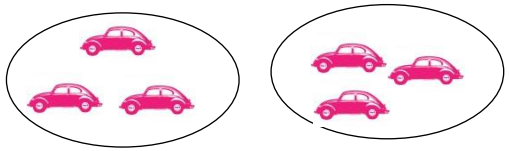
Year 1

Make connections between arrays, number patterns and counting in 2s, 5s and 10s, include solving division problems with support (by using concrete objects, pictorial representations and arrays)

Concrete

Halving

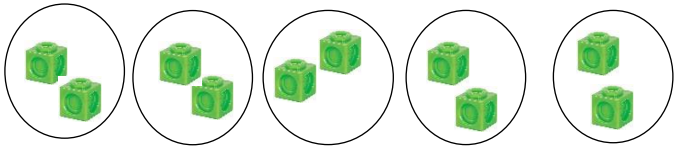
Half of 6 = 3



Sharing

Share objects into groups, how many muffins would be on each plate?

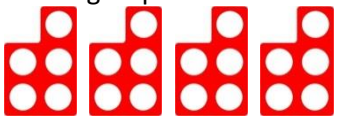
10 shared between 5 is 2



Grouping

Numicon

20 is 4 groups of 5.



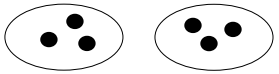
Dice

12 is 6 groups of 2

Pictorial

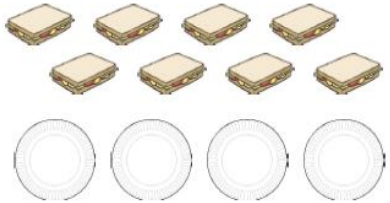
Halving

Half of 6 is 3



Sharing

Share the sandwiches between the 4 plates, draw sandwiches on the plates.

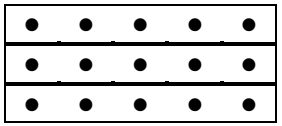


Groups of

6 divided into groups of 2 is 3

Array

15 in groups of 5 is 3 groups



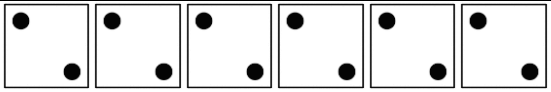
Abstract

½ of 6 =

How many groups of 2 can you make from 10?

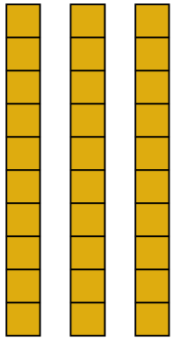
You have 15 counters and put them into 3 groups. How many counters are in each group?

There are 4 children and 12 marbles. How many marbles does each child get?



Base 10

How many groups of 10 can I make with 30?

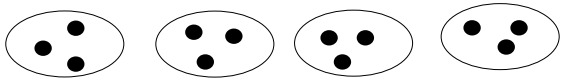


Money

How many 2ps make 8p?

There are 12 sweets and 3 children. How many sweets can they have each?

Use counters and draw round 3 counters at a time.



Bar model - Sharing

2 children share 8 sweets, how many do they each receive?

8	
●●●● 4	●●●● 4

BAR Model – Grouping

How many groups of 2 can you make with 8 counters?

8			
●● 2	●● 2	●● 2	●● 2

Year 2

Calculate mathematical statement for division within the multiplication tables and write them using the division (÷) and equals (=) signs

Teach the division sign alongside the concrete, pictorial and abstract representations detailed below

Know division facts linked to 2, 5 and 10 multiplication tables, write and solve ÷ problems within 2, 5, 10 multiplication tables

Concrete

Sharing

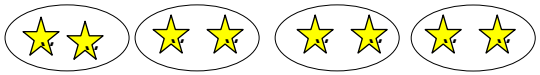
15 beanbags shared between 5 hoops:

15 ÷ 5 = 3

Grouping

2 stars can fit in a box. How many boxes can you fill with 8 stars?

