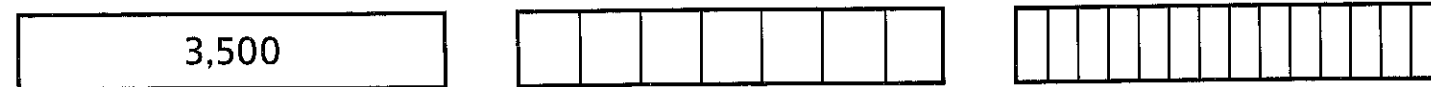# Dividing numbers up to 4 digits by a 2-digit number ❷

1 a) Reena has shared 3,500 ml of juice equally between 14 glasses. How much juice is in each glass?
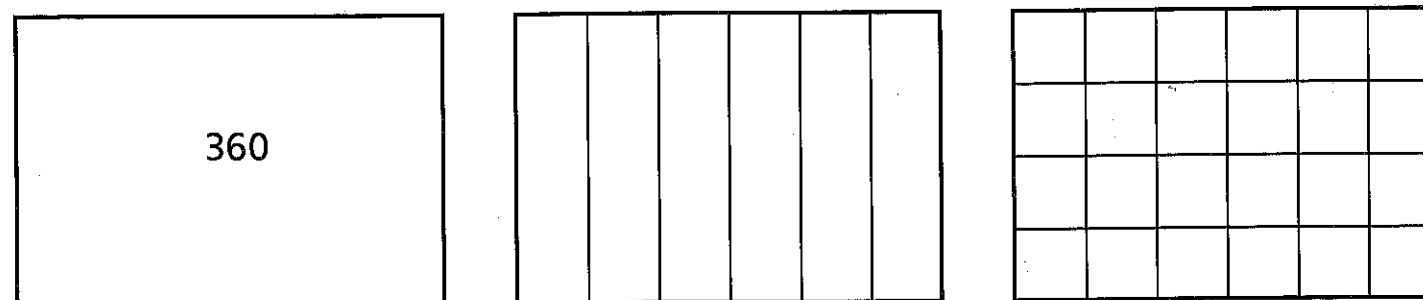
3,500

$3,500 \div 7 =$ ☐

☐ $\div 2 =$ ☐

$7 \overline{| 3 \quad 5 \quad 0 \quad 0}$

$2 \overline{}$

$3,500 \div 14 =$ ☐

b) Aki has 360 g of clay. He makes small clay shells. Each shell weighs 24 g. How many shells can he make?

360

$360 \div 6 =$ ☐

☐ $\div 4 =$ ☐

2 Complete the divisions.

$1,260 \longrightarrow \boxed{\div 10} \longrightarrow \boxed{\div 2} \longrightarrow \qquad 1,260 \div 20 =$ ☐

$180 \longrightarrow \boxed{\div 3} \longrightarrow \boxed{\div 5} \longrightarrow \qquad 180 \div 15 =$ ☐

$960 \longrightarrow \boxed{\div 2} \longrightarrow \boxed{\div } \longrightarrow \qquad 960 \div 16 =$ ☐

$1,100 \longrightarrow \boxed{\div } \longrightarrow \boxed{\div } \longrightarrow \qquad 1,100 \div 22 =$ ☐

3 Complete the divisions by choosing factors.

a) $2,700 \div 18 =$ ☐

c) $5,400 \div 36 =$ ☐

b) $7,200 \div 12 =$ ☐

d) $5,600 \div 14 =$ ☐

4 a) $480 \div 8 = 60$

Use division by factors to show how you can use this calculation to work out:

CHALLENGE

i) $480 \div 16 =$ ☐

ii) $960 \div 32 =$ ☐

b) Ambika says 'If I double the number that I am dividing by, the answer to the division will be halved.'

Bella says 'I think that means that if I double both numbers in a division, the answer will be halved and then halved again.'

Do you agree with both Ambika and Bella? Show how you know.

Reflect

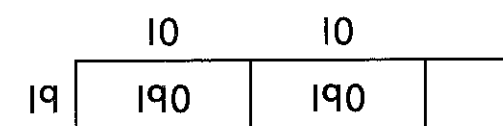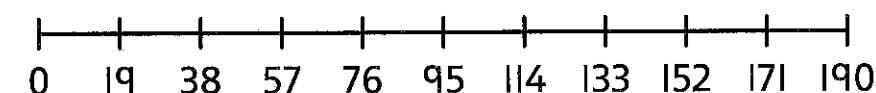Show two ways to work out $6,440 \div 20$ using division by factors.

