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CAMBRIDGE Primary Mathematics

Workbook 2

Cherri Moseley & Janet Rees

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Cambridge Assessment International Education
Endorsed for learner support

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Primary Mathematics

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Contents

Contents

How to use this book

This workbook provides questions for you to practise what you have learned in class. There is a unit to match each unit in your Learner's Book. Each exercise is divided into three parts:

- **Focus:** these questions help you to master the basics
- **Practice:** these questions help you to become more confident in using what you have learned
- **Challenge:** these questions will make you think more deeply.

Each exercise is divided into three parts.
You might not need to work on all of them.
Your teacher will tell you which parts to do.

You will also find these features:

Important words that you will use. ⟶

> column   digit
> place holder
> representation   row

Step-by-step examples showing a way to solve a problem.
There are often many different ways to solve a problem. ⟶

Worked example 4

A number sequence starts at 35. It counts on in tens and stops at 65. What are the numbers in this sequence?

> I used a 100 square to help me

> All the numbers have 5 ones. They are all odd.

> 35, 45, 55, 65

Answer: 35, 45, 55, 65.

These questions will help ⟶ you develop your skills of thinking and working mathematically.

16 Write a sequence of 5 numbers.
Complete the sentences to describe your sequence.

☐ ☐ ☐ ☐ ☐

_____ at _____ Count _____ in _____ Stop at _____

Thinking and Working Mathematically

There are some important skills that you will develop as you learn mathematics.
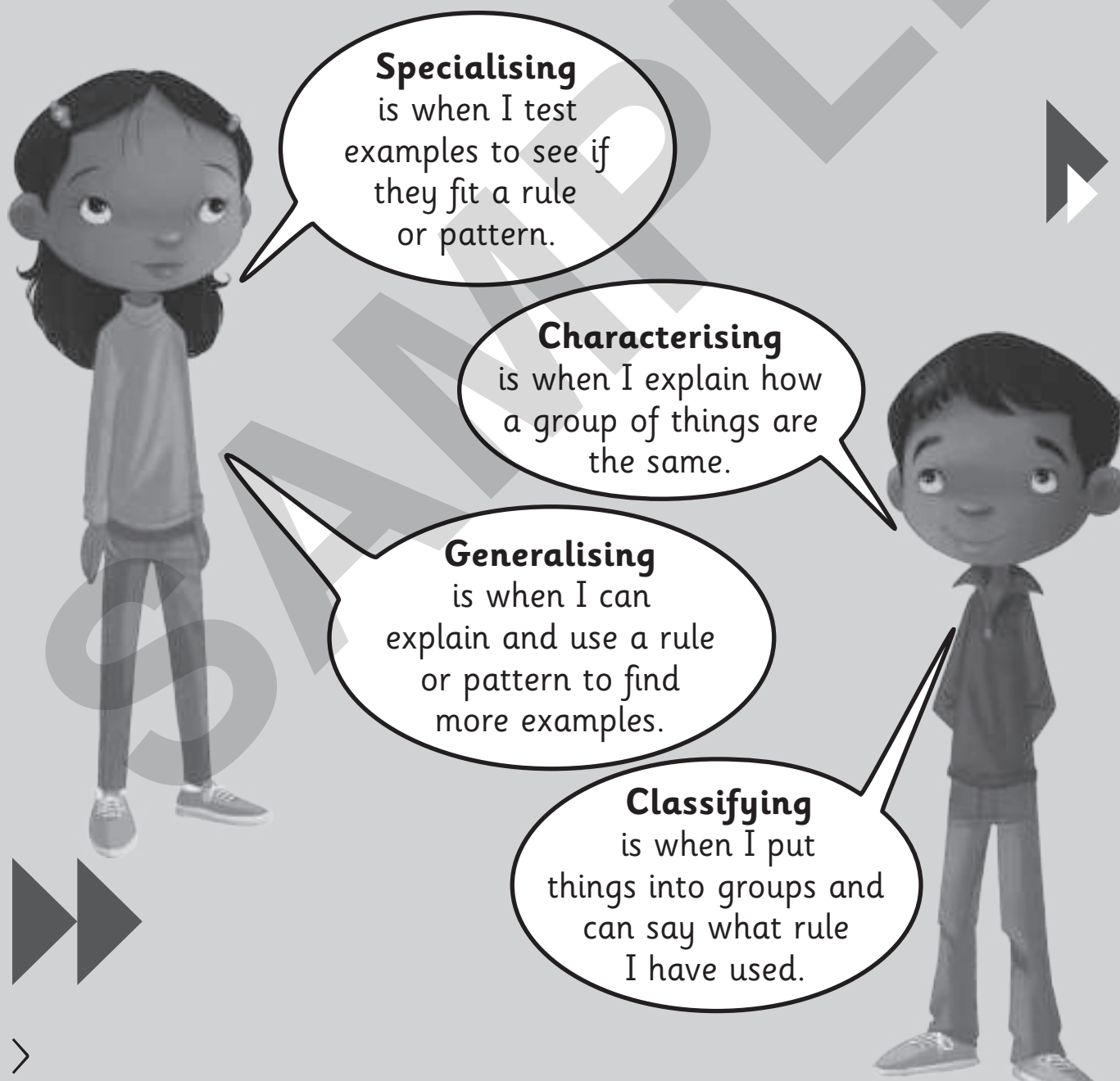
Specialising
is when I test examples to see if they fit a rule or pattern.

Characterising
is when I explain how a group of things are the same.

Generalising
is when I can explain and use a rule or pattern to find more examples.

Classifying
is when I put things into groups and can say what rule I have used.

Critiquing is when I think about what is good and what could be better in my work or someone else's work.

Improving is when I try to make my maths better.

Conjecturing is when I think of an idea or question linked to my maths.

Convincing is when I explain my thinking to someone else, to help them understand.

7

1 ▶ Numbers to 100

> 1.1 Numbers to 100

| column   digit |
| place holder |
| representation   row |

Exercise 1.1

Focus

1   Write the missing numbers.

| 2 | 3 | ◺ | = | | 0 | ◺ | + | | | ◺ |

| | | ◺ | = | 4 | 0 | ◺ | + | 9 | | ◺ |

2   Write the missing numbers.

| 21 | | | | 25 | | | | | 30 |

| 51 | | | | 55 | | | | | 60 |

Worked example 1

This is a column from the 100 square.

Write the missing numbers.

1
11
91

Answer:

1
11
21
31
41
51
61
71
81
91

Count on in tens. 11, 21, 31, . . . The number of ones stays the same. The number of tens changes.

3 Write the missing numbers.

3	6	10
		50
53		
	66	
		100

4 Which 2-digit numbers are represented?

5 Draw a different representation of this number.

Show your representation to a partner or carer.

How is your representation the same as others? How is it different?

Practice

6 Write the missing numbers.

= 9 0 + 8

8 5 = 0 +

= 7 0 + 3
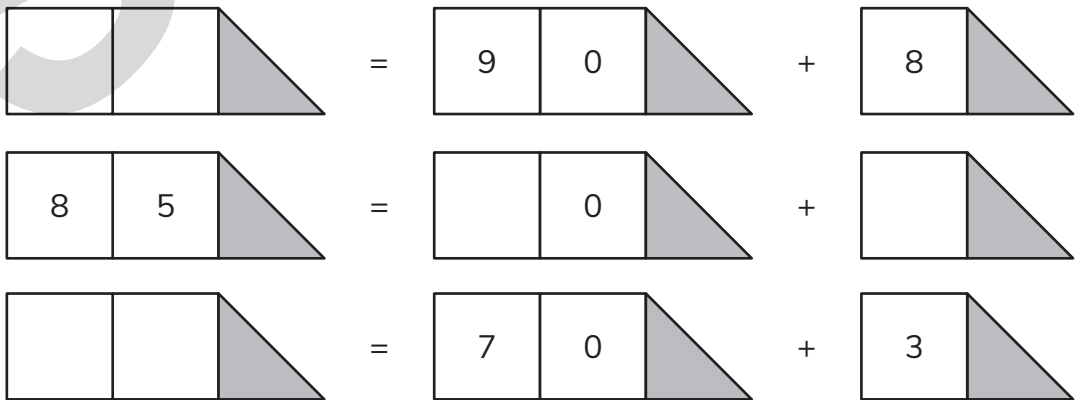
7 Here are some rows and columns from a 100 square.

Write the missing numbers.

									80

									20

4	8
74	
	88

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1.1 Numbers to 100

8 Draw a representation of 23 and a representation of 32.

How are they the same? How are they different?

Discuss your representations with a partner or carer.

9 Here are some pieces of a 100 square.

Write the missing numbers.

23

57		

| 37 |

| 74 |
| |
| | | | |

| 88 |
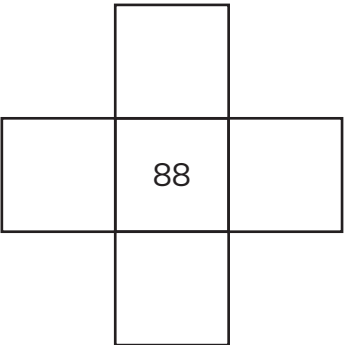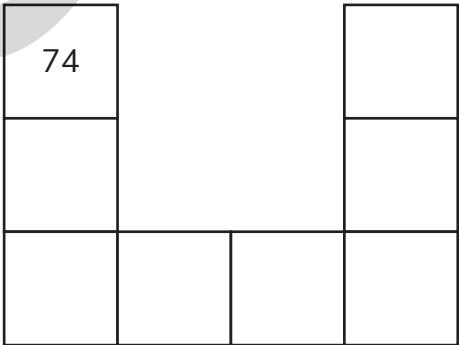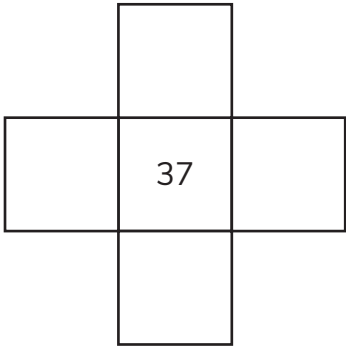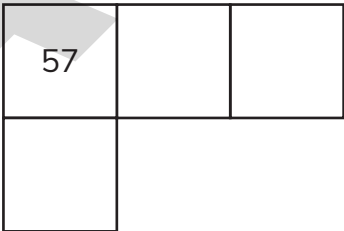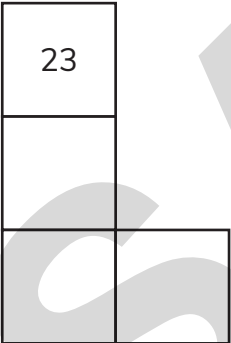
Challenge

10 Here is a mostly blank 100 square.

Write these numbers in the correct places.

37   81   53   90   75   46   69

1									
									100

11 Use the digit cards to make 6 different 2-digit numbers.

Write these numbers in the correct places in the
100 square from question 10.

2   4   8

› 1.2 Counting up to 100 objects

Exercise 1.2

Focus

1 Write the missing numbers.

1 ten →	10
2 tens →	
3 tens →	
4 tens →	
5 tens →	
6 tens →	
7 tens →	
8 tens →	
9 tens →	
10 tens →	

accurate, accurately collection   order

Use the table to help you count in tens from 10 to 100.

2   Which tens number is 1 ten more than 8 tens?

3   Which tens number is 1 ten fewer than 6 tens?

4   Sofia and Zara make some numbers. Sofia chooses the tens.
Zara chooses the ones.

Write each number they make in a part whole diagram.

a
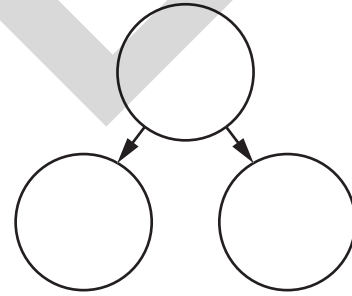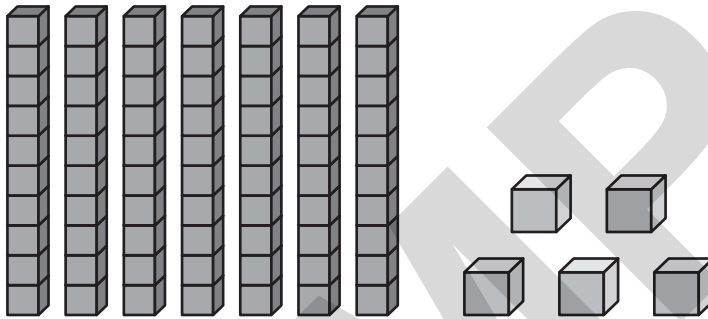
b
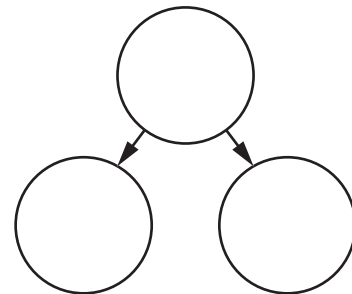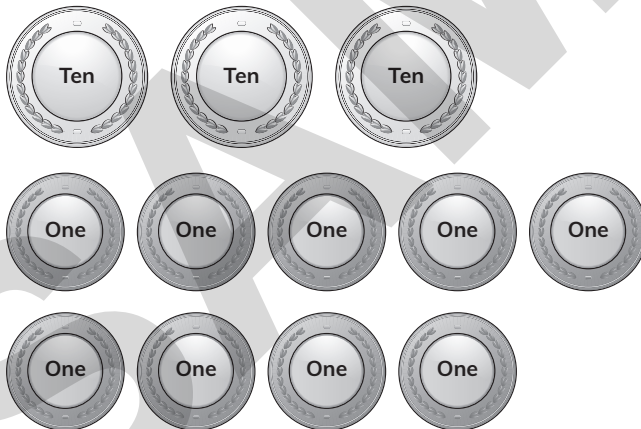
c   Sofia chooses four tens.
Zara chooses zero ones.

Worked example 2

Arun scoops some stones out of a tray.