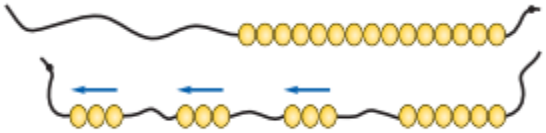
8 ÷ 2 = 4



Grouping using fingers

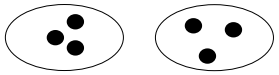
Grouping using a bead string

15 ÷ 3 = 5



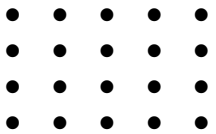
Pictorial

6 ÷ 2 = 3

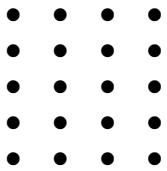


Arrays

20 ÷ 5 = 4

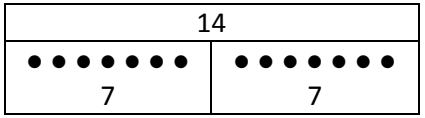


20 ÷ 4 = 5



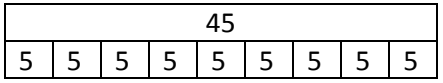
Bar Model - Sharing

14 ÷ 2 = 7



Bar Model – Grouping

45 ÷ 5 = 9



Start with putting jotting and numbers into each bar, move to numbers once children are secure with the bar model.

Abstract

6 ÷ 2 = 3

14 ÷ ☐ = 7

☐ ÷ 10 = 6

15 ÷ ☐ = 3

Sharing

I have 18p and divide it between 2 friends, how much will they get each?

Grouping

Pencils come in packs of 30. 5 pencils belong in each pot. How many pots can you fill?

Grouping with coins

How many 10p coins do you need to make 50p?

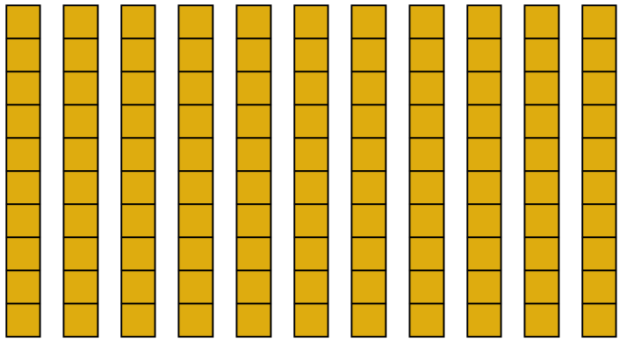
50 ÷ 10 = 5

Link counting in 20s to counting in 2s. How many 20 coins make 80p?

Grouping with base 10

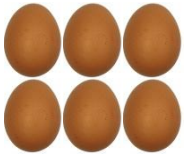
How many 10s do you need to make 110?

110 ÷ 10 = 11



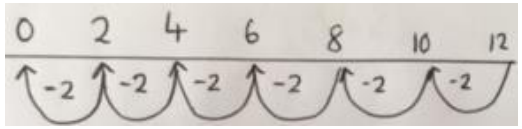
Array

6 ÷ 3 = 2 so 6 ÷ 2 = 3

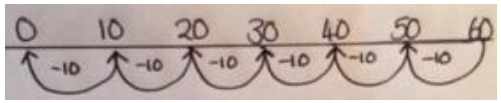


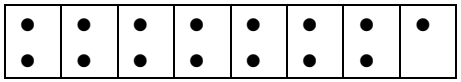
Number line - Grouping

12 ÷ 2 = 6



60 ÷ 10 = 6



Recognise odd and even numbers		
<u>Concrete</u> Link odd and even numbers to multiples of 2. <u>Numicon</u>  Which are odd? Use numicon to explain why. <u>Multilink</u> Is 9 an odd or even number? Why? 	<u>Pictorial</u> 15 is an odd number, prove it. 	<u>Abstract</u> 15 is an odd number, prove it. 28 is an odd number, true or false? Why?