Dividing numbers up to 4 digits by a 2-digit number ❸

1 Solve these divisions.

a) $399 \div 19 =$ ☐

```
       0   19  38  57  76  95  114 133 152 171 190
```

	10	10	
19	190	190	

```
19 | 3  9  9
     1  9  0   10
     2  0  9
     1  9  0   10
```

b) $385 \div 11 =$ ☐

11		

c) $888 \div 37 =$ ☐

37	
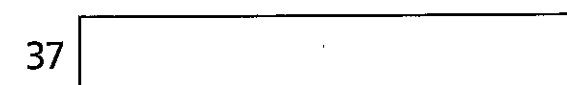
2 There are 992 pupils in a school. They are organised into classes with 31 pupils in each class. How many classes are there?

3 Complete these divisions.

a) $182 \div 13 =$ ▢

c) $528 \div 11 =$ ▢

b) $364 \div 13 =$ ▢

d) $528 \div 22 =$ ▢

4 Mo and Olivia are dividing 1,221 by 37. Mo uses three subtractions and Olivia uses five subtractions. Show their possible calculations.
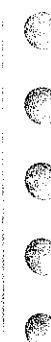
5 Find the missing number.

$702 \div$ ▢ $= 27$

CHALLENGE

Reflect

Show how you can check that $552 \div 23 = 24$.

Dividing numbers up to 4 digits by a 2-digit number ❹

1 Work out these divisions. Use the number line to help you.

```
+---+---+---+---+---+---+---+---+---+---+
0   15  30  45  60  75  90  105 120 135 150
```
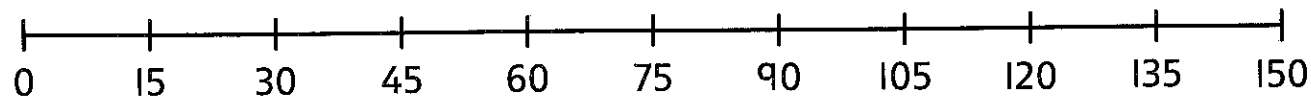
a)
```
15 | 7  3  5
```

b)
```
15 | 1  8  9  0
```

c)
```
15 | 5  6  1  0
```

2 There are 1,331 footballers at a football tournament. There are 11 players in each team. How many teams will there be?

$1,331 \div 11 = \boxed{}$

3 Jen cycles 2,444 kilometres in 26 days. Toshi cycles 2,325 kilometres in 25 days. Who cycles more kilometres per day?

4 Ebo is working out $8,845 \div 61$. He lists his multiples.

```
+---+---+---+---+---+---+---+---+---+---+
0   61  122 183 244 305 366 437 498 559 620
```
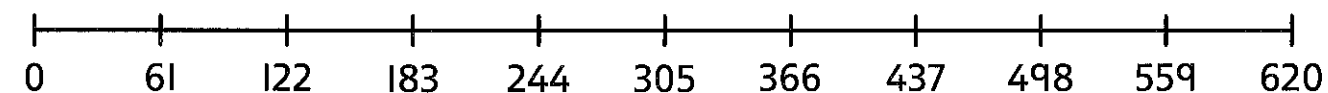
a) How do you know Ebo has made a mistake? Find his first mistake and correct it.

b) Work out the answer to the division.

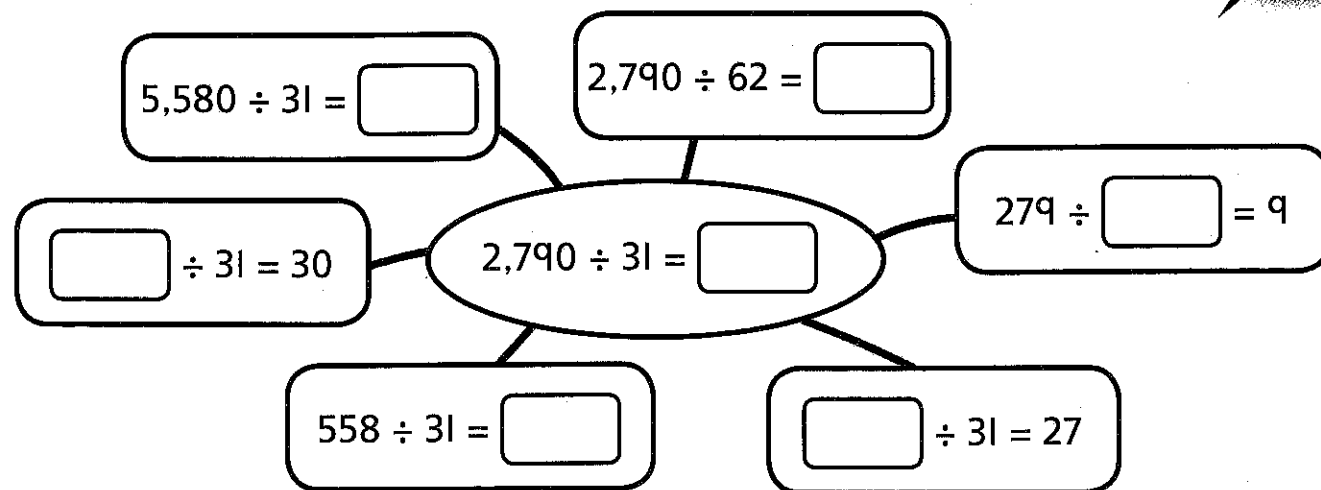**5** Reena thinks she can use 2,790 ÷ 31 to work out some other related divisions. Solve 2,790 ÷ 31 and use it to complete Reena's mind map.
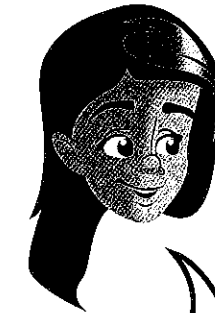
CHALLENGE