How many stones does he scoop out?

Estimate then count.
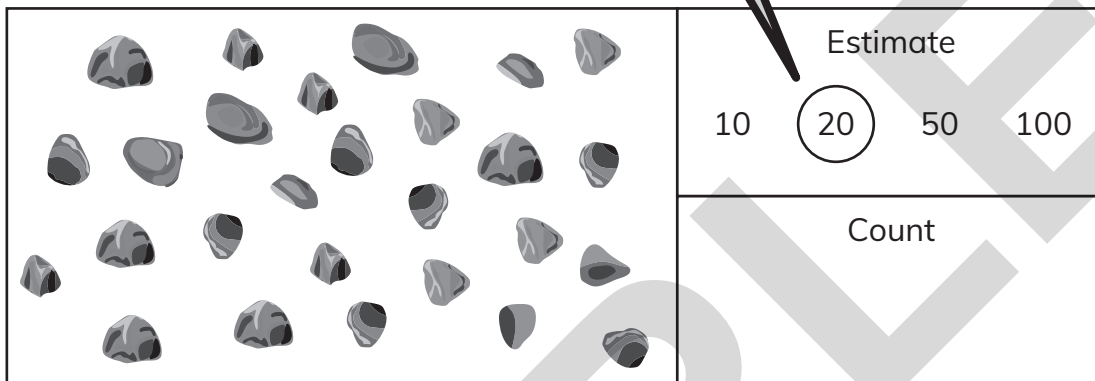
> More than 10, but fewer than 50. I estimate 20.

Estimate
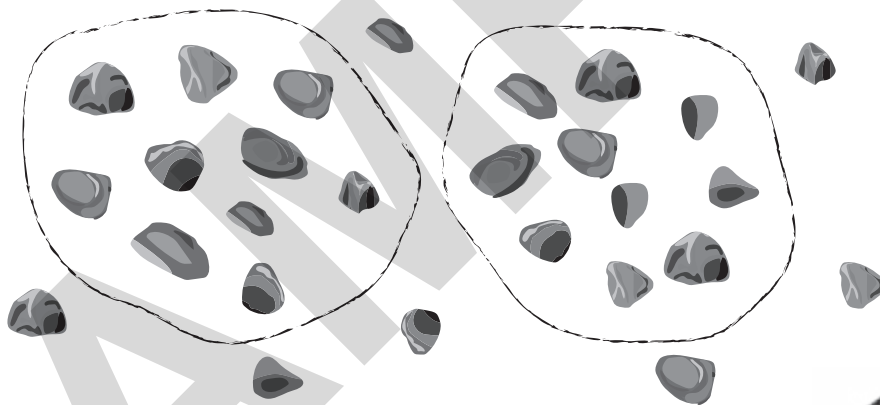
10   (20)   50   100

Count

> Count in tens: 10, 20. Count on in ones: 21, 22, 23, 24, 25, 26, 27.
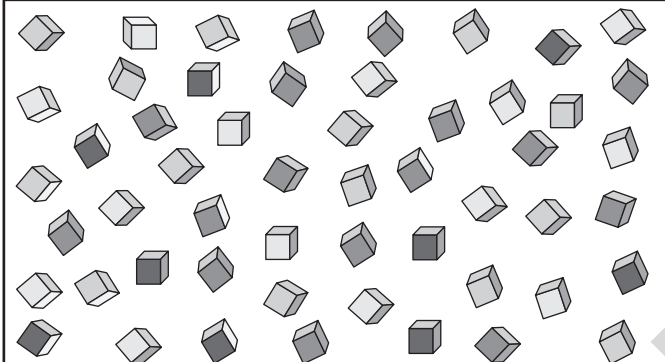
Answer: 27 stones

5 How many cubes are in the collection?

Estimate then count to check.

Estimate
10   20   50   100
Count

Compare your estimate and count with another person's.
Do you both agree?

6 Sofia counts 100 beads in twos.

Draw a ring around any numbers she said.

24   59   36   42   17   78   12

Practice

7 Write the tens numbers in order, from 100 to 10.

100								10

8 Marcus and Arun make some numbers.
Marcus chooses the tens. Arun chooses the ones.

They make 53 and 87.

How many tens does Marcus choose? ☐ and ☐
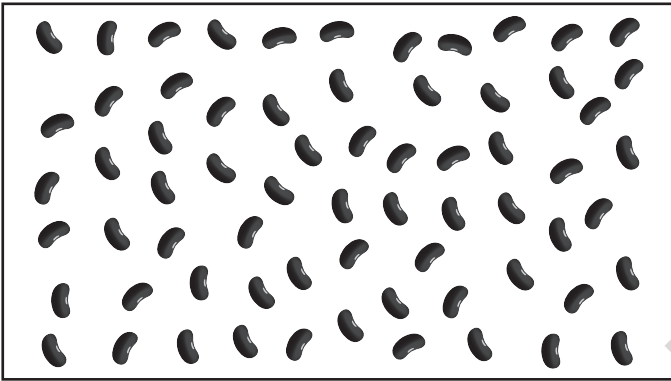
How many ones does Arun choose? ☐ and ☐

9   How many beans are in the collection?

Estimate then count to check.

	Estimate
	10 20 50 100
	Count

Compare your estimate and count with another person's.
Do you both agree?

10 Tick the correct sentences.

> An even number of objects can be sorted into 2 equal groups.

> 2 more than an odd number is always an odd number.

> Numbers with 1, 3, 5, 7 or 9 ones are even numbers.

> 0 is an odd number.

Challenge

11 How many large spots are in the box?

How many small spots are in the box?

Estimate, then use the two boxes below to help you count the large spots and then the small spots.
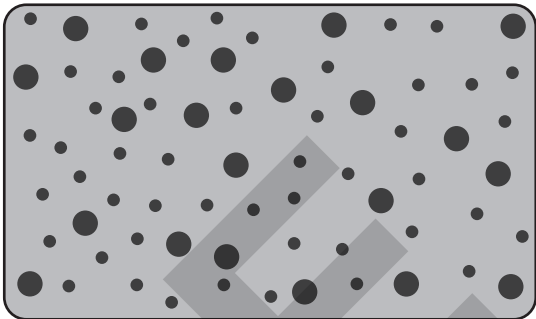
Tip

You could count in twos, fives or tens to find the total.

Estimate
10   20   50   100
Count

Estimate
10   20   50   100
Count

Compare your estimate and count with another person's.
Do you both agree?

12 Draw or lightly colour a shape joining 5 small squares on the 100 square.

Only 1 number inside your shape can be odd.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
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
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Draw your shape again in a different place.

This time only one of the numbers inside your shape can be even.

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1 Numbers to 100

> 1.3 Comparing and ordering numbers

Exercise 1.3

Focus

> close, closer   end, stop, finish
> extend   order or ordering numbers
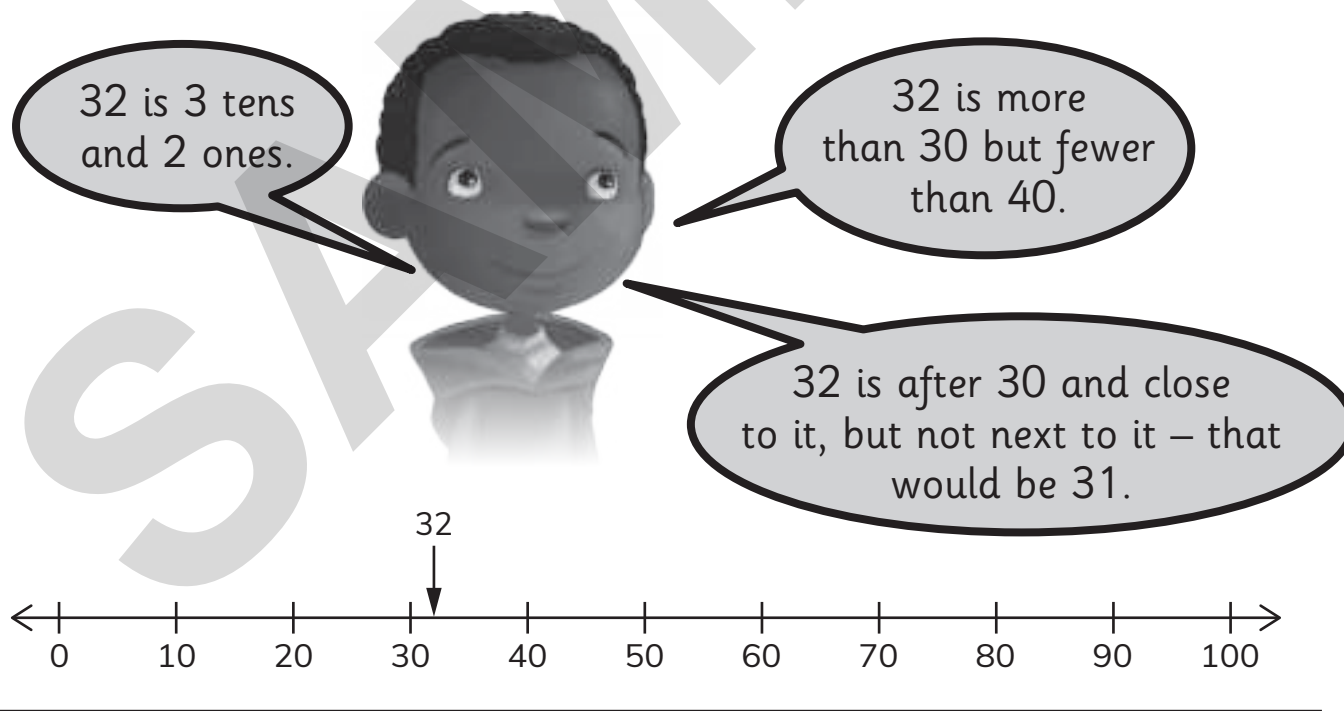> ordinal numbers   sequence
> start, beginning

Worked example 3

Estimate and show where 32 is on this number line.

Answer:

> 32 is 3 tens and 2 ones.

> 32 is more than 30 but fewer than 40.

> 32 is after 30 and close to it, but not next to it – that would be 31.

1 Estimate and show where 15, 43 and 78 are on this number line.
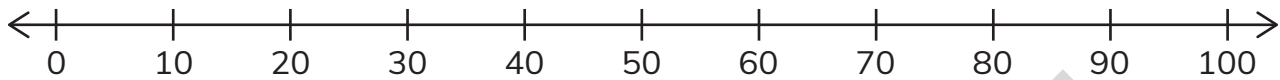
2 Draw a ring around the 3rd elephant.
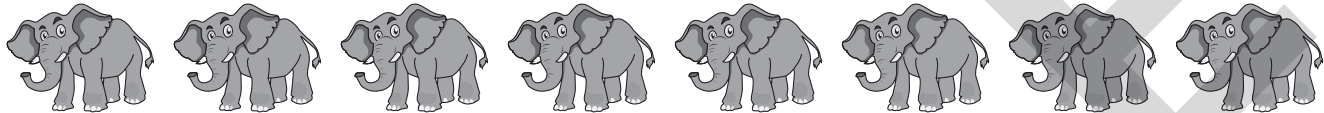
3 Arun is last in a queue of 32 people.

Write the ordinal number for Arun's place in the queue.

Worked example 4

A number sequence starts at 35. It counts on in tens and stops at 65.

What are the numbers in this sequence?

I used a 100 square to help me.

All the numbers have 5 ones. They are all odd.

35, 45, 55, 65.

Answer: 35, 45, 55, 65.

---

4 A number sequence starts at 42.

It counts on in tens and stops at 72.

Write the numbers in the sequence.

⬜ , ⬜ , ⬜ , ⬜

23 〉

5 A number sequence starts at 32.

It counts on in twos and stops at 38.

Write the numbers in the sequence.

☐ , ☐ , ☐ , ☐

6 Draw a ring around the correct words for the number sequence in question 4.

All the numbers are **odd even**.

All the numbers have the same number of **ones tens**.

7 Compare 35 and 53.
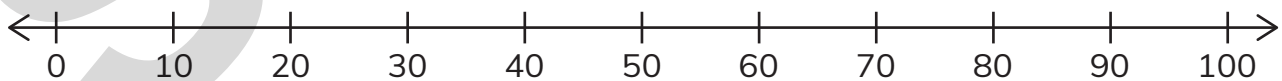
Which number is greater? ☐

Tip

For questions 7 and 8, you can use the number line or place value grid below to help you.

8 Order these numbers from smallest to greatest.

| 21 | | 53 | | 35 | | 12 |

_____ _____ _____ _____

Tip

Remember to use a pencil – you can erase your working and reuse the diagrams!

0 10 20 30 40 50 60 70 80 90 100

10s	1s

Practice

9 Estimate and show where 3 and 49 are on this number line.

0 10 20 30 40 50 60 70 80 90 100
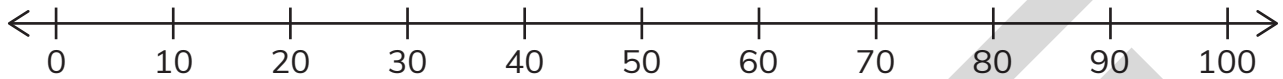
10 Draw a ring around the last leaf.

Draw a line under the 4th leaf.

Tick the 1st leaf.

11 Zara's number sequence is 78, 76, 74, 72, 70.

Complete the description of Zara's number sequence.

_____ at 78. Count _____ in _____ . Stop at _____ .
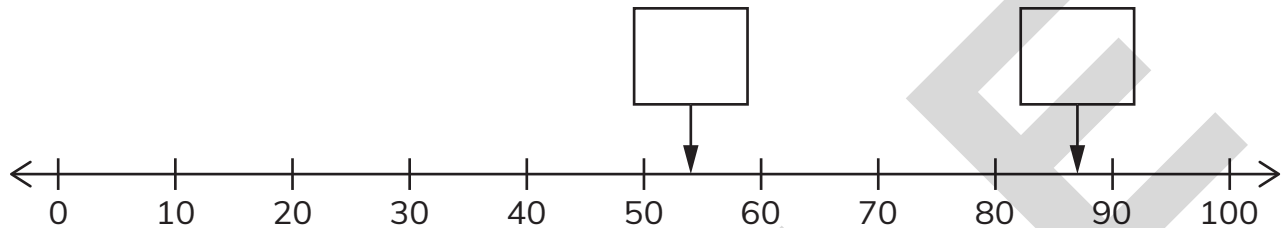
12 Compare 63 and 36.
Which is the smaller number?

