Contents

This tells you which page you need.

The first page of a lesson is a maths problem. Don't look at the next page until you have had a go! The third and fourth pages give you practice, so you can check your understanding.

Multiplying 2-digit numbers ❶

Discover
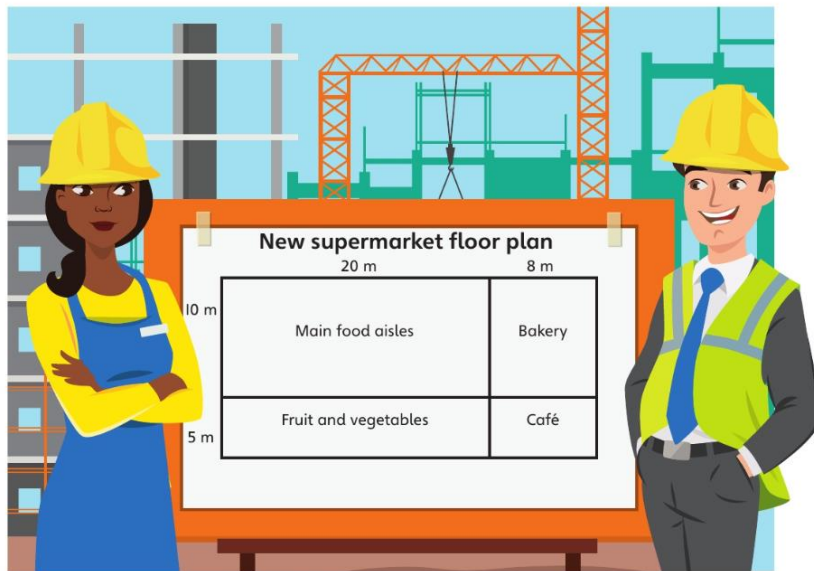
1 **a)** What will the length of the new supermarket be?

What will the width be?

b) What will the total area of the new supermarket be?

Share

a)

$20 + 8 = 28$ m

$10 + 5 = 15$ m
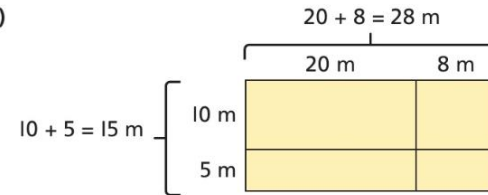
The length of the new supermarket will be 28 m.

The width will be 15 m.

b)

To find the total area I need to work out 28×15 but I am not sure how to do that.

The area model looks like the grid method. I will find the area of each part of the supermarket and add them together to get the total area.

	20 m	8 m
10 m	$20 \times 10 = 200$ m^2	$8 \times 10 = 80$ m^2
5 m	$20 \times 5 = 100$ m^2	$8 \times 5 = 40$ m^2

H	T	O
2	0	0
1	0	0
	8	0
+	4	0
4	2	0
	1	

The total area of the new supermarket will be 420 m^2.

This is the same as 28×15.

Multiplying 2-digit numbers ❶

1 **a)** Use the area model to work out 26 × 14.

26

20	6	H T O
10	☐ × ☐ = ☐	☐ × ☐ = ☐
4	☐ × ☐ = ☐	☐ × ☐ = ☐	+ ____

14
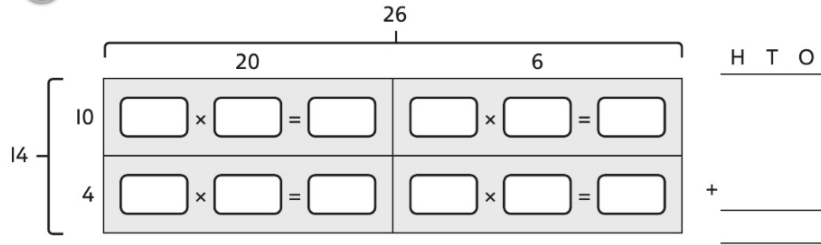
26 × 14 = ☐

b) Use the area model to work out 17 × 42.

17

☐   ☐

42
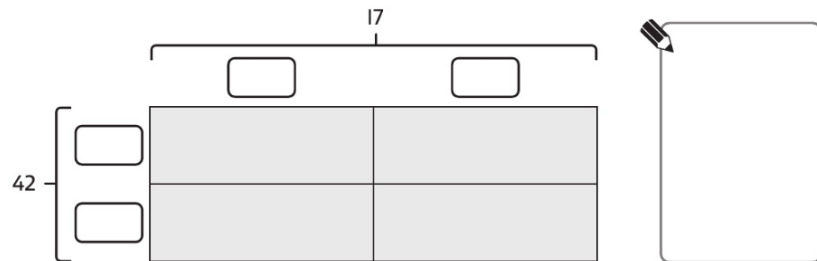
17 × 42 = ☐

c) Zac says, 'On my area model, I put 42 along the top and 17 down the side.'