Year 3

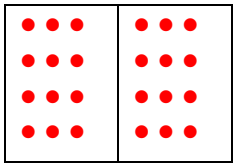
Know and use 2,3,4,5, 8 and 10 division tables

Concrete

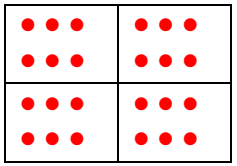
Counters or multilink

Use halving to connect 8, 4, 2 division tables:

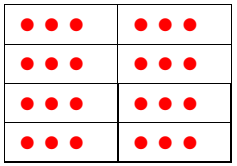
24 ÷ 2 = 12



24 ÷ 4 = 6



24 ÷ 8 = 3

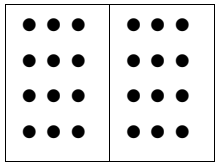


Pictorial

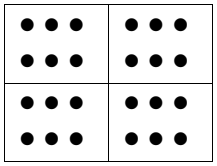
Draw jottings

Use halving to connect 8, 4, 2 division tables:

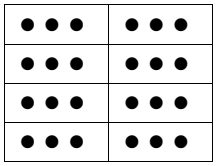
24 ÷ 2 = 12



24 ÷ 4 = 6



24 ÷ 8 = 3



Bar Model

48	
24	24

48			
12	12	12	12

48							
6	6	6	6	6	6	6	6

Abstract

If 16 ÷ 2 = 8 then 8 ÷ 4 = ☐

If 32 ÷ 4 = 6 then 32 ÷ 8 = ☐ .

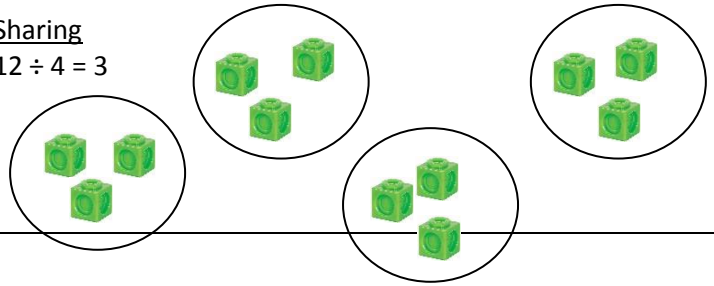
What could 32 ÷ 16 = ☐

Write and calculate division statements using mental and efficient written methods

Concrete

Sharing

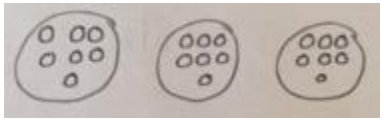
12 ÷ 4 = 3



Pictorial

Sharing

21 ÷ 3 = 7



Abstract

28 ÷ 4 = ☐

64 ÷ ☐ = 8

☐ ÷ 8 = 56

(The divisor is the number of groups)

Grouping

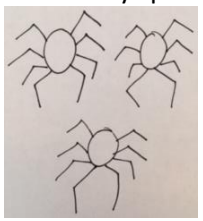
15 ÷ 3 = 5

(The divisor is the number in each group)

https://www.topmarks.co.uk/Flash.aspx?f=grouping

Grouping

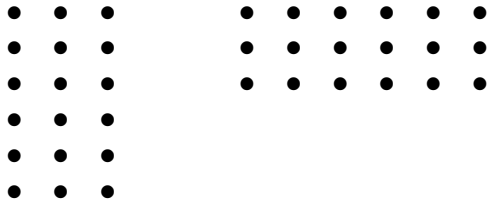
How many spiders have 24 legs in total?



24 ÷ 8 = 3

Array

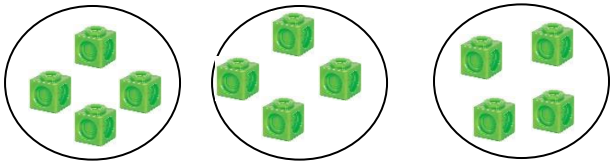
18 ÷ 3 = 6



Sarah thinks 44 flowers can be shared between 4 vases. Is she correct?

Grouping by repeated subtraction

12 ÷ 4 = 3



(The divisor is the number in each group)

Arrays

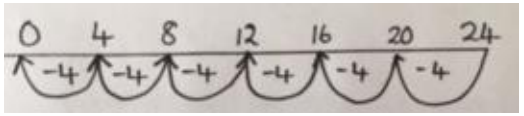
40 ÷ 8 =5

Grouping by repeated subtraction

24 ÷ 4 = 6

How many 4s in 24?

24			
6	6	6	6



Progress to representing vertically, encourage the children to apply known multiplication facts, e.g. 10 x 4 = 40.