Tip

For questions 12 and 13, you can use the number line or place value grid used for questions 7 and 8 to help you.

13 Order these numbers from smallest to largest.

| 64 | 75 | 46 | 57 | 19 |

_____   _____   _____   _____   _____

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1 Numbers to 100

Challenge

14 Arun marks two numbers on the number line.

Estimate and write Arun's numbers in the boxes.

```
       ┌────┐              ┌────┐
       │    │              │    │
       └──┬─┘              └──┬─┘
          ↓                   ↓
←─┼────┼────┼────┼────┼────┼────┼────┼────┼────┼────→
  0   10   20   30   40   50   60   70   80   90  100
```

15 Sofia and Zara join a queue to get tickets for the school disco.

There are 51 people in front of them.

What are Sofia and Zara's positions in the queue? _____ and _____

16 Write a sequence of 5 numbers.

Complete the sentences to describe your sequence.

☐ ☐ ☐ ☐ ☐

_____ at _____ . Count _____ in _____ . Stop at _____ .

17 Order these numbers from greatest to smallest.

| 82 | 48 | 84 | 28 | 42 |

_____ _____ _____ _____ _____

2 Geometry

> 2.1 3D shapes

Exercise 2.1

curved surface   edge

face   vertex, vertices

Focus

Worked example 1

Match these shapes to their names.

| cube | cuboid | square-based pyramid | cylinder | sphere |
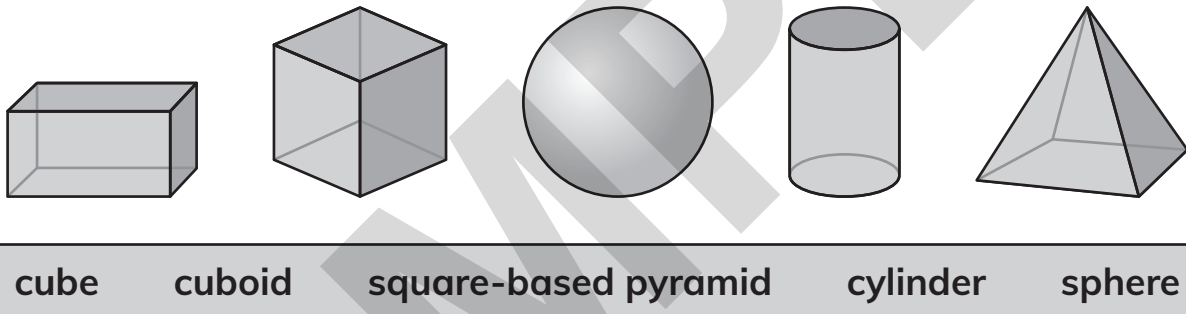
I know a sphere because it's like a ball.

I know a cube because it has six faces that are the same.

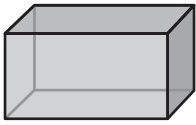A cylinder can roll.

There is a shape with a vertex at the top.

It has a square face. That is a square-based pyramid.

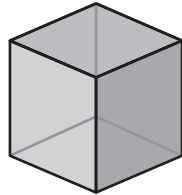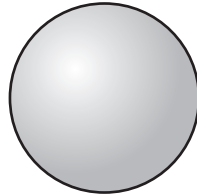That means that the last one is a cuboid.

27 >

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2 Geometry

Continued

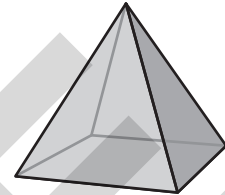**Answer:**

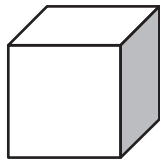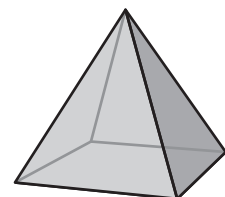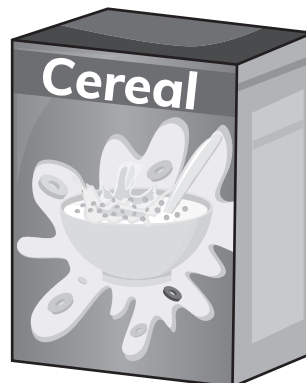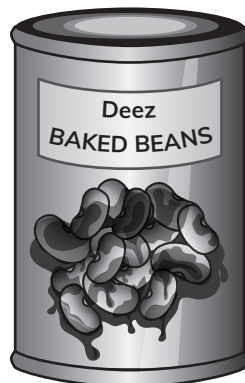|				
cuboid	cube	sphere	cylinder	square-based pyramid

1 a Describe this 3D shape.

This shape is a _____ .

It has _____ faces.

It has _____ edges.

It has _____ vertices.

b Choose one of these 3D shapes. Name and describe it using edges, faces, vertices and curved surfaces.
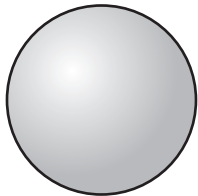
Deez
BAKED BEANS

Cereal
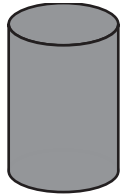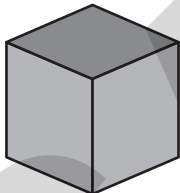
Name: _____

Description: _____

_____

2 Draw a ring around the correct word to name each shape.

	sphere	cube	pyramid	cuboid
	cube	cylinder	sphere	cuboid
	sphere	cube	cuboid	cylinder
	cube	cuboid	pyramid	sphere
	cuboid	sphere	pyramid	cube

3 Look around you.

Find as many 2D and 3D shapes as you can.
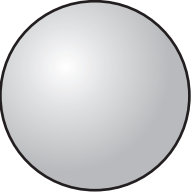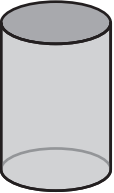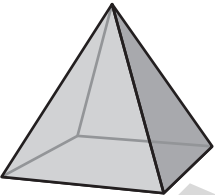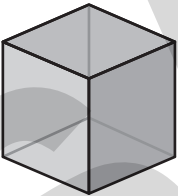
Choose 3 of each.

Draw and write what you find in this table.

Object	Name of 2D shape

Object	Name of 3D shape

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2.1 3D shapes

4 Complete the number of faces, edges, curved surfaces and vertices in this table.

Shape	Faces	Edges	Curved surfaces	Vertices
	0			0
				0
	5	8		
				8
		12		

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2 Geometry

Practice

5 Tony has a 3D shape.

One face of the shape is a square.

What could the shape be? _____

6 a What am I? Write the name under the picture.

A

B

C

D
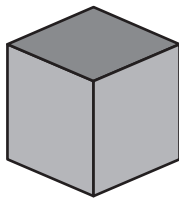
E

_____   _____   _____

_____   _____   _____

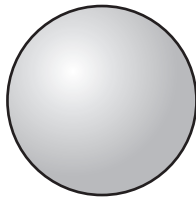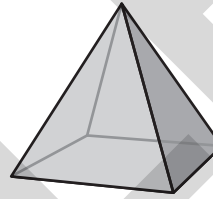b I have more than 2 faces.

None of my faces are circles.

I have 1 square face.

Some of my faces are triangles.

What am I?   I am a _____

c I have more than 2 vertices.

I have no triangular faces.

All my faces are the same size.

I have no curved surfaces.

What am I?   I am a _____

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2.1 3D shapes

7   Use the Venn diagram to sort the shapes.

You can draw the shapes or write their names.

Curved surfaces

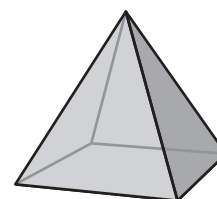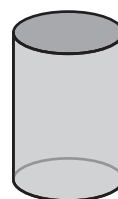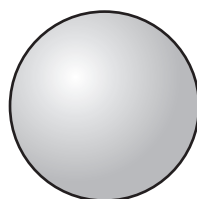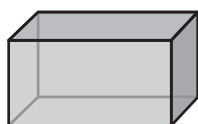We are working with Cambridge Assessment International Education towards endorsement of this title.
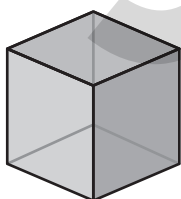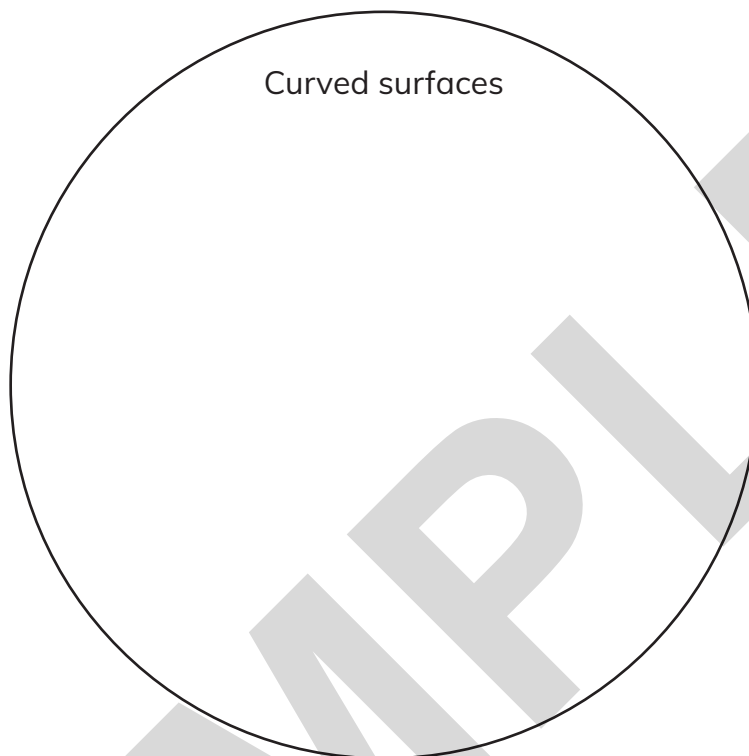
2 Geometry

8 Find 4 3D shapes that are near to you.

What 2D shapes can you find on them?
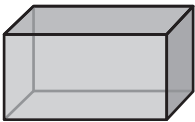
For example, a cuboid may have 2 square faces
and 4 rectangular faces.

Draw and write what you have found in this table.

Object	Name of 3D shape	2D shapes you can see

Challenge

9 Susie says that her 3D shape has 12 edges.
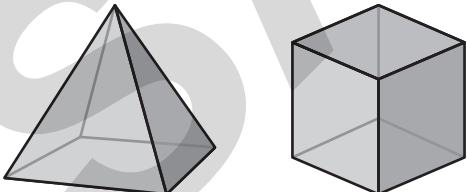
Max says that it can be a square-based pyramid, a cube or a cuboid.

Is Max correct? Explain your answer.

_____

_____

10 Look at each pair of shapes.

Can you say what is the same and what is different about the shapes in each pair?

Use the table to record your ideas.

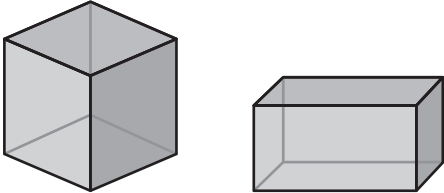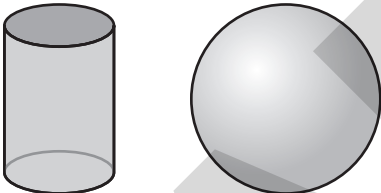| Shapes	What is the same?	What is different?
	Both have 6 faces, 12 edges and 8 vertices.	

11 Sort the shapes using a Venn diagram.

Write or draw the shapes in the correct places.

Only flat faces

cube   pyramid   cylinder   sphere   cuboid

Which shapes belong outside the circle?

Write what you notice about the shapes outside the circle.

Which shapes belong inside the circle? Write their names.

12 Name these 3D shapes.

Then look for and find any of these shapes in or outside your house.

Draw what you find.

Write the name of 2D shapes that can be found on your 3D shapes.

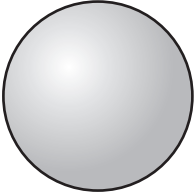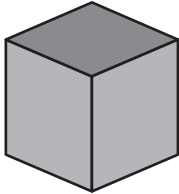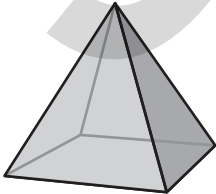| 3D shape	Name	Picture	2D shapes I can see
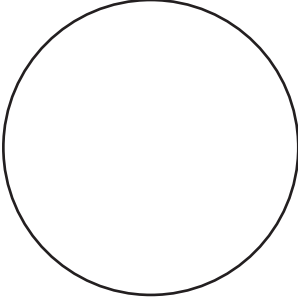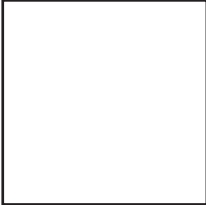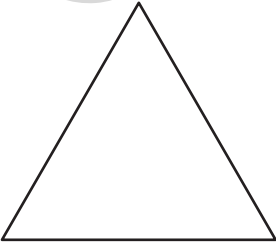
Name these 2D shapes.

Then look for and find any of these shapes in or outside your home.

Draw what you find.

Write what 3D shapes you can make from your 2D shapes.

2D shape	Name	Picture	3D shapes I can make
(circle)			
(square)			
(rectangle)			
(triangle)			

› 2.2 2D shapes and symmetry

Exercise 2.2

Focus

| hexagon   horizontal   line of symmetry |
| mirror image   octagon   pentagon |
| polygon   symmetry, symmetrical   vertical |

Worked example 2

Where is the line of symmetry in this shape?
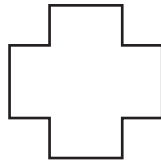
If we fold this shape along the dotted line, the 2 sides will match exactly.

