ 50 = 60
3,000 ÷ 500 = 6

5 × 600 = 3,000
50 × 60 = 3,000
500 × 6 = 3,000</td></tr>
<tr><td>Scaffolding</td><td>Use place value equipment to represent known facts and unitising.</td><td>Represent related facts with place value equipment when dividing by unitising.</td></tr>
</table>

<table>
<tr>
<td></td>
<td> 

15 ones put into groups of 3 ones. There are 5 groups.
15 ÷ 3 = 5

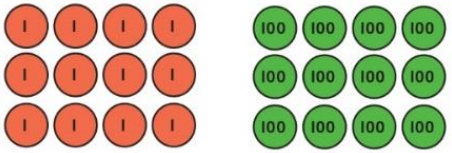
15 tens put into groups of 3 tens. There are 5 groups.

150 ÷ 30 = 5</td>
<td> 

180 is 18 tens.

18 tens divided into groups of 3 tens. There are 6 groups.

180 ÷ 30 = 6

12 ones divided into groups of 4. There are 3 groups.

12 hundreds divided into groups of 4 hundreds. There are 3 groups.

1200 ÷ 400 = 3</td>
</tr>
<tr>
<td>Dividing up to four digits by a single digit using short division</td>
<td colspan="2">Use short division for up to 4-digit numbers divided by a single digit.

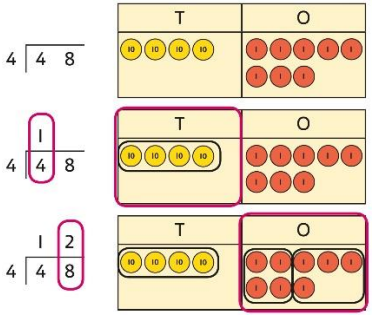
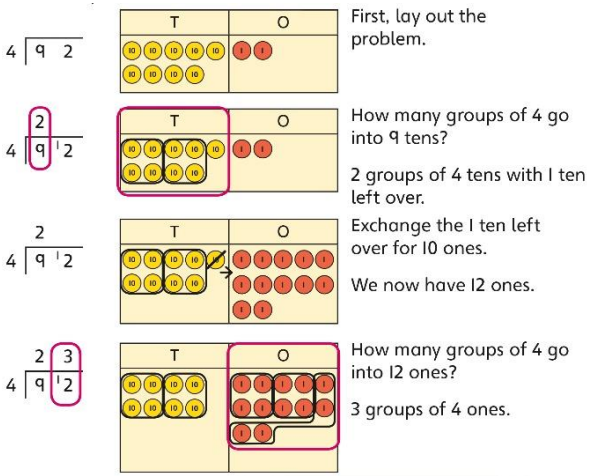
<table>
<tr><td></td><td>0</td><td>5</td><td>5</td><td>6</td></tr>
<tr><td>7</td><td colspan="4">3 38 39 42</td></tr>
</table>

3,892 ÷ 7 = 556

Use multiplication to check.

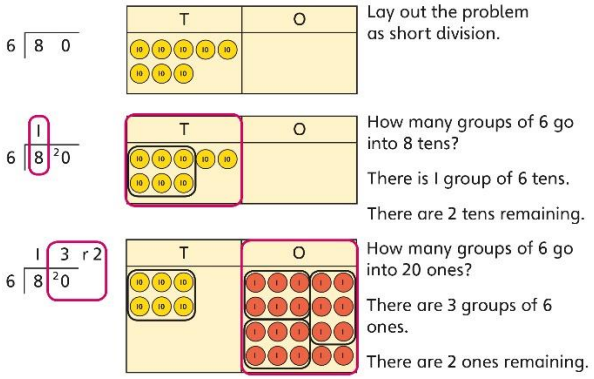
556 × 7 = ?

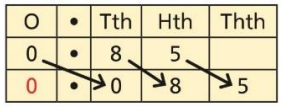
6 × 7 = 42
50 × 7 = 350
500 × 7 = 3500</td>
</tr>
</table>

	3,500 + 350 + 42 = 3,892
Scaffolding	Use place value equipment on a place value grid alongside short division. The model uses grouping. A sharing model can also be used, although the model would need adapting.  Lay out the problem as a short division. *There is 1 group of 4 in 4 tens.* *There are 2 groups of 4 in 8 ones.* Work with divisions that require exchange. 

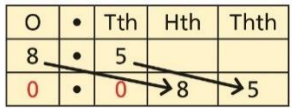
<table>
<tr><td>Understanding remainders</td><td colspan="2">Use short division method above.</td></tr>
<tr><td>Scaffolding</td><td>Understand remainders using concrete versions of a problem.

80 cakes divided into trays of 6.