Grouping by repeated subtraction

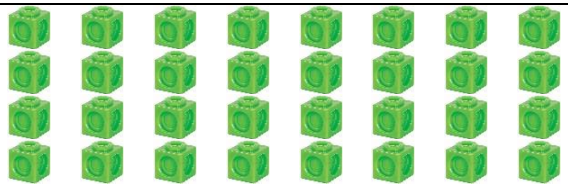
24 ÷ 4 = ☐

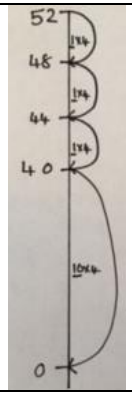
How many 4s in 24?

96 ÷ 8 = ☐

How many 3s in 27?

Tom needs to cook 18 cookies. He can cook 3 on each tray. How many trays will he need?



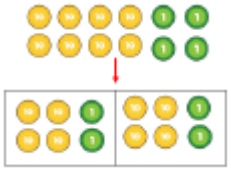


52 ÷ 4 = 13

Division by partitioning

Place value counters

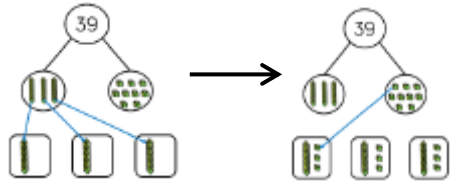
84 ÷ 2 = 42



Base 10

39 ÷ 3 = 13

Share the 10s: Share the ones:

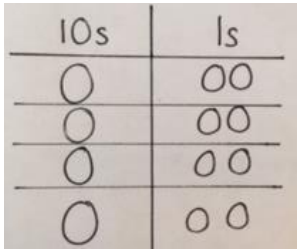


Place value counters

63 ÷ 3 = 21

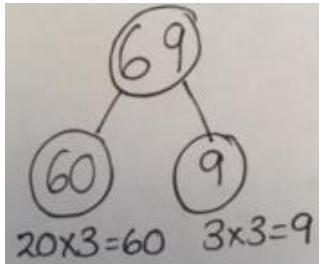
Division by partitioning

48 ÷ 4 = 12

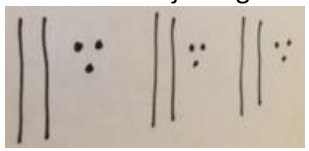


69 ÷ 3 =23

Part whole



Base 10 jotting



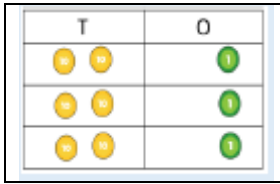
Division by partitioning

36 ÷ 3 = ☐

88 ÷ 8 = ☐

84 ÷ ☐ = 21

105 ÷ 5 = ☐

 T O		

<table>
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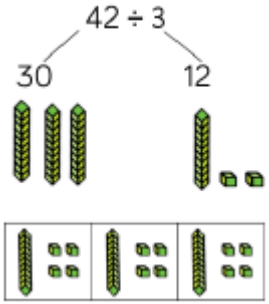
<td>

Divide a 2-digit number by a 1-digit number with exchange



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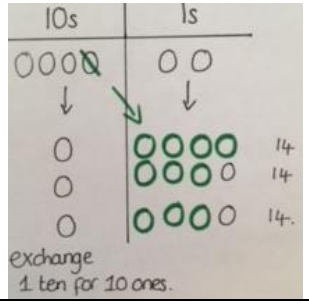
<td>

Divide a 2-digit number by a 1-digit number with exchange

42 ÷ 3 = 14



</td>
<td>

Divide a 2-digit number by a 1-digit number with exchange

42 ÷ 3 = ☐

56 ÷ 4 = ☐

64 ÷ ☐ = 16

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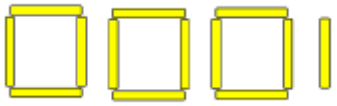
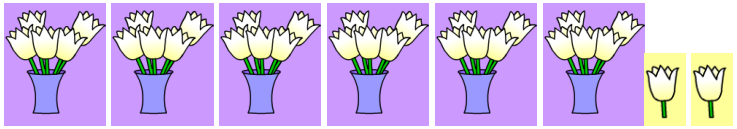
<td>