That's called the **line of symmetry**. Some shapes have more than one.

Lots of shapes have a line of symmetry.
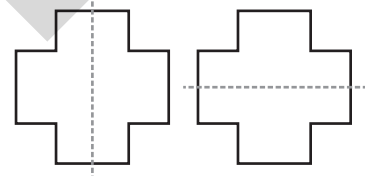
1   Draw a line of symmetry on these pictures.

Use a mirror to help you.
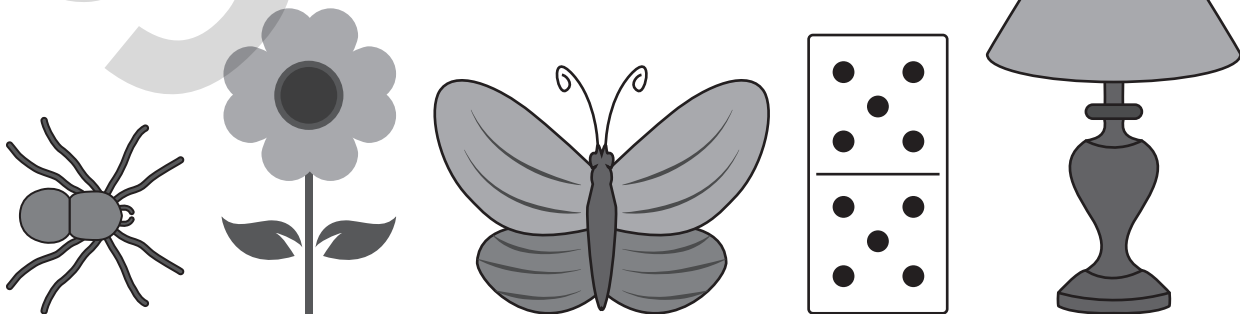
2 Name the shapes. Write words to describe these shapes.

Use words like side, vertices, vertical lines.

Name: _____

Description: _____

_____

Name: _____

Description: _____

_____

Name: _____

Description: _____

_____

Name: _____

Description: _____

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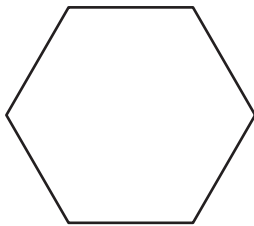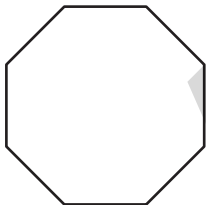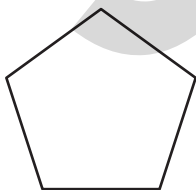
2.2 2D shapes and symmetry

Practice

3   Tick ✔ the symmetrical pictures, cross ✘ the pictures that are not symmetrical.

Draw one line of symmetry on the pictures you ticked ✔ .
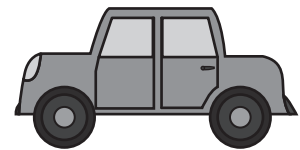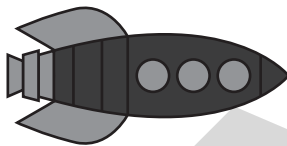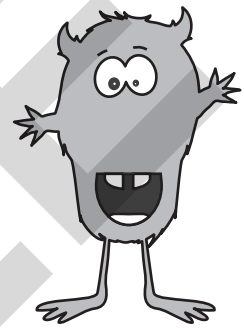
4 Draw a line to join each shape with the matching symmetrical half.
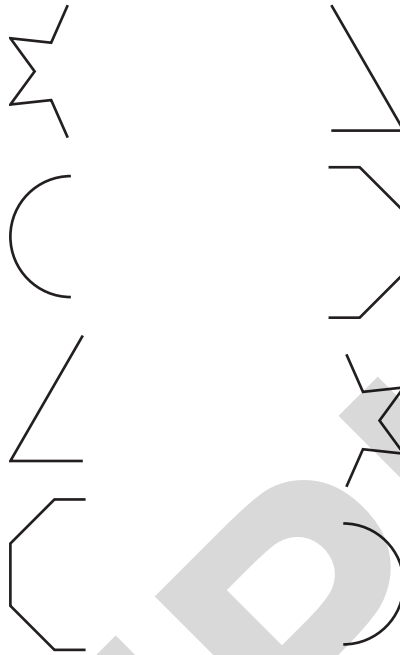
Challenge

5 Complete and colour these pictures so that they are symmetrical.
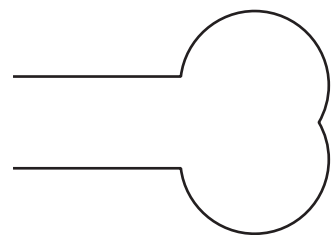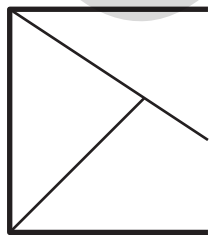
6 Complete the drawing to make it symmetrical.

Colour the completed face.
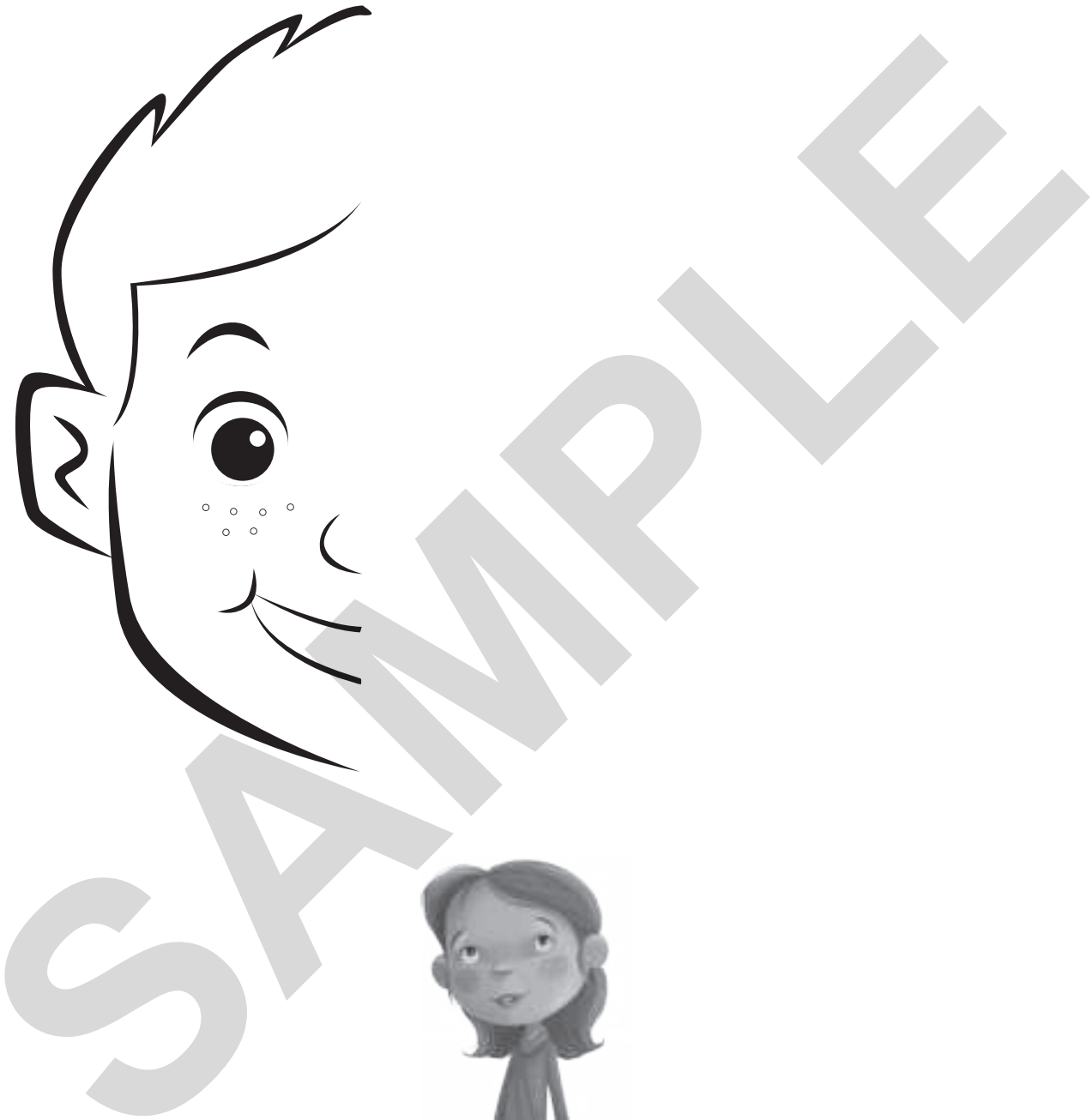
Tip

Remember to make the picture symmetrical. You need to think about the colours as well as the shapes.

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2 Geometry

› 2.3 Fractions of shapes

Exercise 2.3

equal parts   fraction   quarter   three quarters

Focus

Worked example 3

Is each shape divided into halves or quarters?

Draw stripes on one of the halves.

Draw dots on one of the quarters.
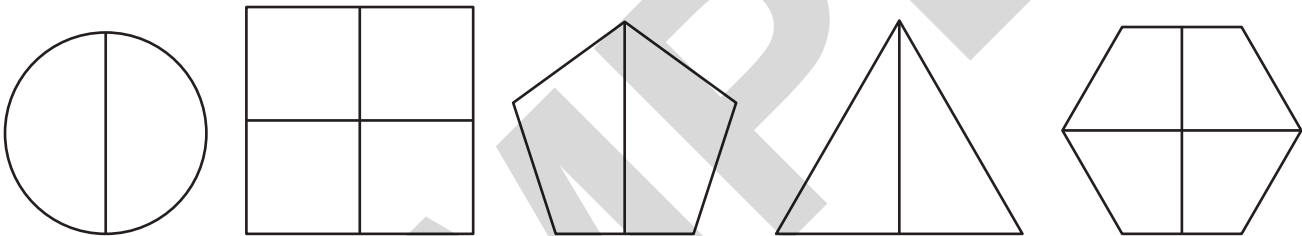
The shapes that have 2 equal parts show halves.

The shapes with 4 equal parts show quarters.

Look at each shape and count the number of equal parts.
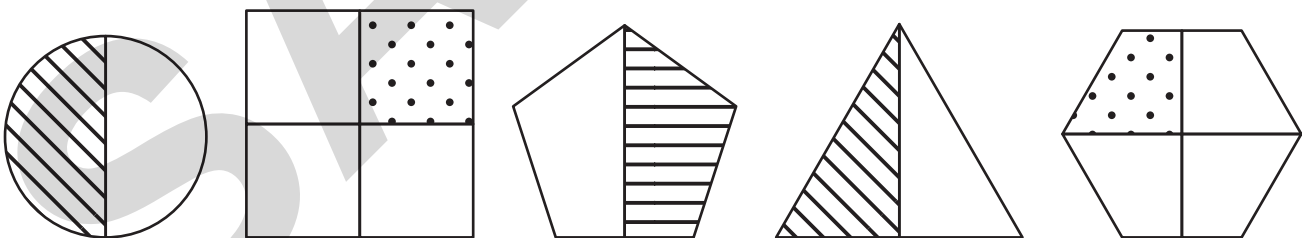
---

1   Colour in one half of each shape.
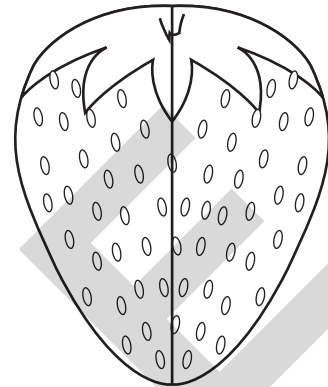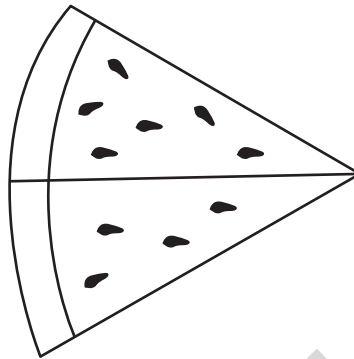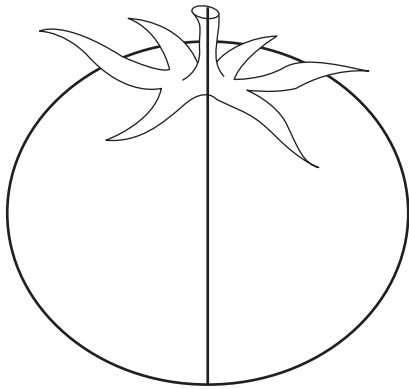
Draw 2 more things you can cut in half.

Colour in one half of each.