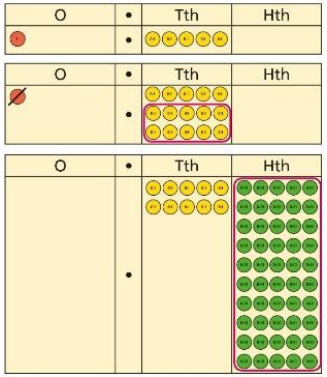
80 cakes in total. They make 13 groups of 6, with 2 remaining</td><td>Use short division and understand remainders as the last remaining 1s.
 
</td></tr>
<tr><td>Dividing decimals by 10, 100 and 1,000</td><td colspan="2">Understand the movement of digits on a place value grid.

0·85 ÷ 10 = 0·085

8·5 ÷ 100 = 0·085</td></tr>
<tr><td>Scaffolding</td><td colspan="2">Represent division using exchange on a place value grid.</td></tr>
</table>



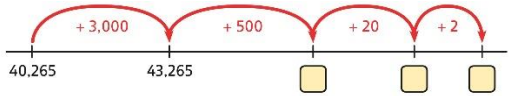
1·5 is 1 one and 5 tenths.
This is equivalent to 10 tenths and 50 hundredths.
10 tenths divided by 10 is 1 tenth.
50 hundredths divided by 10 is 5 hundredths.
1·5 divided by 10 is 1 tenth and 5 hundredths.
1·5 ÷ 10 = 0.15

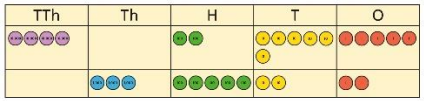
Year 6

Addition

Comparing and selecting efficient methods

Discuss similarities and differences between methods, and choose efficient methods based on the specific calculation.
Compare written and mental methods alongside place value representations.





	TTh	Th	H	T	O
	4	0	2	6	5
+		3	5	2	2

Use bar model and number line representations to model addition in problem-solving and measure contexts.

Use column addition where mental methods are not efficient. Recognise common errors with column addition.

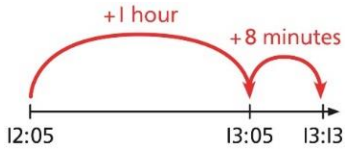
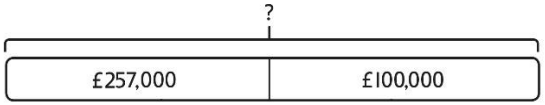
32,145 + 4,302 = ?

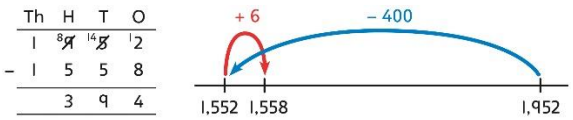
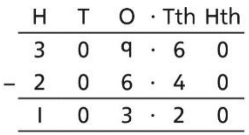
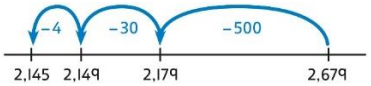
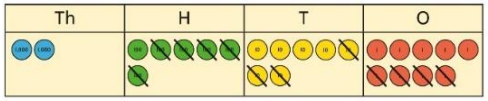
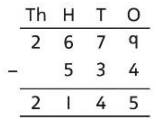
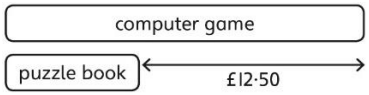
	TTh	Th	H	T	O
	3	2	1	4	5
+		4	3	0	2
	3	6	4	4	7

	TTh	Th	H	T	O
	3	2	1	4	5
+	4	3	0	2	
	7	5	1	6	5

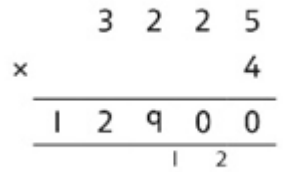
Which method has been completed accurately?

What mistake has been made?

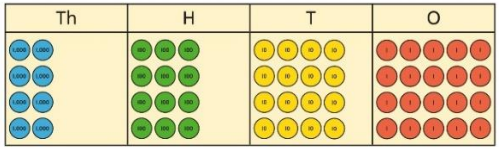
		Column methods are also used for decimal additions where mental methods are not efficient. H T O · Tth Hth 1 4 0 · 0 9 + 4 9 · 8 9 1 8 9 · 9 8 1
Problem solving	Use a bar model to support thinking in addition problems. *257,000 + 99,000 = ?*  *I added 100 thousands then subtracted 1 thousand.* *257 thousands + 100 thousands = 357 thousands* *257,000 + 100,000 = 357,000* *357,000 – 1,000 = 356,000* *So, 257,000 + 99,000 = 356,000*	
Subtraction		
Comparing and selecting efficient methods	Compare and select methods. Use column subtraction when mental methods are not efficient. Use two different methods for one calculation as a checking strategy.	