Divide a 2-digit number by a 1-digit number, with remainders

13 ÷ 4 = 3 r 1



Mum has 32 flowers, she fills each vase with 5 flowers. How many vases did she fill? *6*
How many will be left? *2*
32 ÷ 5 = 6 r 2

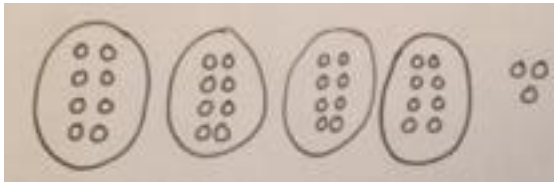


https://www.topmarks.co.uk/Flash.aspx?f=grouping

</td>
<td>

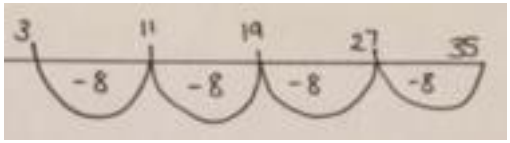
Divide a 2-digit number by a 1-digit number, with remainders

35 ÷ 8 = 4 r 3



4 groups of 8, 3 remaining.

Number line
35 ÷ 8 = 4 r 3



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<td>

Divide a 2-digit number by a 1-digit number, with remainders

35 ÷ 8 = 4 r ☐

35 ÷ 8 = ☐ r 3

31 ÷ 4 = ☐ r ☐

Which numbers can be divided into groups of 5 with a remainder of 3?

☐ ÷ 5 = ☐ r 3

James has 17 balls. He sorts his balls into equal groups but always has some remaining. How many balls could be in each group and how many could be remaining?

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

Year 4

Recall division facts for multiplication tables up to 12 × 12

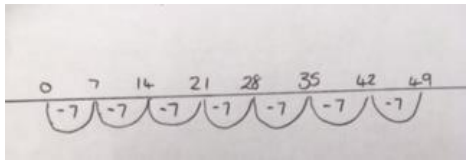
Concrete

18 ÷ 6 = 3

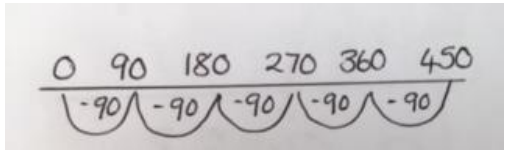
48 ÷ 12 = 4

Pictorial

49 ÷ 7 = 7



450 ÷ 90 = 5



Abstract

72 ÷ 9 = ☐

56 ÷ ☐ = 7

600 ÷ 3 = 200 can be derived from 2 x 3 = 6

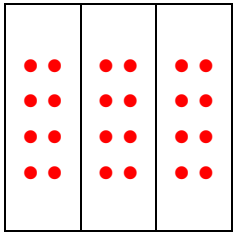
240 ÷ 8 = ☐ can be derived from 8 x ☐ = 24

Use halving to connect, 3, 6, 12 division facts

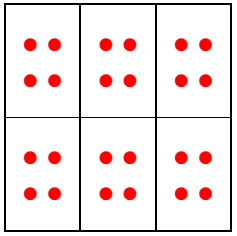
Counters or multilink

Use halving to connect 8, 4, 2 division tables:

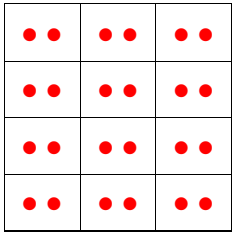
24 ÷ 3 = 24



24 ÷ 6 = 6



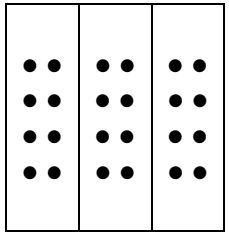
24 ÷ 12 = 3



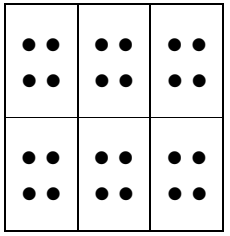
Draw jottings

Use halving to connect 8, 4, 2 division tables:

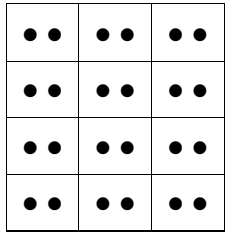
24 ÷ 3 = 24



24 ÷ 6 = 6



24 ÷ 12 = 3



Bar Model

24 ÷ 3 = 8

24		
8	8	8

24 ÷ 6 = 4

24					
4	4	4	4	4	4

If 16 ÷ 2 = 8 then 8 ÷ 4 =

If 48 ÷ 6 = 8 then 48 ÷ 12 = ☐

What could 48 ÷ 24 = ☐

	24 2 2 2 2 2 2 2 2 2 2 2 2	

Divide by 1, 10, 100

Concrete

4 counters shared between 4 hands = 1 each

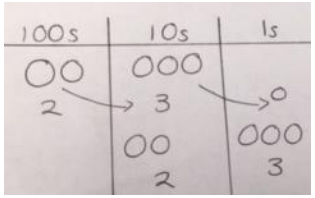
230 ÷10 = 23 (Move 1 space to the right)

100s	10s	1s
 2	 3	0
 2	 3	

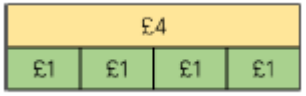
Use place value counters or base 10

Pictorial

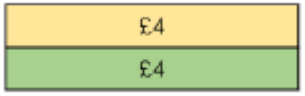
230 ÷10 = 23 (Move 1 space to the right)



£4 ÷ 1 = 4



£4 ÷ 4 = 1



Abstract

240 ÷ 10 = ☐

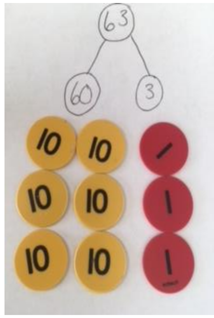
150 ÷ ☐ = 15

Mary has a money box filled with £1 coins and she has 10 friends. How much money would they have each if the box had £24. If each person had 70p, how much would be in the box?

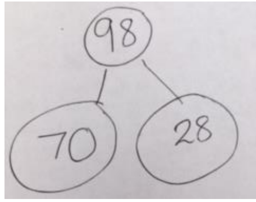
Divide numbers up to 3 digits by a one-digit number using short division with exact answers

