Dividing up to a 4-digit number by a 1-digit number 2

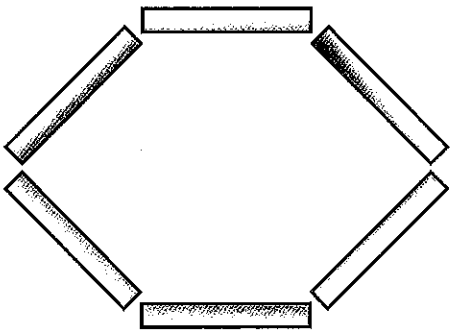
1 Mo is dividing 78 by 3. Complete his working.

$3 \overline{)\ 7\ \ 8}$

T	O
10 10 10 10 10 10 10	1 1 1 1 1 1 1 1

$78 \div 3 =$ ☐

2 Olivia is making hexagons with straws, like this:



Olivia has 96 straws. How many hexagons can she make?

$6 \overline{)\ 9\ \ 6}$

T	O
10 10 10 10 10 10 10 10 10	1 1 1 1 1 1

Oliva can make ☐ hexagons.

3 Work out these divisions.

a) $642 \div 6 =$ ☐ **b)** $725 \div 5 =$ ☐ **c)** $5{,}016 \div 3 =$ ☐

$6 \overline{)\ 6\ \ 4\ \ 2}$ $5 \overline{)\ 7\ \ 2\ \ 5}$ $3 \overline{)\ 5\ \ 0\ \ 1\ \ 6}$

4 Calculate the answers to these divisions.

a) 7,924 ÷ 7 = ☐

b) 711 ÷ 3 = ☐

c) 916 ÷ 4 = ☐

$$7 \overline{)\,7\ 9\ 2\ 4}$$

5 What division does this bar model model represent?

Write the calculation and then solve it.

2,454					

6 Isla has made a number and then divided her number by 4 using short division.

What mistake has Isla made?

$$4 \overline{)\,1\ {}^{3}5\ {}^{3}1\ {}^{3}6}\ \ 0\ 8\ 7\ 9$$

Th	H	T	O
1000	100 100 100 100 100	10	1 1 1 1 1 1

7 Fill in the missing numbers in these short divisions.

a) $4 \overline{)\,{}^{1}7\ 2}$ 2

b) $3 \overline{)\,8\ 7\ 3}$ 2 2

c) $5 \overline{)\,{}^{1}\ {}^{3}0}$ 6

CHALLENGE

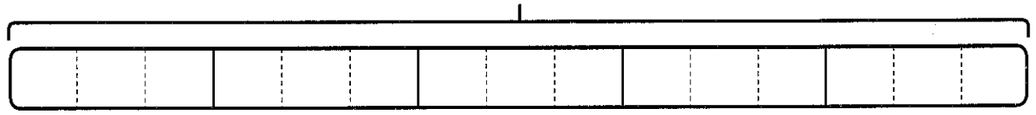
8 Bella and Ebo are working out 4,755 divided by 15.

Bella: To divide a number by 15, I can divide by 3 first and then divide my answer by 5.

Ebo: I would divide this by 5 first and then divide by 3.

Show that Bella and Ebo will get the same answer.

Use the diagram to explain why dividing by 15 is the same as dividing by 5 and then dividing by 3.



Reflect

How do you know that this answer is wrong?
What mistakes have been made?

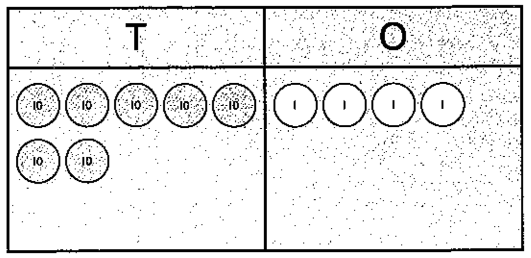
$$7 \overline{)\,3\ 0\ 7}\ \ 0\ 0\ 1$$

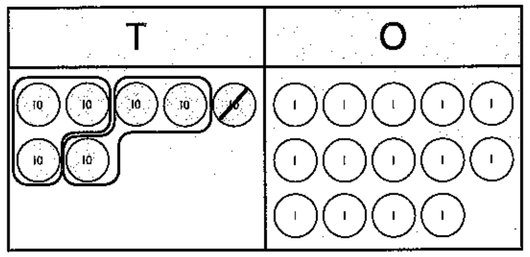
Textbook 5B p40

Division with remainders 1

1 Complete the short division for 74 ÷ 3.

$$3\overline{)7\ 4}\ \text{r}$$





2 Jamie shares 76 sweets equally among 6 of her friends.

a) How many sweets does each of her friends get?

Each friend gets ☐ sweets.

b) How many sweets are left over?

There are ☐ sweets left over.

c) 1,393 sweets are shared between 3 jars.