Will Zac still get the same answer? Explain why.

_____

_____

2 Work out these multiplications.

a) 27 × 34 = ☐

H T O

| | |
| | | + _____
            _____
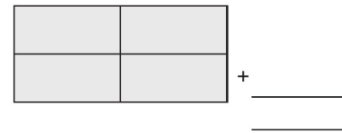
b) 53 × 38 = ☐

| | |
| | |

3 Each day Mike runs 41 km. How far does Mike run in 19 days?

Mike runs ☐ km in 19 days.

4 Bella is working out 53 × 27.

Circle the mistakes Bella has made. What is the correct answer?

	50	3
20	50 × 20 = 100	3 × 20 = 60
7	50 × 7 = 350	3 × 7 = 10

Th	H	T	O
	3	5	0
	1	0	0
		6	0
+		1	0
1	1	5	0

53 × 27 = ☐

Multiplying 2-digit numbers ❷

Discover

34 × 27

Josh

	30	4
20	30 × 20 = 600	4 × 20 = 80
7	30 × 7 = 210	4 × 7 = 28

Th	H	T	O
	6	0	0
	2	1	0
	8	0	
+	2	8	
1	8	9	0

Lexi

34 × 20 = 680

```
    3  4
×      7
─────────
    2  3  8
        2
```

680 + 238 = 820

Zac

```
    3  4
×   2  7
─────────
    2  3₂8    34 × 7
    6  8  0   34 × 20
    9  1  8   34 × 27
    1
```

1 a) What mistake has Josh made?

b) Look at Lexi's method and Zac's method.

   What is the same? What is different?

Share

a) The calculations in the grid are all correct but Josh has lined up the numbers incorrectly in his addition.

	30	4
20	30 × 20 = 600	4 × 20 = 80
7	30 × 7 = 210	4 × 7 = 28

Th	H	T	O
	6	0	0
	2	1	0
		8	0
+		2	8
	9	1	8
		1	

The correct answer is 918.

b) Lexi partitioned her number and worked out each multiplication separately.

Lexi did that correctly, but she then made a mistake when adding her two totals.

Zac did the same as Lexi, except he did it all in one column multiplication and made no mistakes. This is called long multiplication.

34 × 20 = 680

```
    3  4
×      7
─────────
    2  3  8
        2
```

```
    3  4
×   2  7
─────────
    2  3₂8    34 × 7
```

```
    3  4
×   2  7
─────────
    2  3₂8    34 × 7
    6  8  0   34 × 20
```

```
    3  4
×   2  7
─────────
    2  3₂8    34 × 7
    6  8  0   34 × 20
    9  1  8   34 × 27
    1
```

Did you notice that Zac placed a 0 here to show that he is multiplying 34 by 20 and not by 2?
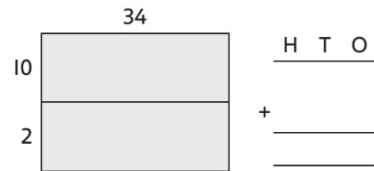
Multiplying 2-digit numbers ❷

1 a) Olivia and Jamilla are working out 34 × 12.

They each use a different method. Complete their methods.

Olivia's method

34

10

2

H T O

+ _____

_____

_____

34 × 12 = ☐

Jamilla's method

   3 4

×   I 2

_____

     0

_____

_____
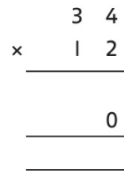
b) Whose method did you prefer? Why?

_____

_____

_____

2 Complete the following column multiplications.

a) 29 × 23 = ☐

    2 9

×   2 3

_____

         29 × 3

     0   29 × 20

_____

         29 × 23

b) 37 × 16 = ☐

    3 7

×   I 6

_____

         37 × 6

     0   37 × 10

_____
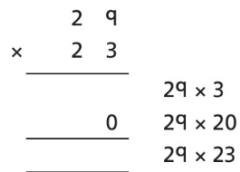
         37 × 16
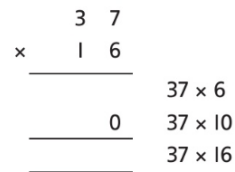
3 Complete these calculations.

a) 45 × 27 = ☐

    4 5

×   2 7

_____

         45 × 7

     0   45 × 20

_____

         45 × 27

b) ☐ × ☐ = ☐

    5 2

×   I 7

_____

_____
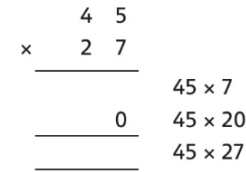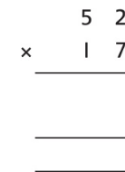
c) 49 × 34 = ☐

d) 28 × 76 = ☐

4 A snack bar has 85 calories.

How many calories are there in a pack of 24 snack bars?