45 >

2   This shows 2 halves of a square.

Each part is labelled a $\frac{1}{2}$
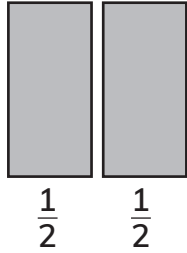
$\frac{1}{2}$ $\frac{1}{2}$

$\frac{1}{2} + \frac{1}{2} = 1$ whole

Find and draw the halves of these shapes and write the number sentence below them.
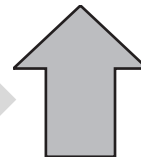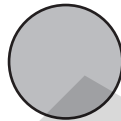
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2.3 Fractions of shapes

3 Colour in one quarter of each shape.
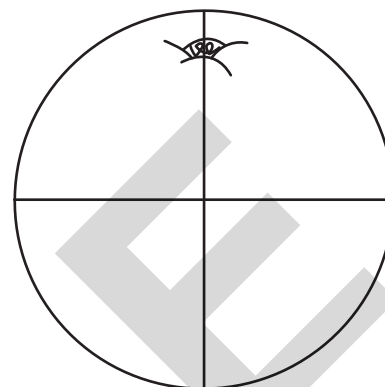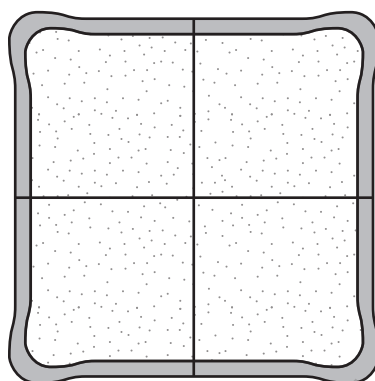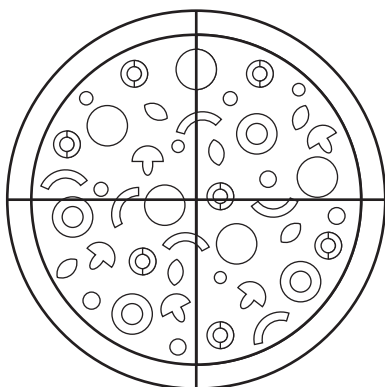
Draw 2 more things you can cut into quarters.

Colour in one quarter of each.

4 Draw 4 shapes of your own and show how to cut them into halves or quarters.

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2.3 Fractions of shapes

Practice

5 Using a colour, complete the shapes to show $\frac{1}{2} + \frac{1}{2} = 1$ whole.
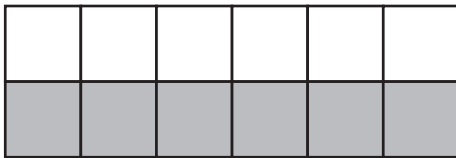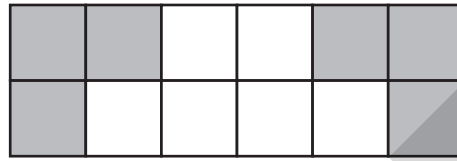
Half of each shape has _____ squares coloured.

Each whole shape has _____ squares coloured.

Complete the number sentence:

$\frac{1}{2} +$ _____ $=$ _____

6 Tick ✔ the shapes that show quarters.

Colour one quarter in each of those shapes.
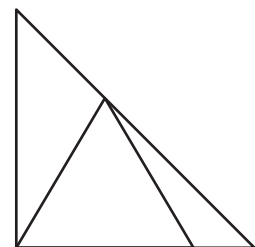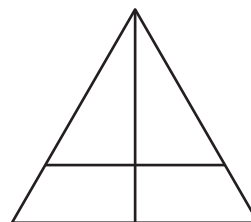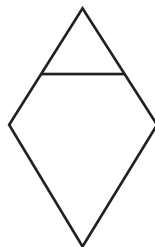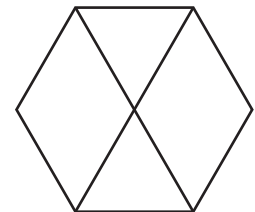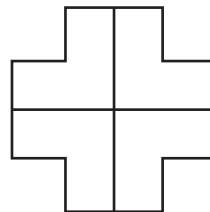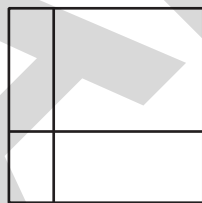
7 Colour a quarter of each shape.

Show a different quarter each time.
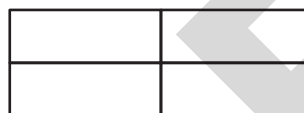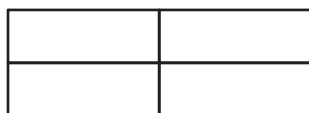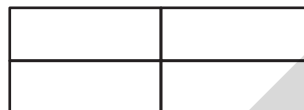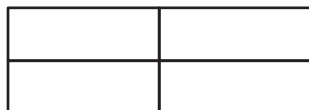
Challenge

8 These biscuits have been broken in half.

How many whole biscuits are there?
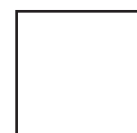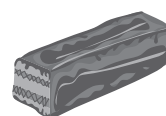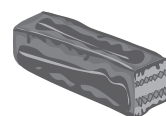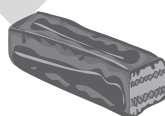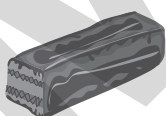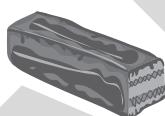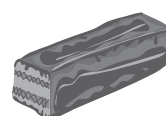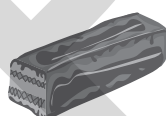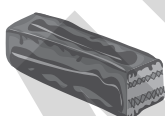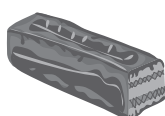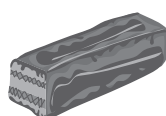
9 What fraction of each shape has been coloured?

Use $\frac{1}{2}$, $\frac{1}{4}$ and three-quarters for your answers.

a

_____

b

_____

c

_____

10 How many different ways are there to show $\frac{1}{4}$ of a bar of chocolate?

I can find 3 different ways. I'll show you.

Now it's your turn to find 2 more ways.

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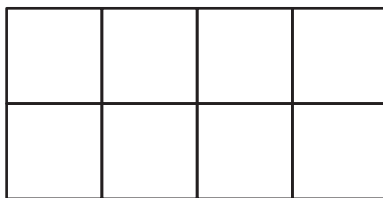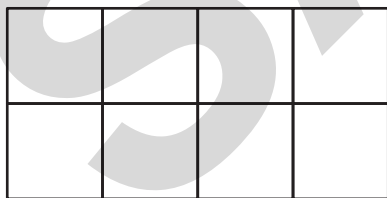
2 Geometry

11 a   What fraction of the square is shaded?

_____
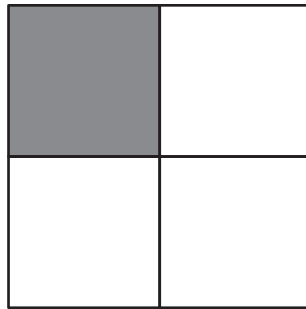
b   What fraction of the square is shaded?

_____
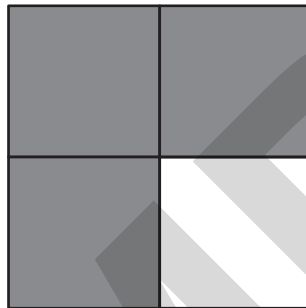
c   What fraction of the rectangle is shaded?

_____

d   What fraction of the rectangle has stripes?

_____
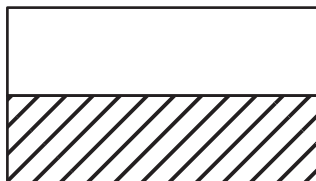
3 Measures

› 3.1 Length

Exercise 3.1

centimetre   distance   estimate   height   just over   just under   length   metre   ruler   width

Focus

1   Measure the length of a table using the objects below.

Record your results.

Object	Number
finger	
hand	
pencil	
spoon	

finger   hand

pencil   spoon

Are the numbers the same as each other or different?

Explain the answers.

_____

_____

_____

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3 Measures

2 Look for objects in the room that are longer or shorter than your shoe.

Now look for objects in the room that are longer or shorter than a scarf.

My shoe is shorter than your scarf.

My scarf is longer than your shoe.
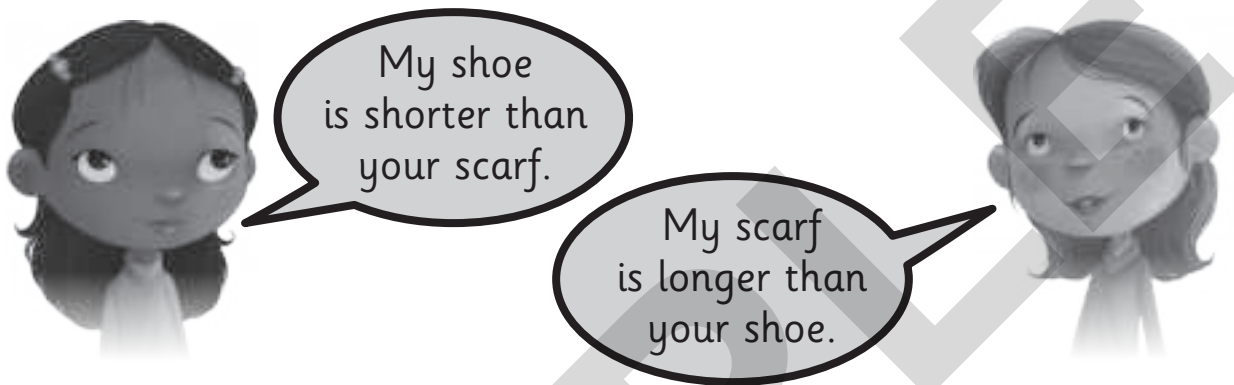
Write the name of each object in the table and tick whether they are longer or shorter than the shoe and the scarf.

Object	Shorter than shoe	Longer than shoe	Shorter than scarf	Longer than scarf

3   A ruler is about 30 centimetres long.
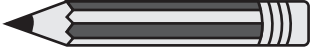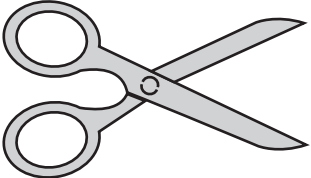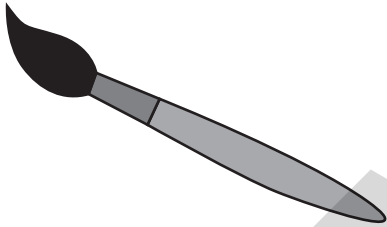
Which of these objects are shorter than 30 centimetres or about the same as 30 centimetres?

Which are longer than 30 centimetres? Estimate to find your answers.

Object	Shorter	Longer	About the same
A frying pan			
A fork			
Your hand			
A paint brush			
Your shoe			
Your table			
A skipping rope			
A straw			

4 Estimate and measure the lengths of these objects.

Object	Estimate	Measure
	_____ centimetres	_____ centimetres
	_____ centimetres	_____ centimetres
	_____ centimetres	_____ centimetres
	_____ centimetres	_____ centimetres
	_____ centimetres	_____ centimetres
	_____ centimetres	_____ centimetres

Tip

Use your ruler when you **measure**. Do not use your ruler when you **estimate**.

56

Practice

5   Use these objects to measure the length of your arm and your leg.

Write your answers in the table.

How long is your arm?	How long is your leg?
_____ fingers	_____ fingers
_____ hands	_____ hands
_____ pencils	_____ pencils
_____ spoons	_____ spoons

Explain why the answers are different.

_____

_____

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3 Measures

6 Use a ruler. Measure and write the length of this pen.

_____ centimetres

Draw something that is longer than the pen. How long is it?

Draw something that is shorter than the pen. How long is it?

7 Would you measure these things using centimetres or metres?
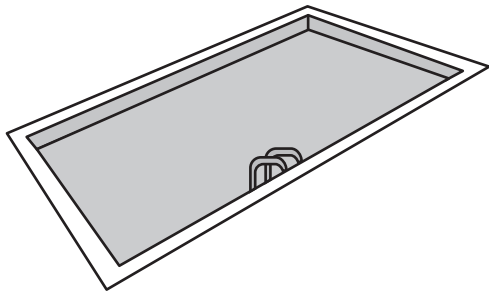
Length of a swimming pool _____	Length of a bar of chocolate _____
Length of your shoe _____	Length of 5 paper clips joined together _____
Length of a bus _____	Length of a worm _____
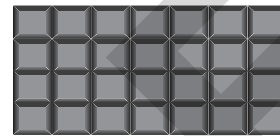
8 Write and draw five things you can see that are about 15 centimetres long.

Challenge

9 Look around your home.

Without using a tape measure, what could you use to measure how long a pencil is? What could you use to measure the length of your bedroom?

Draw and write what you used and what you found out.

10 Estimate and then measure the length of each bar. The rulers are marked in centimetres.

Tip

Look where the bars start.

_____ centimetres

_____ centimetres

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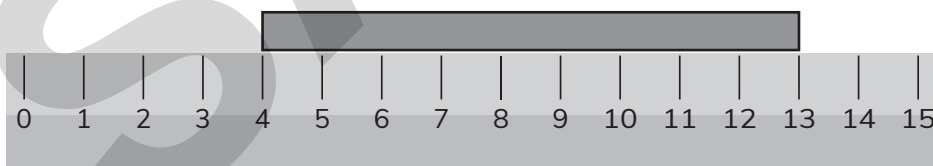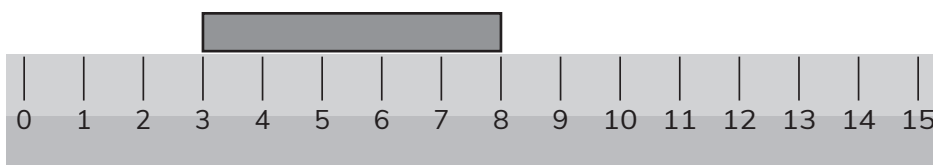
3 Measures
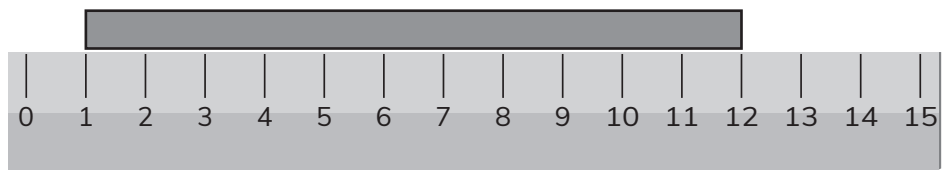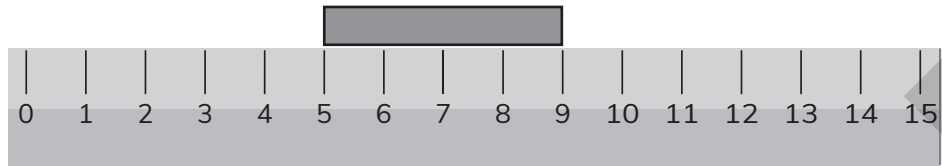
_____ centimetres

_____ centimetres
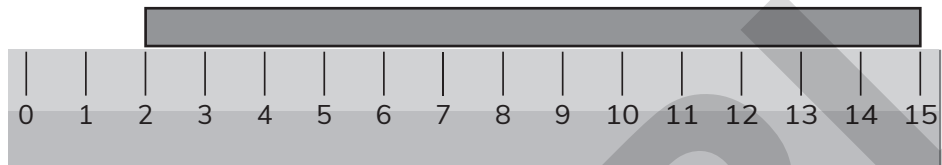
_____ centimetres

11 Write these lengths in order, starting with the shortest.

a   30 centimetres   70 centimetres   50 centimetres   39 centimetres

_____

_____

b   77 centimetres   88 centimetres   78 centimetres   87 centimetres

_____

_____

c   1 metre   3 metres   4 metres $\frac{1}{2}$ metre

_____

_____

12 Estimate how far you can jump.

Show where you will start and where you will land,
then measure the distance.