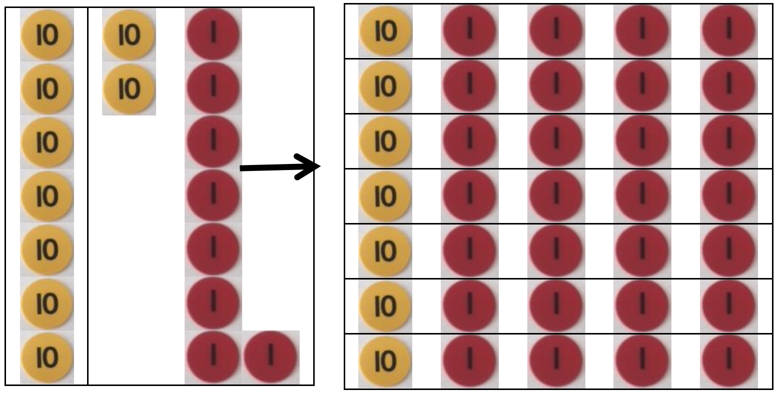
<u>Concrete</u>

63 ÷ 3 = 21

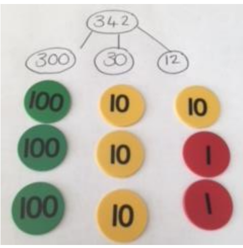


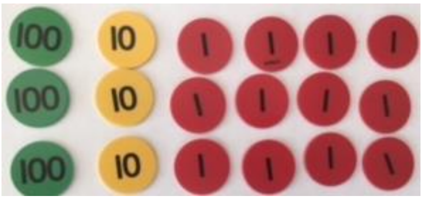
98 ÷ 7 = 14





342 ÷ 3 = 104

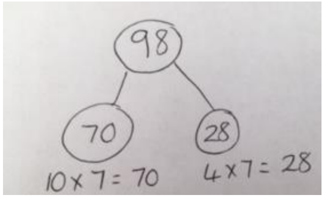


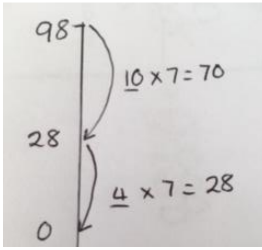


Use place value counters or base 10

<u>Pictorial</u>

98 ÷ 7 = 14





<u>Abstract</u>

63 ÷ 3 = 21

$$3 \overline{)\,6\;\;3\,}\quad \text{answer: } 2\;\;1$$

98 ÷ 7 becomes

$$7 \overline{)\,9\;\;{}^{2}8\,}\quad \text{answer: } 1\;\;4$$

Answer: 14

54 ÷ ☐ = 9

☐ ÷ 8 = 5

342 ÷ 3 = 104

$$3 \overline{)\,3\;\;4\;\;{}^{1}2\,}\quad \text{answer: } 1\;\;1\;\;4$$

Year 5

Divide numbers mentally using known facts

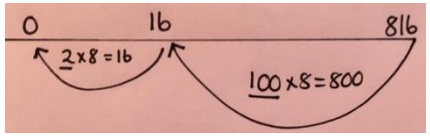
Concrete

See previous years for examples

Pictorial

Number line

816 ÷ 8 =102



615 ÷ 5 = 123

100 + 20 + 3 = 123

Abstract

816 ÷ 8 =102

(8 x 100 = 800, 8 x 2 = 16 therefore 100 + 2 = 102)

816 ÷ ☐ =102

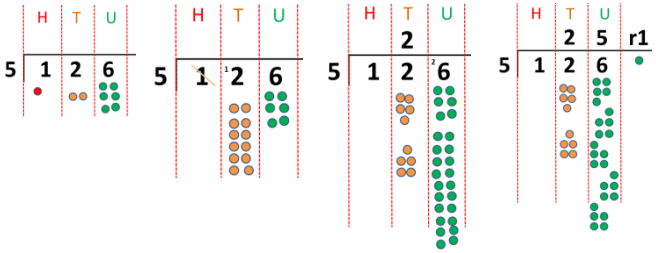
☐ = 615 ÷ 5

Divide numbers up to 4 digits by a one-digit number using short division , including those which give remainders

Concrete

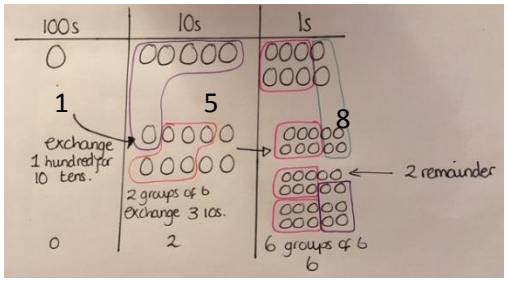
Use place value coins to model exchanging

126 ÷ 5 = 25 r 1



Pictorial

158 ÷ 6 = 26 r2



Abstract

98 ÷ 7 = 18

$$\begin{array}{r} 1\ 4 \\ 7\overline{)\,9\ {}^{2}8} \end{array}$$

What is the missing number?

☐ ÷ 7 = 141

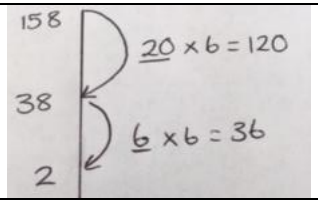
1 4 1

9648 ÷ 8 = 1206

$$\begin{array}{r} 1\ 2\ 0\ 6 \\ 8\overline{)\,9\ {}^{1}6\ 4\ {}^{4}8} \end{array}$$

158 ÷ 6 = 26 r2 or $26\frac{1}{3}$

$$\begin{array}{r} 2\ 6\ \text{r}\ 2 \\ 6\overline{)\,1\ {}^{1}5\ {}^{3}8} \end{array}$$

		$7\overline{)\square\,{}^{2}8\;\;7}$

Divide whole numbers and those involving decimals by 10, 100 and 1000

Concrete

4230 ÷ 10 = 420.3

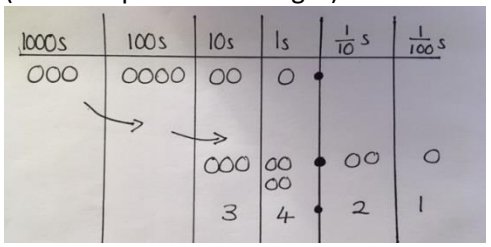
(Move 1 space to the right)