ONLY 85 CALORIES

Division with remainders

Discover

Holly: We need to put the cake cases into the trays.

Lexi: Each tray holds 6 cake cases.

80 cake cases

Lee

1 a) How many full trays of cakes can be made?

Will there be any cake cases left over?

Use a method other than short division to find your answer.

b) Check your answer using short division.

Share

I put 80 counters into groups of 6.

a) Method 1

13 full trays

6 per tray

2 left over

Remember the amount left over is called the remainder.

We use the letter r to represent remainder.
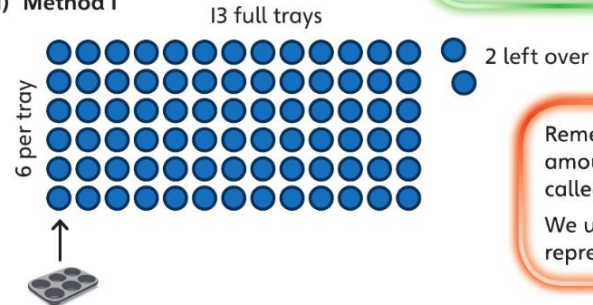
$80 \div 6 = 13 \text{ r } 2$

There are 13 full trays and 2 cake cases left over.

Method 2

$3 \times 6 = 18$ $10 \times 6 = 60$

0 2   20   80

80
60 20
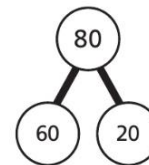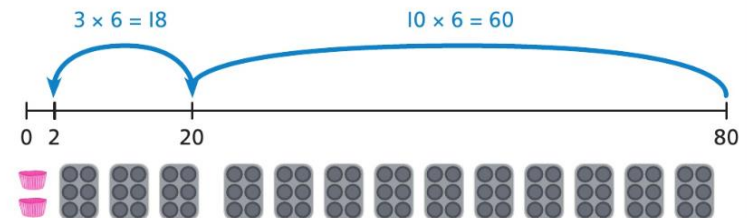
$60 \div 6 = 10$

$20 \div 6 = 3 \text{ r } 2$

So, $80 \div 6 = 13 \text{ r } 2$

I used a part-whole model to help me.

Division with remainders

1 Complete the short division for 74 ÷ 3.

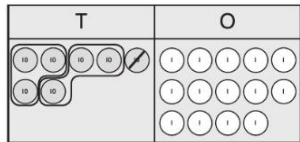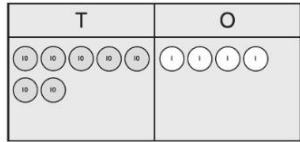$$3 \overline{\smash{)}7\ 4}\ ^r$$

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

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

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

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

c) 418 ÷ 9

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

e) 973 ÷ 6

b) 329 ÷ 2

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

d) 4,175 ÷ 4

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?

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

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

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

Calculating perimeter

Discover

The width of this football pitch is 70 metres!

The length is 100 metres.

I ran around a square playground. It was 200 metres in total!
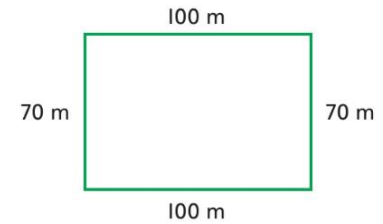
Ebo