From your starting line, put your feet together, swing your
arms and jump. Measure the actual distance you jumped.

How close was your estimate? Have another go.
Is your estimate any closer?

Estimate	Actual distance
centimetres	centimetres

> 3.2 Drawing and measuring lines

Exercise 3.2

Focus

> **Tip**
>
> Remember to put 0 or the end of your ruler at the beginning of the line.

1   Use a ruler to measure the length of each line.

a   _____

_____ centimetres

b   _____

_____ centimetres

c   _____

_____ centimetres

d   _____

_____ centimetres

e   _____

_____ centimetres

2 You will need a ruler to measure how long or how wide these things are.

My hand is about _____ centimetres wide.

My arm is about _____ centimetres long.

My arm span is about _____ centimetres long.

My hand is about _____ centimetres long.

My longest finger is about _____ centimetres long.

Across my foot is about _____ centimetres wide.

What was difficult to measure with a ruler?

_____

What would you use next time?

_____

How many centimetres long was the

longest thing you measured? _____

How many centimetres wide was the

shortest thing you measured? _____

> **Tip**
>
> The length of an object is usually longer than the width.
>
> Use a tape measure or put rulers end to end to measure longer objects.

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3 Measures

Practice

3   Use a tape measure to measure:

a   the length of your room.
Use words such as metre, centimetre, just over, just under.

_____

_____

b   the width of your room.

Use words such as metre, centimetre, just over, just under.

_____

_____

4   Find other lengths at school or at home that you can
safely measure using a tape measure.

Draw or write what you are measuring	Measurement
	metres
	metres
	metres
	metres

5　a　Choose whether you would use metres or centimetres
　　　to measure the lengths of these objects.

　　　Draw a ring around metres or centimetres.

a pencil case	metres	centimetres
a bus	metres	centimetres
a pencil	metres	centimetres
a wall	metres	centimetres
a book	metres	centimetres
a car	metres	centimetres

b　Draw or write 4 more things you would measure using metres.

Draw or write 4 more things you would measure using centimetres.

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3 Measures

Challenge

6 Explore measuring in centimetres. Which line is longer?

A ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

B ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

How much longer is the line? ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

7 Which line is shorter?

A ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

B ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

How much shorter is the line? ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

8 Which line is shorter?

A ⎯⎯⎯⎯⎯⎯⎯⎯

B ⎯⎯⎯⎯

How much shorter is the line?

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Tip

Remember to put 0 or the end of your ruler at the beginning of the line.

9 Which line is longer?

A ──────────────────────

B ────────────────────
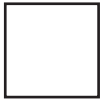
How long is the longest line? _____

How long is the shortest line? _____

How much longer is the longest line? _____

Use your ruler to find out.

10 These rulers are marked in centimetres. Choose one answer.

Draw a ring around the one you choose.

a
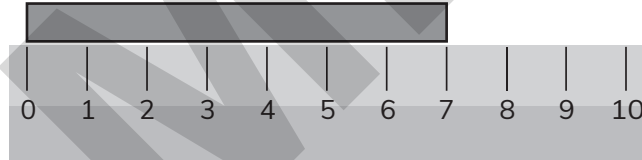
The shaded rectangle is: 6 centimetres   7 centimetres   long.

b How long is the striped rectangle? _____
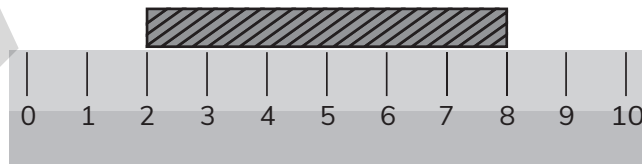
c How long is the spotty rectangle? _____
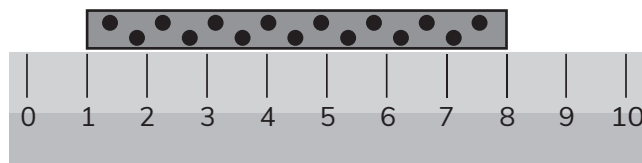
69

11 Draw a ring around the correct answer.

a The height of an apple is about:

3 centimetres   60 centimetres   10 centimetres   1 metre

b The height of a strawberry is about:

25 centimetres   5 centimetres   1 metre   15 centimetres

c The length of a pencil is about:

1 metre   120 centimetres   20 centimetres

d   The height of a tree is about:

100 centimetres   30 centimetres   5 metres
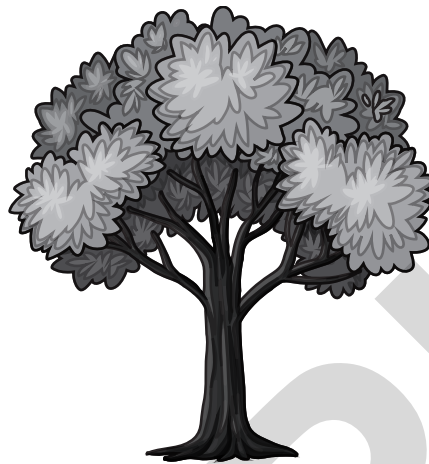
e   The length of a plaster is about:

55 centimetres   5 centimetres   1 metre
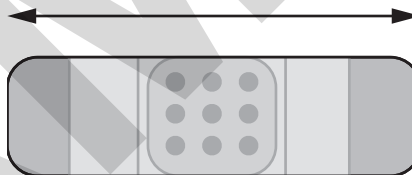
4 Statistics

> 4.1 Carroll diagrams and tally charts

Carroll diagram   least popular   most popular
non-statistical question
statistical question   tally   tally chart

Exercise 4.1

Focus

1   Using a pencil, hold a paper clip at the centre of the spinner.
    Spin the paper clip and draw the dice face it lands on.

    Make tally marks for that number.

    Write the number.

    If you land on the same number as one you already
    have, spin the spinner again.

    The first one has been done for you.

Dice face	Tally the number	Write the number
	‖‖	5

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4.1 Carroll diagrams and tally charts

Dice face	Tally the number	Write the number

2 Draw the shapes to complete the Carroll diagram.
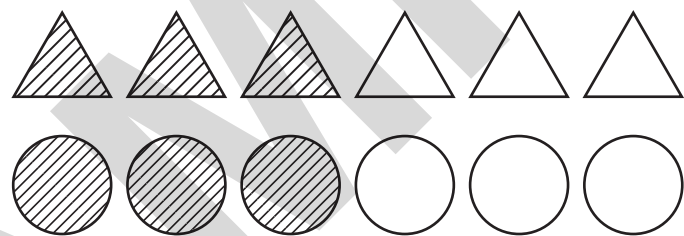
	Triangle	Not triangle
Striped		
Not striped		

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4 Statistics

Practice

3 Count the starfish.

Use tally marks to show how many starfish are in each group.

Write the total.

Starfish	Tally	Number
✦ ✦ ✦ ✦ ✦ ✦	卌 I	6
✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦		
✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦		
✦ ✦ ✦ ✦ ✦		
✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦		
✦ ✦ ✦ ✦		
✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦		

4 This tally chart shows the number of bikes a shop sold in 4 weeks.

Bikes sold in a week	Tally
Week 1	ЦЩ ЦЩ ЦЩ |
Week 2	ЦЩ ЦЩ ЦЩ ЦЩ
Week 3	ЦЩ ЦЩ ЦЩ ЦЩ ||
Week 4	ЦЩ ЦЩ ЦЩ ЦЩ ЦЩ ||||
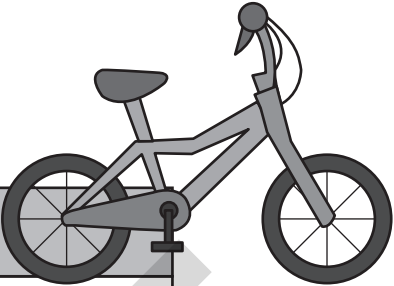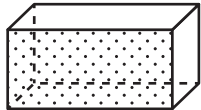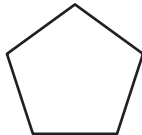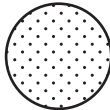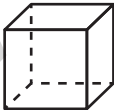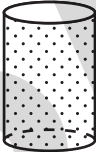
How many bikes were sold in the 4th week? _____

How many bikes were sold in the 1st week? _____

How many bikes were sold altogether in the 2nd and 3rd weeks? _____

How many bikes were sold in the 4 weeks altogether? _____

5 Sort the shapes in the Carroll diagram using arrows.
The first one has been done for you.

	2D shape	Not a 2D shape
Spots		
No spots		

Challenge

6 Using a pencil, hold a paper clip at the centre of the circle.

Spin the paper clip.
Where does it stop on the spinner?

Have 12 spins altogether.

Record your results in the tally chart.
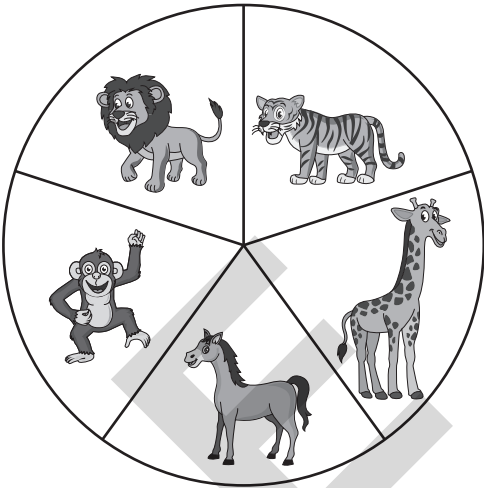
Animal	Tally marks	Number

Play the game again.
Write the results in a different colour in the tally chart.

Are the results the same?
What is the same and what is different?
Why do you think this happened?

7 Group the animals by writing the names in the correct areas in the Carroll diagram.

dolphin

penguin

eagle
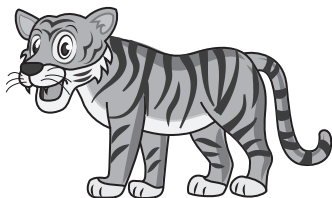
tiger

hen

tortoise
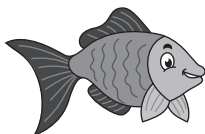
fish

bee
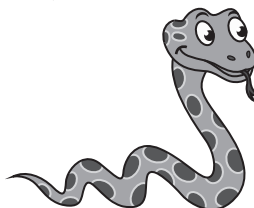
snake

	Can fly	**Cannot fly**
2 or fewer legs		
Not 2 or fewer legs		

Now, choose 1 different animal to draw in each box.

5 Working with numbers to 100

> 5.1 Addition

Exercise 5.1

column addition   complement (of 10, 20 and tens numbers to 100)   digit   place holder   place value grid

Focus

1   How many counters are there?

Talk to your partner or carer about what you see. Ask them what they see.

2   Draw two different arrangements for 5 on the ten frames.

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5.1 Addition

Worked example 1

$23 + 5 = \boxed{}$

The tens have not changed.
$23 + 5 = 28$

10s	1s
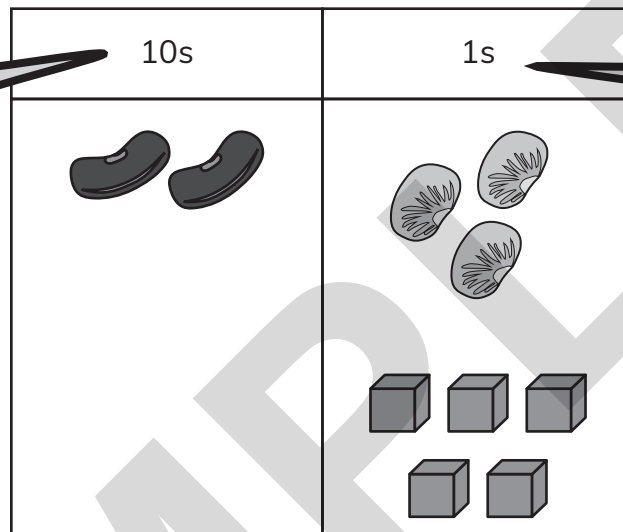
$3 + 5 = 8$

Jump on 5 on the number line. $23 + 5 = 28$

+5

←—|————|————|——⌒——|————|————|————|————|————|————|→
0   10   20   30   40   50   60   70   80   90   100

23 28
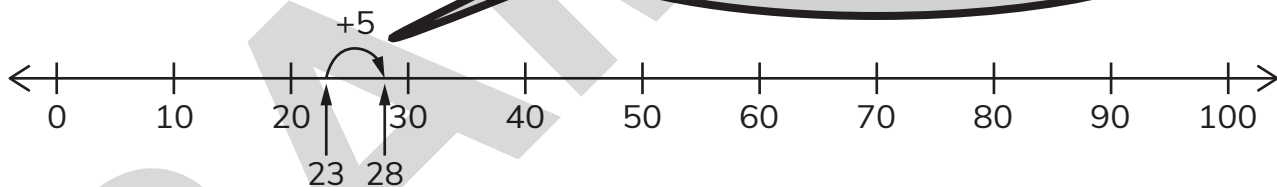
Answer: $23 + 5 = 28$

3 Find the totals. You can use the number line in question 4 to help you.

a $25 + 4 = \boxed{}$

b $42 + 5 = \boxed{}$

c $51 + 7 = \boxed{}$

d $33 + 6 = \boxed{}$

79 ⟩

4   Find the totals. You can use the number line to help you.

<--+----+----+----+----+----+----+----+----+----+-->
   0   10   20   30   40   50   60   70   80   90   100
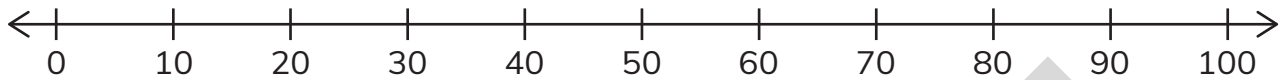
a   28 + 10 = ☐

b   32 + 10 = ☐

c   54 + 20 = ☐

d   41 + 20 = ☐

5   Complete the calculation.

10s	1s

        3   5

    + ☐   ☐

       ☐   ☐

6 Find the total of each set of three numbers.

a 5 + 5 + 5 = ☐

b 6 + 5 + 4 = ☐

c 8 + 4 + 2 = ☐

Did you add the numbers in the same order as they are written or did you do something else?