1000s	100s	10s	1s	$\frac{1}{10}$s
4	2	0	3	0
	4	2	0	3

Pictorial

3421 ÷ 100 = 34.21

(Move 2 spaces to the right)



Abstract

6305 ÷ 10 =

6305 ÷ 100 =

6305 ÷ 1000 =

1024 ÷ ☐ =102.4

☐ ÷ 100 = 26

Year 6

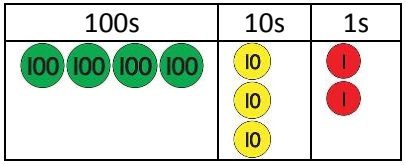
Divide using all division facts

Concrete	Pictorial	Abstract
See previous years for examples	See previous years for examples	See previous years for examples

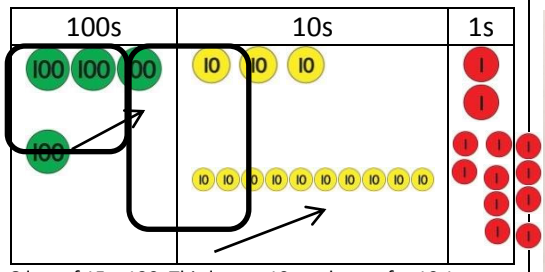
Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.

Concrete

432 ÷ 15 = 28 r 12



20 lots of 15 = 300. This leaves 100, exchange for 10 10s

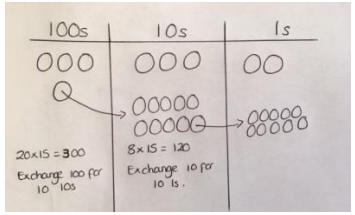


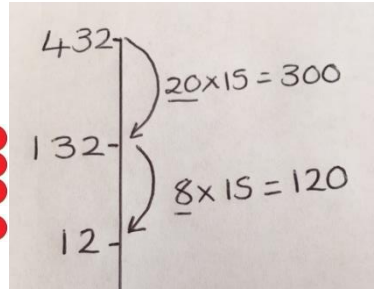
8 lots of 15 = 120. This leaves 10, exchange for 10 1s.

In total there were 20 lots of 15 and 8 lots of 15 with 12 remaining, 28 r 12.

Pictorial

432 ÷ 15 = 28 r 12





Abstract

432 ÷ 15 =

$$\begin{array}{r} 28\ \text{r}\ 12 \\ 15\overline{)\,432} \\ -\,300 \\ \hline 132 \\ -\,120 \\ \hline 12 \end{array}$$

432 ÷ 15 = 28 r 12

$$\begin{array}{r} 28 \\ 15\overline{)\,432} \\ -\,300 \quad (15\times20) \\ \hline 132 \\ -\,120 \quad (15\times8) \\ \hline 12 \end{array}$$

$\frac{12}{15} = \frac{4}{5}$

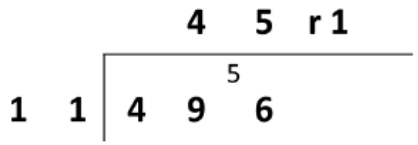
432 ÷ 15 = $28\frac{4}{5}$

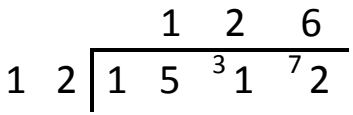
$$\begin{array}{r} 28.8 \\ 15\overline{)\,432.0} \\ -\,30\downarrow \\ \hline 132 \\ -\,120\downarrow \\ \hline 120 \\ -\,120 \\ \hline 0 \end{array}$$

432 ÷ 15 = 28.8

<table>
<tr><th colspan="3">Divide numbers up to 4 digits by a two-digit number using short division where appropriate, giving remainders as whole numbers, fractions, decimals or by rounding</th></tr>
<tr>
<td><u>Concrete</u>

Refer back to previous years for concrete examples</td>
<td><u>Pictorial</u>

Refer back to previous years for pictorial examples</td>
<td><u>Abstract</u>
496 ÷ 11 = 45 r1 or $45\frac{1}{11}$
 

1512 ÷ 12 = 126
 
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