	 Use column subtraction for decimal problems, including in the context of measure. 
Scaffolding	Compare subtraction methods alongside place value representations.    Use a bar model to represent calculations, including ‘find the difference’ with two bars as comparison. 
Multiplication	
Multiplying up to a 4-digit number by a single digit number	

<table>
<tr><td></td><td colspan="2">



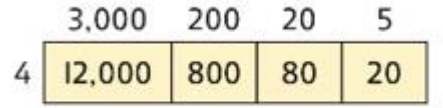
</td></tr>
<tr><td>Scaffolding</td><td>Use equipment to explore multiplications.

4 groups of 2,345

This is a multiplication:

4 × 2,345
2,345 × 4</td><td>

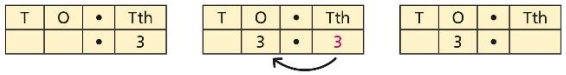


12,000 + 800 + 80 + 20 = 12,900</td></tr>
<tr><td>Multiplying up to a 4-digit number by a 2-digit number</td><td colspan="2">Use compact column multiplication

</td></tr>
</table>

<table>
<tr><td>Scaffolding</td><td>Method I
<table><tr><td></td><td>1,000</td><td>200</td><td>30</td><td>5</td></tr><tr><td>20</td><td>20,000</td><td>4,000</td><td>600</td><td>100</td></tr><tr><td>1</td><td>1,000</td><td>200</td><td>30</td><td>5</td></tr></table></td><td></td><td></td></tr>
<tr><td>Multiplying by 10, 100 and 1,000</td><td colspan="3">Use knowledge of multiplying by 10, 100 and 1,000 to multiply by multiples of 10, 100 and 1,000.

8 × 100 = 800
8 × 300 = 800 × 3
= 2,400

2·5 × 10 = 25
2·5 × 20 = 2·5 × 10 × 2
= 50</td></tr>
<tr><td>Scaffolding</td><td colspan="3"> 

0·3 × 10 = 3</td></tr>
<tr><td>Multiplying decimals</td><td colspan="3">Use known facts to multiply decimals.

4 × 3 = 12
4 × 0·3 = 1·2
4 × 0·03 = 0·12

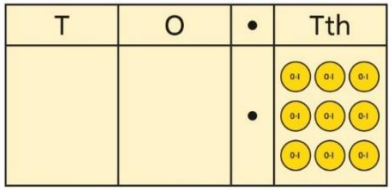
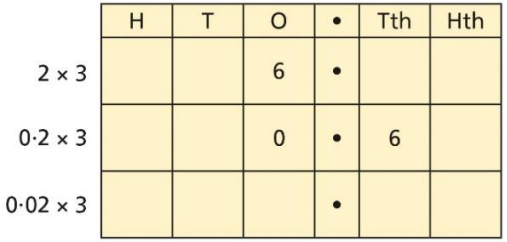
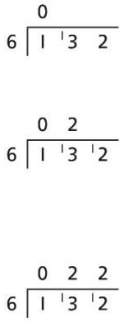
20 × 5 = 100
20 × 0·5 = 10
20 × 0·05 = 1

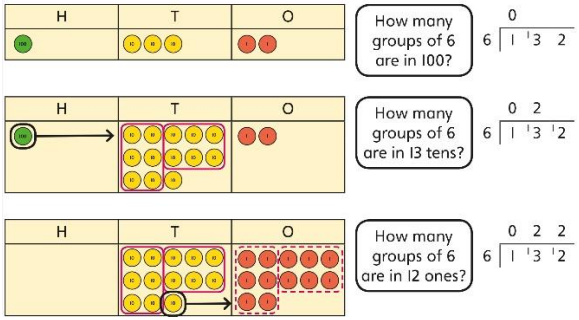
Find families of facts from a known multiplication.

I know that 18 × 4 = 72.

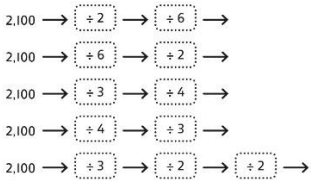
This can help me work out:

1·8 × 4 = ?
18 × 0·4 = ?
180 × 0·4 = ?</td></tr>
</table>

	18 × 0·04 = ?	
Scaffolding	Represent calculations on a place value grid. 3 × 3 = 9 3 × 0·3 = 0·9  	Use a place value grid to understand the effects of multiplying decimals. 
	Division	
Dividing by a single digit	Use short division to divide by a single digit.  	

<table>
<tr><td>Scaffolding</td><td colspan="3"> 
</td></tr>
<tr><td>Dividing by a 2-digit number using factors</td><td colspan="3">Use factors and repeated division where appropriate.