Discuss different ways to find the totals with a partner or carer.

Practice

7 Find the totals.

a 64 + 5 = ☐

b 31 + 8 = ☐

c $\begin{array}{r} 84 \\ +\ 3 \\ \hline \end{array}$

d $\begin{array}{r} 92 \\ +\ 6 \\ \hline \end{array}$

8 Find the totals.

a 89 + 10 = ☐

b 26 + 20 = ☐

c $\begin{array}{r} 68 \\ +\ 20 \\ \hline \end{array}$

d $\begin{array}{r} 77 \\ +\ 10 \\ \hline \end{array}$

Worked example 2

$3 + 7 = 10$

Use this number sentence to help you write two number sentences to show complements of 20 and one number sentence to show complements of 100 using tens numbers.

$13 + 7 = 20$

$3 + 17 = 20$

> As 20 is 10 more than 10, we can just add 10 to one of the numbers and the total.

$30 + 70 = 100$

> Change the ones to tens to make complements of 100.

9 Use this number sentence to help you write two number sentences to show complements of 20 and one number sentence to show complements of 100 using tens numbers.

$8 + 2 = 10.$

_____ _____ _____

10 Use the number bonds for 6 to help you write four number sentences to show the complements of 60 using tens numbers.

11 Find the totals.

a $3 + 6 + 7 =$ ☐

b $0 + 7 + 10 =$ ☐

c $1 + 5 + 8 =$ ☐

d $2 + 9 + 5 =$ ☐

Challenge

12 Find the totals.

a
```
   58
+  20
```

b
```
   62
+   7
```

c
```
   46
+  20
```

d
```
   83
+   6
```

e
```
   55
+  30
```

f
```
   71
+   8
```

13 Sofia writes $4 + 6 = 10$ and $40 + 60 = 100$.

Which number sentence showing complements of 20 does she use to help her?

_____

14 Write the 5 number sentences which use tens numbers to show complements of 90.

15 Find the totals. Look for complements of 10, or near complements, to help you.

$7 + 3 + 8 =$ ☐

$6 + 8 + 5 + 2 =$ ☐

$2 + 3 + 4 + 5 =$ ☐

$3 + 4 + 7 + 8 =$ ☐

$5 + 6 + 7 + 8 =$ ☐

$1 + 4 + 5 + 8 + 9 =$ ☐

Did you add the numbers in the same order as they are written or did you do something else?

Discuss different ways to find the totals with other learners.

16 Write the numbers 1, 2, 3, 4, 5, 6, 7, 8 and 9 in this square.

Every row, column and from corner to corner in the square must add to 15.

> **Tip**
>
> Think about how to make a total of 15 in every row and column, and from corner to corner. Remember 10 + 5 = 15.

Challenge your carer to complete this puzzle.
Did they find the same solution as you?

> 5.2 Subtraction

Exercise 5.2

| column subtraction | operation |

Focus

Worked example 3

$27 - 5 = \boxed{}$

The tens have not changed.
$27 - 5 = 22$

$7 - 5 = 2$

10s	1s
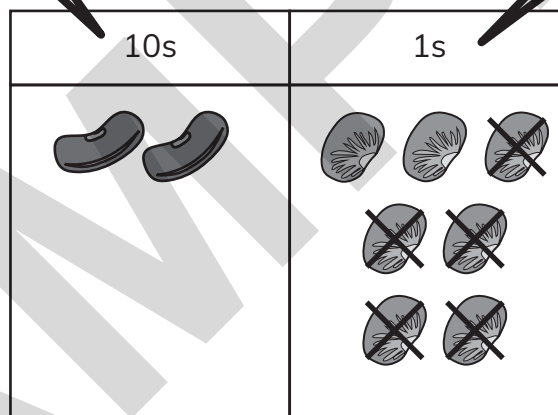
Jump back 5 on the number line. $27 - 5 = 22$
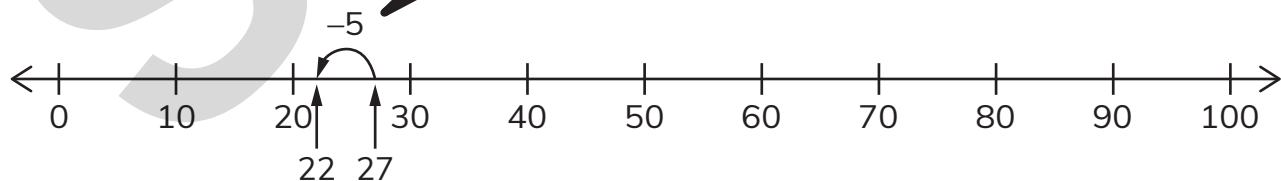
−5

← 0   10   20   30   40   50   60   70   80   90   100 →

22 27

Answer: $27 - 5 = 22$

1   Find the missing numbers. You can use the number line to help you.

←| | | | | | | | | |→
0 10 20 30 40 50 60 70 80 90 100
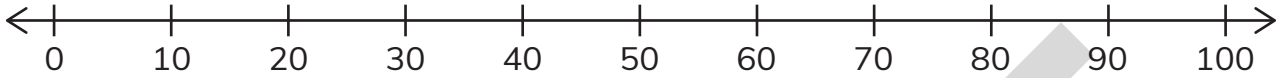
a $39 - 8 =$ ☐

b $48 - 5 =$ ☐

c $77 - 5 =$ ☐

d $59 - 7 =$ ☐

2   Find the missing numbers. You can use the number line to help you.

←| | | | | | | | | |→
0 10 20 30 40 50 60 70 80 90 100

a $24 - 10 =$ ☐

b $41 - 10 =$ ☐

c $52 - 20 =$ ☐

d $38 - 20 =$ ☐

3   Choose the correct operation (add or subtract) to solve each word problem. Write and solve your number sentence.

a   A farmer has 6 ducks and 22 ducklings.

How many ducks and ducklings does she have altogether?

_____ ☐

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5 Working with numbers to 100

b There are 37 elephants in a herd. 5 of them are calves.

How many adult elephants are there?

_____ ☐
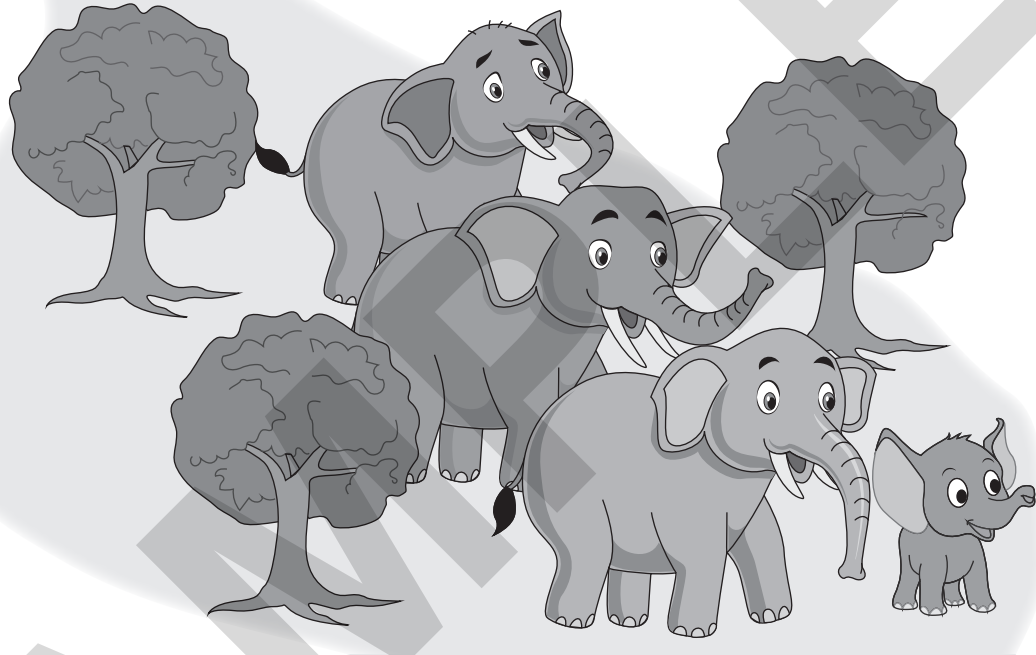
4 Which calculation does not have the same answer as the others?

Draw a ring around that calculation.

27 – 3   14 + 10   34 – 10   29 – 4

Check your solution with another person. Do you both agree?

Practice

5 Find the missing numbers.

a $57 - 4 = \boxed{}$ **b** $88 - 3 = \boxed{}$ **c** $69 - 5 = \boxed{}$

d 48
   $-\ 5$

e 89
   $-\ 8$

f 77
   $-\ 7$
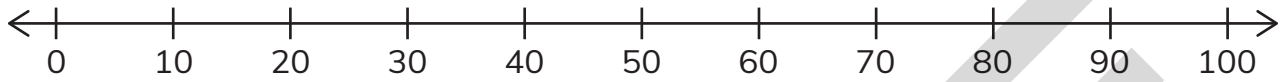
6 Find the missing numbers.

a $57 - 10 = \boxed{}$ **b** $94 - 20 = \boxed{}$ **c** $66 - 30 = \boxed{}$

d 78
   $-\ 10$

e 89
   $-\ 30$

f 45
   $-\ 20$

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5 Working with numbers to 100

7 Choose the correct operation (add or subtract) to solve each word problem.

Write and solve your number sentence.

a There are 42 zebras in a herd. 20 of them are foals.

How many adult zebras are there?

_____
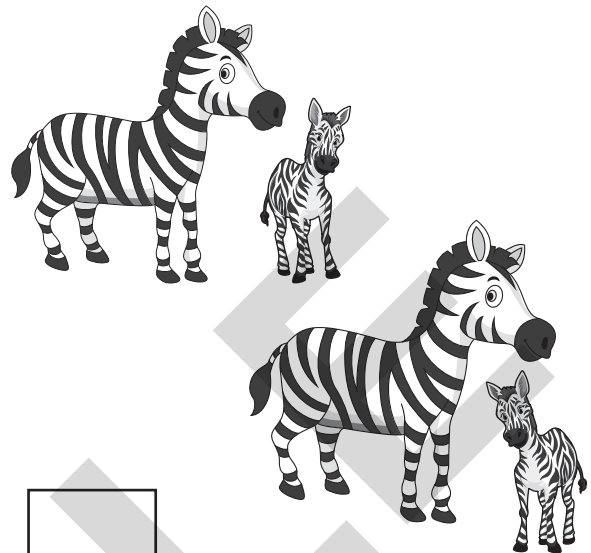
b There are 35 small balls and 30 large balls in the cupboard.

How many balls are there altogether?

_____

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5.2 Subtraction

8 Tick any correct calculations. Correct any mistakes.

45 − 20	52 + 40	32 + 5	99 − 8

$$\begin{array}{r} 45 \\ -\ 2 \\ \hline 43 \end{array}$$

$$\begin{array}{r} 52 \\ -\ 40 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 32 \\ +\ 5 \\ \hline 37 \end{array}$$

$$\begin{array}{r} 99 \\ -\ 80 \\ \hline 19 \end{array}$$

9 Sofia is thinking of a number.

When she adds 7 to her number, she gets 59.

What is Sofia's number?

> **Tip**
>
> Mark 59 on a number line and think about what Sofia does to get to 59.

add 7 . . .

Talk to another learner or your carer about how you found Sofia's number.
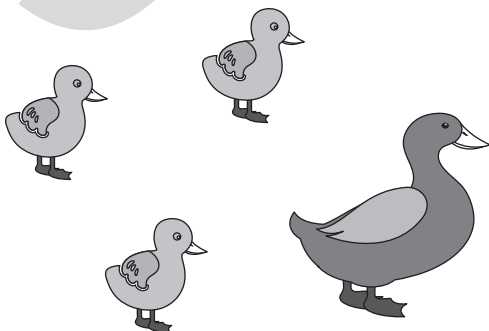
Challenge

10 Choose the correct operation (add or subtract) to solve each word problem. Write and solve your number sentence.

a There are 68 strawberries growing in the garden.

Arun eats 5 strawberries.

How many strawberries are left?

_____

b Zara collects 32 shells and 30 stones.

How many shells and stones does she collect altogether?