How do you know that there will not be 5 sweets left over?

____

____

3 Work out these divisions.

a) 56 ÷ 5

$$5\overline{)5\ 6}$$

b) 329 ÷ 2

$$2\overline{)3\ 2\ 9}$$

c) 418 ÷ 9

$$9\overline{)4\ 1\ 8}$$

d) 4,175 ÷ 4

e) 973 ÷ 6

f) 1,111 ÷ 8

4 Toshi has 712 jars of jam to pack into boxes.

He puts 6 jars into each box. Can he pack all the jars into boxes without any remainders?

5 Match each question to its remainder.

Are there any that you can match without working out the division?

$5\overline{)4\ 8}$ $7\overline{)9\ 7}$ $2\overline{)9\ 9}$

r 0 r 1 r 2 r 3 r 4 r 5 r 6

$9\overline{)7\ 6}$ $3\overline{)9\ 3}$ $4\overline{)8\ 6}$

6 A horse is given 3 mints each day.

How many whole days will a large bag of 200 mints last for?

The mints will last for [ ] days.

CHALLENGE

7 a) Fill in all the missing numbers.

```
  0  3  3 r 4
2 ⟌ 2 ²3  5

  2  _  _  _ r _
9 ⟌ 7  1  8
```

b) How many different ways can you complete this question?

51[ ] ÷ 3 = [ ][ ][ ] r 1

Reflect

Kate says, 'A remainder can sometimes be bigger than the number you are dividing by.' Is she correct? Explain your answer.

Textbook 5B p44

Division with remainders 2

1 a) Circle the numbers that have no remainder when divided by 5.

26 300 95 153 6,045

Explain how you made your choice.

b) Circle the numbers that have no remainder when divided by 2.

1,252 390 77 1,001 788

Explain how you made your choice.

c) Circle the numbers that have no remainder when divided by 3.

156 170 1,700 384 72

Explain how you made your choice.

I will check the digit sums to see what they are multiples of.

2 Show that there is no remainder when 756 is divided by 4.

3 Kate and Richard are dividing numbers by 6.

A number that divides exactly by 6 will also divide by 2 and by 3.

Kate

I know how to tell if a number divides by 2, and also how to tell if it divides by 3.

Richard

a) Circle the numbers that divide exactly by 6.

78 342 726 2,412

b) Each of these numbers has no remainder when divided by 6.

Find two possibilities for each missing digit.

□46 3,1□2 28□

□46 3,1□2 28□

4 712 ÷ 8 = 89

Use this fact to work out the remainder in each of these divisions.

a) 713 ÷ 8 remainder = □

b) 714 ÷ 8 remainder = □

c) 717 ÷ 8 remainder = □

d) 720 ÷ 8 remainder = □

Explain how you worked out one of your answers.

5 Use this rule to circle all the divisions that have no remainder.

A number divides exactly by 4 if the last two digits of the number divide exactly by 4.

516 ÷ 4 1,748 ÷ 4 938 ÷ 4 704 ÷ 4

6 Work out the missing digits. They each could have more than one answer.

CHALLENGE

a) When 71□ is divided by 5 the remainder is 3.

b) 1,73□ divides exactly by 3.

c) 59□ has a remainder of 5 when divided by 6.

Reflect

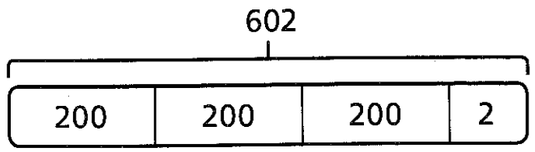
Can you ever have a remainder that is higher than 8 when you divide by a 1-digit number? Explain why or why not.

Textbook 5B p48

Problem solving – division with remainders

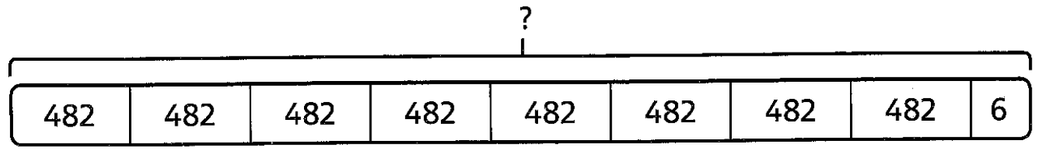
1 What calculations are shown by these bar models?

a)



□ ÷ □ = □ r □

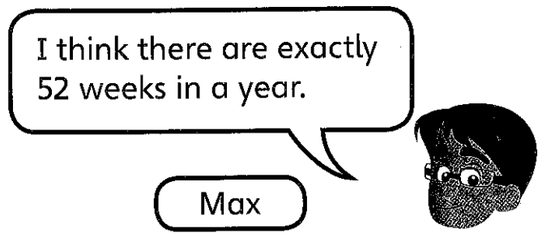
b)



□ ÷ □ = □ r □

2 There are 365 days in a year.

Show whether or not Max is correct.