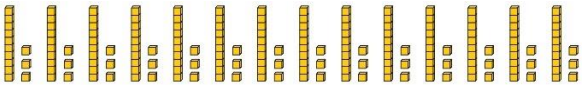
2,100 ÷ 12 = ?

 
</td></tr>
<tr><td>Scaffolding</td><td colspan="3">Use factors and repeated division.

1,260 ÷ 14 = ?

1,260 ÷ 2 = 630

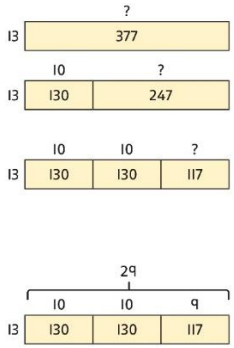
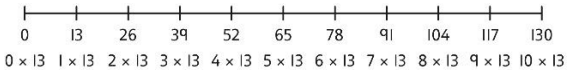
630 ÷ 7 = 90
1,260 ÷ 14 = 90</td></tr>
<tr><td>Dividing by a 2-digit number using long division</td><td>Use equipment to build numbers from groups.

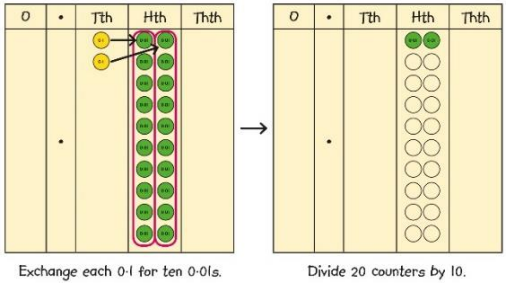
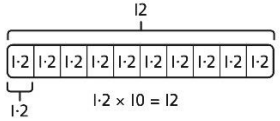
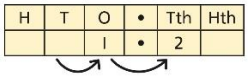
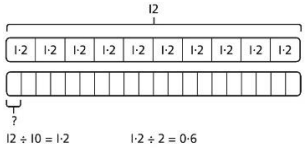
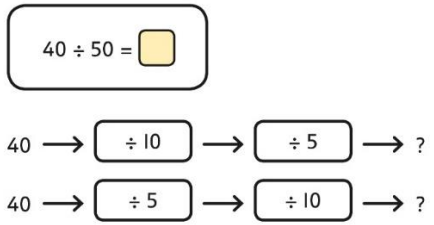
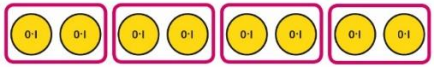
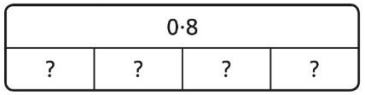
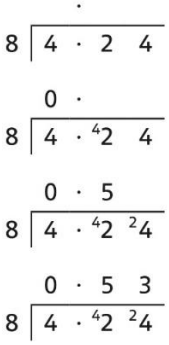
 

182 divided into groups of 13.
There are 14 groups.</td><td>Use an area model alongside written division to model the process.

377 ÷ 13 = ?</td><td>Use long division where factors are not useful (for example, when dividing by a 2-digit prime number).
Write the required multiples to support the division process.

377 ÷ 13 = ?</td></tr>
</table>

		 *377 ÷ 13 = 29*	 13 ⟌ 3 7 7 − 1 3 0 10 2 4 7 − 1 3 0 10 1 1 7 − 1 1 7 9 0 29 *377 ÷ 13 = 29* A slightly different layout may be used, with the division completed above rather than at the side. 3 21 ⟌ 7 9 8 − 6 3 0 1 6 8 3 8 21 ⟌ 7 9 8 − 6 3 0 1 6 8 − 1 6 8 0 Divisions with a remainder explored in problem-solving contexts.
Dividing by 10, 100 and 1,000	Use place value equipment to explore division as exchange.	Represent division to show the relationship with multiplication. Understand the effect of dividing by 10, 100 and 1,000 on the digits on a place value grid.	Use knowledge of factors to divide by multiples of 10, 100 and 1,000.

	 *0·2 is 2 tenths.* *2 tenths is equivalent to 20 hundredths.* *20 hundredths divided by 10 is 2 hundredths.*	  Understand how to divide using division by 10, 100 and 1,000. *12 ÷ 20 = ?* 	 *40 ÷ 5 = 8* *8 ÷ 10 = 0·8* *So, 40 ÷ 50 = 0·8*
Dividing decimals	Use place value equipment to explore division of decimals.  *8 tenths divided into 4 groups. 2 tenths in each group.*	Use a bar model to represent divisions.  4 × 2 = 8 So, 4 × 0·2 = 0·8 8 ÷ 4 = 2 0·8 ÷ 4 = 0·2	Use short division to divide decimals with up to 2 decimal places.