5,580 ÷ 31 = ☐
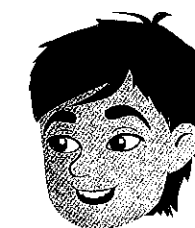
2,790 ÷ 62 = ☐

☐ ÷ 31 = 30

2,790 ÷ 31 = ☐

279 ÷ ☐ = 9

558 ÷ 31 = ☐

☐ ÷ 31 = 27

Reflect

Circle the division that you would not solve using division by factors. Explain why. Solve each division.

1,440 ÷ 30   2,553 ÷ 23

Dividing numbers up to 4 digits by a 2-digit number **5**

1 Emma and Aki are discussing divisions. Show who is correct.

Emma

Aki

When I divide 100 by 13 I get a remainder of 9, so when I divide 100 by 14, the remainder will be 10.

When I divide 100 by 13 I get a remainder of 9, so when I divide 101 by 13 I will get a remainder of 10.

2 Andy has 200 football stickers for his album. It takes 15 stickers to fill one page. How many pages can he fill? How many stickers will be left over?

3 Draw lines to match each division to a remainder. Some remainders belong to more than one division.

450 ÷ 20

301 ÷ 10

955 ÷ 50

685 ÷ 25

335 ÷ 33

1

5

10

4 Complete these divisions, including any remainders.

a) 300 ÷ 11 = ☐

b) 300 ÷ 31 = ☐

c) 750 ÷ 17 = ☐

d) 850 ÷ 17 = ☐

5 A ranger at a wildlife reserve needs 475 kg of bird seed to make feeders. The seed comes in bags of 35 kg. How many bags will the ranger need to buy?

CHALLENGE

6 Complete this division so that it has a remainder of 40. Explain your thinking.

☐ ÷ 41

_____

_____

_____

Reflect

Reena works out 300 ÷ 21 by dividing by 3 and then dividing by 7. She says the remainder is 2, because 100 ÷ 7 has a remainder of 2.

Is Reena correct? Explore her method and explain what you find.

_____

_____

_____

Dividing numbers up to 4 digits by a 2-digit number ❻

❶ **a)** Amelia has 2,000 ml of juice. She fills each ice-lolly mould with 75 ml of juice. How many ice lollies can she make, and how much juice will be left?

b) Bella has 2,500 ml of juice and she uses 95 ml of juice for each ice lolly. Will she have more or less juice left than Amelia?

c) What fraction of an ice lolly can Amelia and Bella each make with their remaining juice?

❷ Complete these divisions.

a) $1,000 \div 11 = $

b) $2,000 \div 11 = $

c) $4,000 \div 22 = $

d) $8,000 \div 22 = $

Explain how the divisions are related and explore the pattern in the answers and the remainders.

_____

_____

❸ A school receives £2,515 for new computer equipment. The money is shared equally between 20 classes in the school. How much money does each class get in pounds and pence?

4 Use each digit card once to make a division. Find the division that will give you the biggest remainder.

CHALLENGE

| 1 | 1 | 3 | 5 | 7 | 9 |

□ □ □ □ ÷ □ □

Reflect

Write a story problem that requires a division and leaves a remainder of 10.

_____

_____

_____

End of unit check

My journal

1 | 1 | 2 | 3 | 4 | 5 |

Use the digit cards to create one of these multiplications.

□ □ □ × □ □   □ □ □ □ × □

Divide the answer to your multiplication by 25.

Now, try to make a multiplication with an answer that leaves a remainder of 10 when you divide it by 25.

□ □ □ × □ □   □ □ □ □ × □

Power check

How do you feel about your work in this unit?

🙂? 🙂 😃