3 Some stickers are shared out between 5 children.

Each child gets 32 stickers and there are 3 stickers left over.

a) How many stickers were shared out altogether?

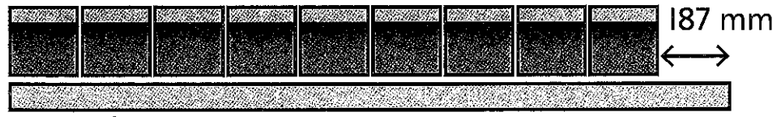
□ stickers were shared out altogether.

b) Another child joins the group, so the stickers are collected up and now shared between the 6 children.

How many stickers does each child get now? How many stickers are left over?

Each child gets □ stickers. There are □ stickers left over.

4 A shelf is 2,050 mm long. 9 boxes are placed on the shelf.

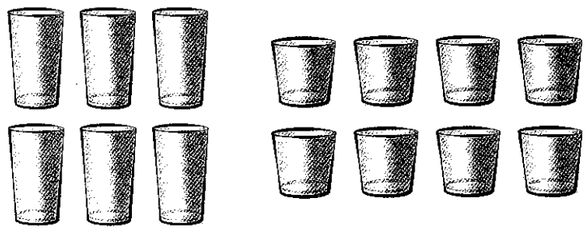


How wide is one box?

One box is □ mm wide.

CHALLENGE

5 A 5 litre bottle of water is shared between these glasses.



416 ml of water is poured into each tall glass.

The rest of the water is shared equally between the short glasses.

How much water is in each short glass?

There is ☐ ml of water in each short glass.

Reflect

Explain how you can check this calculation in two different ways.

1,143 × 5 = 5,715

Textbook 5B p52

End of unit check

My journal

1 What mistakes have the children made?

Work out the correct answer to each calculation.

Mo

$$\begin{array}{r} 235 \\ \times\ 39 \\ \hline 1831_{2}5 \\ 695_{1} \\ \hline 19010 \\ {\scriptstyle 1\ 1\ 1} \end{array}$$

Reena

$$3\overline{)8^{2}8^{4}5} = 2815$$

Danny

$$4\overline{)7^{3}0^{2}5^{1}1} = 1762\ \text{r}\ 1$$

2 Explain the most efficient way to do these calculations.

99 × 764	5,917 × 1	723 ÷ 1	7,000 × 30

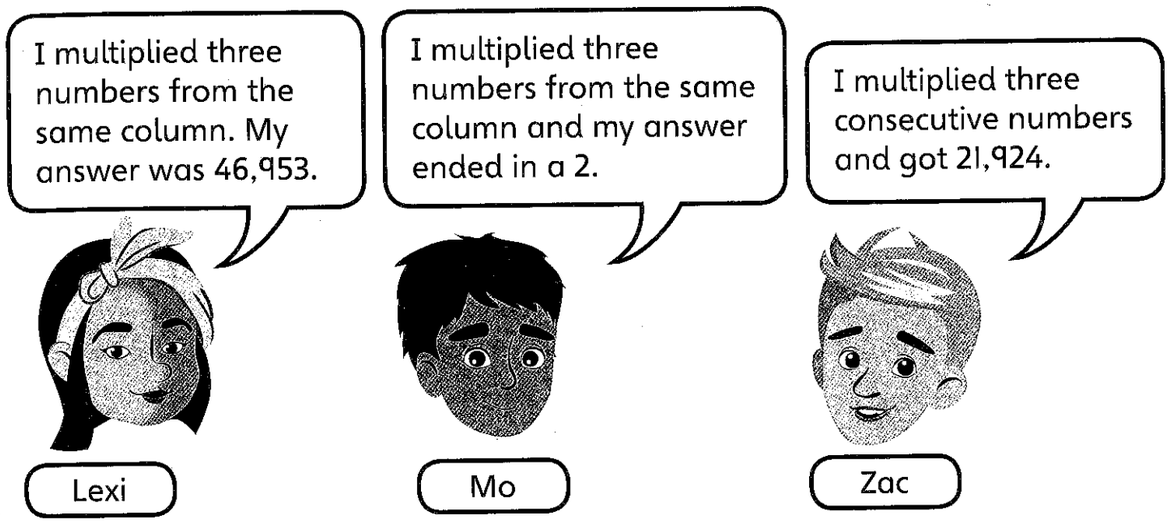
Power check

How do you feel about your work in this unit?

Power play

Here is a part of a 100 square.

21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50



a) Which three numbers did Lexi multiply together?

b) What were the numbers that Mo multiplied together? What was the answer that Mo got?

c) What numbers did Zac multiply together?

If you multiply any three consecutive numbers the answer will always end in 0, 4 or 6. True or False?