Jamie

Mo
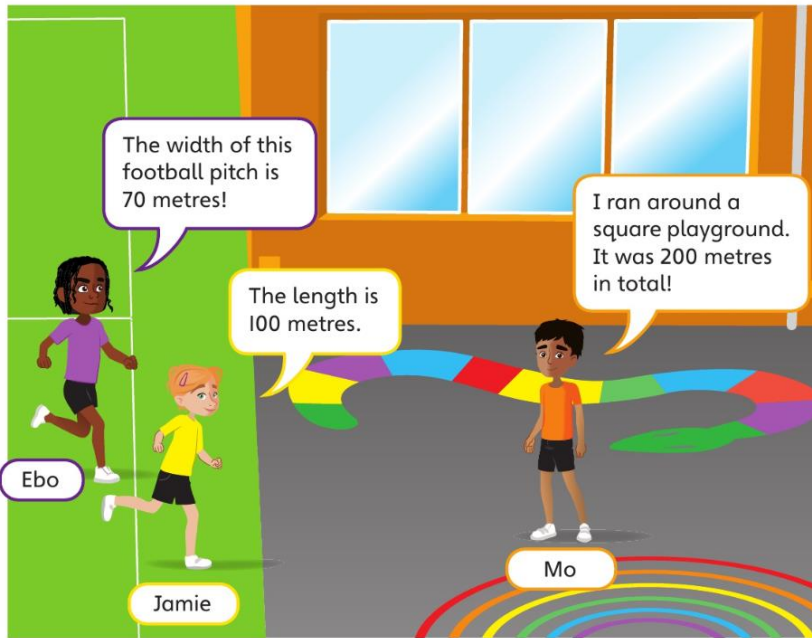
1 a) What is the perimeter of the football pitch?

b) What is the length of the playground?

Share

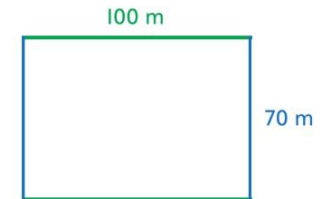a) Jamie and Ebo gave the length and the width of the football pitch.

I am going to sketch a picture to help find the answer.

100 m
70 m   70 m
100 m

100 + 70 + 100 + 70 = 340 m

I added the length and width and then doubled the result.

100 m
70 m

100 + 70 = 170

170 × 2 = 340 m

Brackets show which bit of the calculation to do first.

In this example, double the length and double the width before adding them together.

(70 × 2) + (100 × 2)
= 140 + 200
= 340 m

The perimeter of the football pitch is 340 metres.
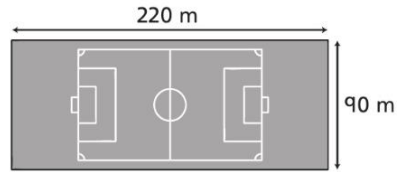
Calculating perimeter

1 Calculate the perimeter of each of these playing fields. Show your working.

a) (length × 2) + (width × 2)

= (⬚ × 2) + (⬚ × 2)

= ⬚ + ⬚

= ⬚

220 m

90 m

The perimeter of this playing field is ⬚ m.

b) ✏️

125 m

110 m
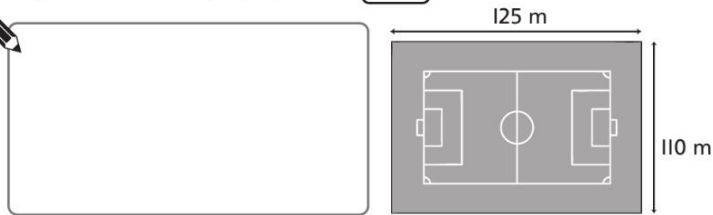
The perimeter of this playing field is ⬚ m.

2 Find the perimeter of each rectangle.

24 cm

11 cm   A   11 cm

24 cm

20 cm   15 cm

B

18 cm

C
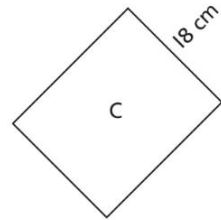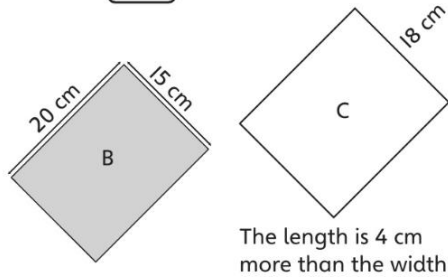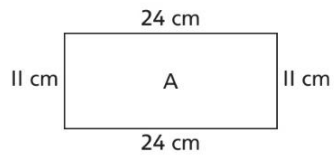
The length is 4 cm more than the width.

✏️

A = ⬚ cm   B = ⬚ cm   C = ⬚ cm

3 Each square tile has a side length of 10 cm.

Luis puts tiles together to make different shapes.

A   B   C   D

Complete the table.

Shape	Number of tiles used	Perimeter (cm)
A		
B		
C		
D		

4 The perimeter of this rectangle is 50 cm.

What is its length?

8 cm

I know that a rectangle has two pairs of equal sides. I will start by subtracting the two widths from the perimeter.

✏️

The length of the rectangle is ⬚ cm.