_____

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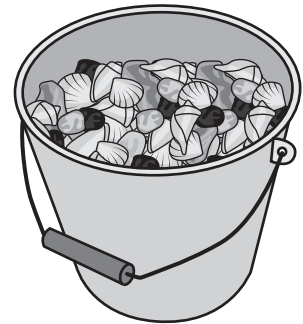
5.2 Subtraction

11 Write the missing digits.

$$
\begin{array}{r}
6\quad 8 \\
+\ \boxed{}\quad 0 \\
\hline
9\quad 8
\end{array}
$$

$$
\begin{array}{r}
\boxed{}\quad 3 \\
-\ \boxed{}\quad \\
\hline
8\quad 0
\end{array}
$$

$$
\begin{array}{r}
7\quad \boxed{} \\
-\ \quad 7 \\
\hline
\boxed{}\quad 2
\end{array}
$$

$$
\begin{array}{r}
6\quad 6 \\
-\ \boxed{}\quad 0 \\
\hline
\boxed{}\quad
\end{array}
$$

Talk to another learner or your carer about how you found the digits.

12 I am thinking of a number.

When I add 6 and subtract 30, I get 17.

What is my number?

Tip

Mark the numbers and jumps on a number line to help you.

$\boxed{}$

› 5.3 Multiplication

Exercise 5.3

Focus

> array   equal groups   multiply, times
> multiplication table, times table
> repeated addition

Worked example 4

How many shoes?

1 pair 1 pair 1 pair

1 pair 1 pair
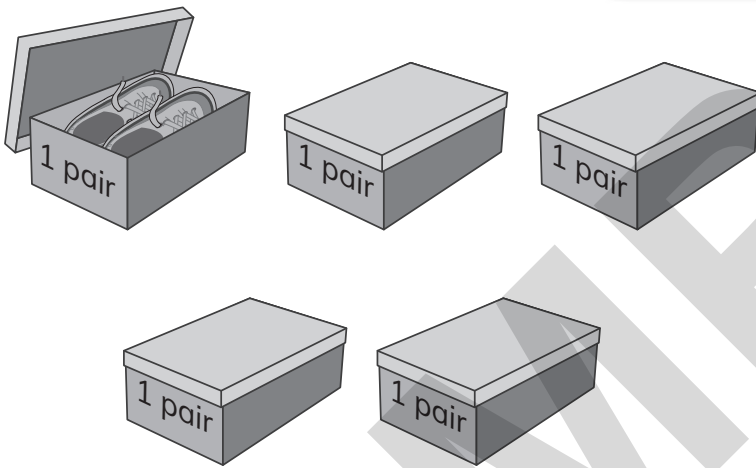
$2 + 2 + 2 + 2 + 2 = 10$

$2 × 5 = 10$

Answer: 10 shoes.

1 How many legs? Write the number sentence you used to find the total.
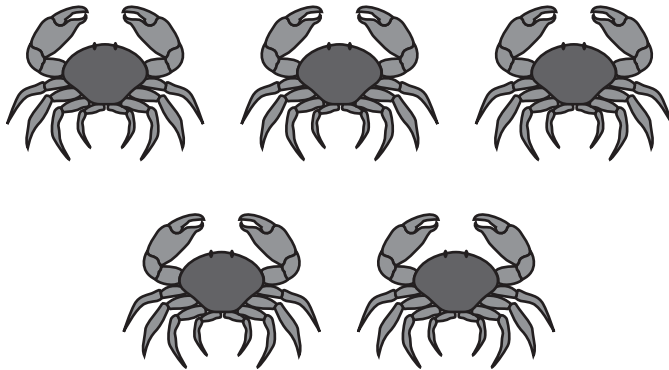
Tip

Claws are legs too!

_____

2 How many toes on 4 feet? Write the number sentence you used to find the total.

_____

3 Write the repeated addition and multiplication number sentences for this number line.

+2 +2 +2 +2

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

_____

_____

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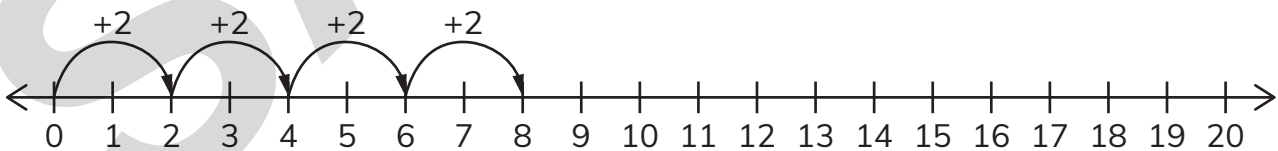
5 **Working with numbers to 100**

4   Write a multiplication sentence for each array.

_____

_____
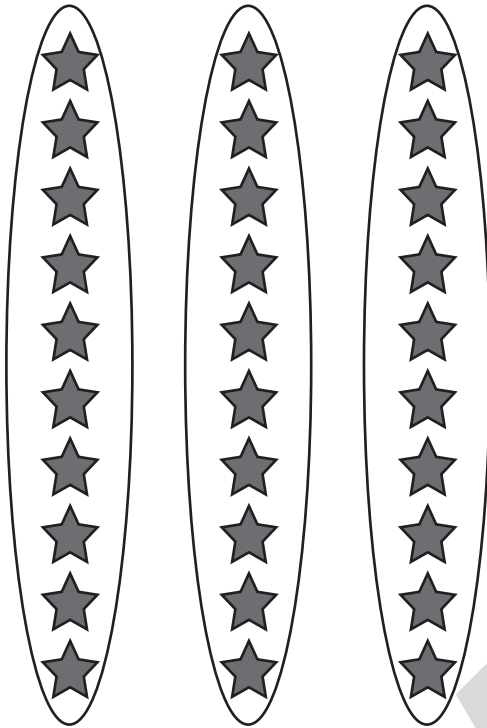
5   Draw an array to show that $5 \times 4 = 20$.

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5.3 Multiplication

6   Write the multiplication table for 2, to 2 × 10 = 20.

☐ × ☐ = ☐   ☐ × ☐ = ☐

☐ × ☐ = ☐   ☐ × ☐ = ☐

☐ × ☐ = ☐   ☐ × ☐ = ☐

☐ × ☐ = ☐   ☐ × ☐ = ☐

☐ × ☐ = ☐   ☐ × ☐ = ☐

Practice

7   Write the repeated addition and multiplication
    number sentences for this number line.
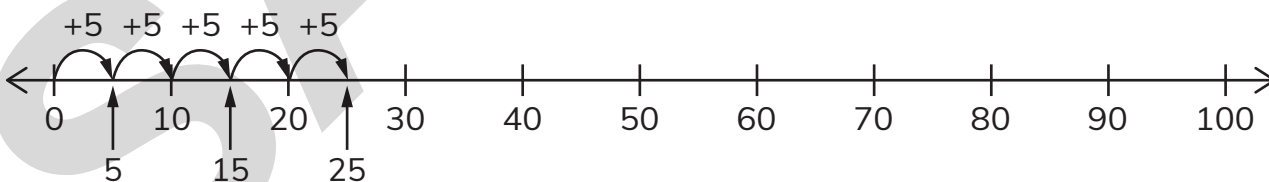
+5 +5 +5 +5 +5

0   5   10 15 20 25 30   40   50   60   70   80   90   100

_____

_____

8 Write the missing number sentences.

Repeated addition	Multiplication
	$10 \times 1 = 10$
$10 + 10 + 10 = 30$	
	$5 \times 8 = 40$
$5 + 5 + 5 + 5 + 5 + 5 = 30$	
	$2 \times 6 = 12$
$2 + 2 = 4$	

9 Draw an array for each multiplication.

$2 \times 9 = 18$ $5 \times 6 = 30$

10 Write the missing sentences.

Double	Addition	Multiplication
	10 + 10 = 20	
double 1 is 2		
		2 × 2 = 4

11 Use the counting stick to help you find the correct answers.

What is the 3rd number you say
when counting in twos from 0?

What is the first number you say
when counting in fives from 0?

What is the 4th number you say
when counting in tens from 0?

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5 Working with numbers to 100

Challenge

12 Complete this multiplication grid.

×	1	2	5	10
1				
2		4		
5			25	
10				

13 Use the counting stick to help you find the correct answers.

What is the 9th number you say
when counting in fives from 0?

What is the 6th number you say
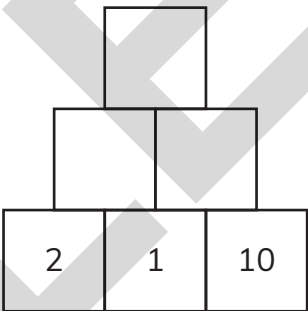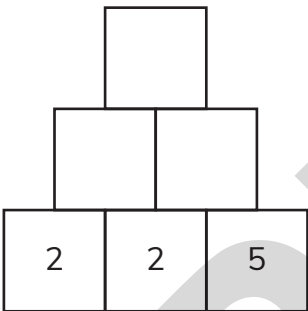when counting in tens from 0?

What is the 9th number you say
when counting in twos from 0?

14 Complete the multiplication pyramids.

Tip

Multiply numbers next to each other to find the number above.

5	1	2

2	2	5

2	1	10
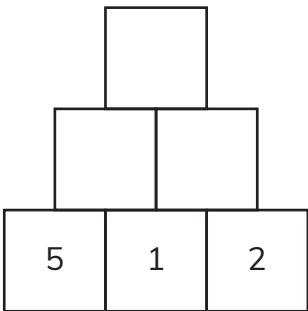
Discuss with your partner or carer how you completed each pyramid.

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5 Working with numbers to 100

› 5.4 Division

Exercise 5.4

Focus

division, divide   division as grouping

division as sharing   repeated subtraction

Worked example 5

$30 \div 5 = \boxed{}$

−5 −5 −5 −5 −5 −5

0   10   20   30   40   50   60   70   80   90   100

5   15   25

Start at 30 and keep taking away groups of 5 until you reach 0.

There are 6 groups of 5.
$30 \div 5 = 6$

Answer: $30 \div 5 = 6.$

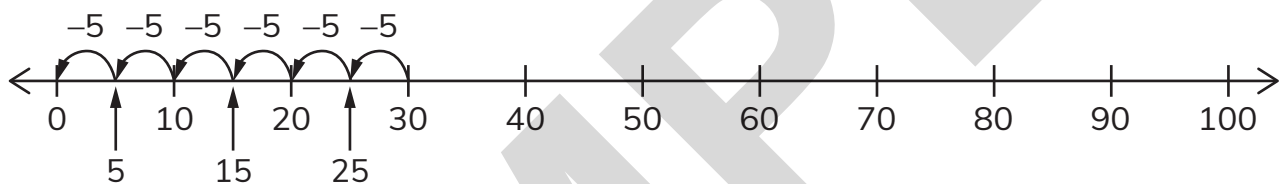We are working with Cambridge Assessment International Education towards endorsement of this title.

5.4 Division

1   Use repeated subtraction on the number line to help
    you solve each division.

a $20 \div 5 = \boxed{}$

←|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|→
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

b $8 \div 2 = \boxed{}$

←|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|→
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
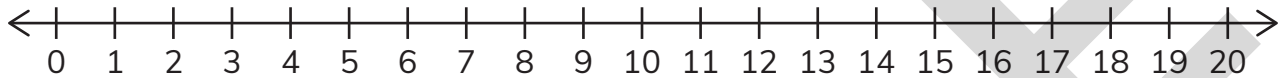
Worked example 6

$30 \div 5 = \boxed{}$
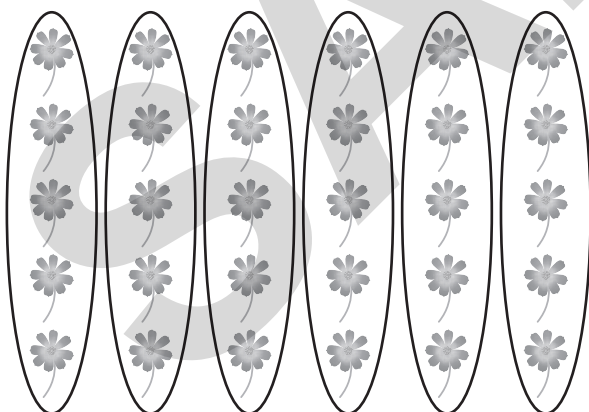
Each column has 5 flowers.

There are 6 columns, so $30 \div 5 = 6$.

Answer: $30 \div 5 = 6$.

2   Use the array to help you solve each division.

a   20 ÷ 10 = ☐

b   20 ÷ 2 = ☐
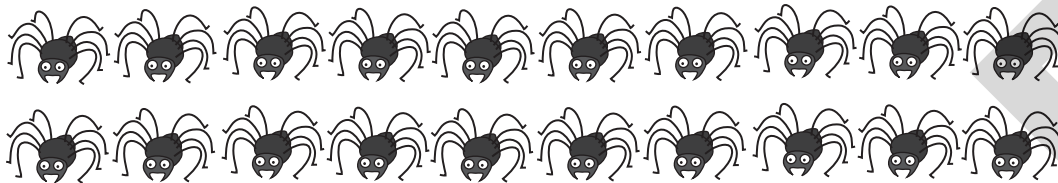
3   Write a division number sentence for this array.
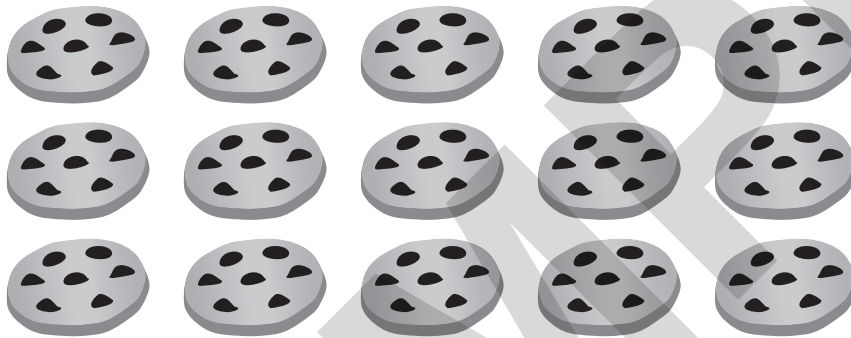
4   Share 20 marbles between 5 children.

20 ÷ 5 = ☐

We are working with Cambridge Assessment International Education towards endorsement of this title.
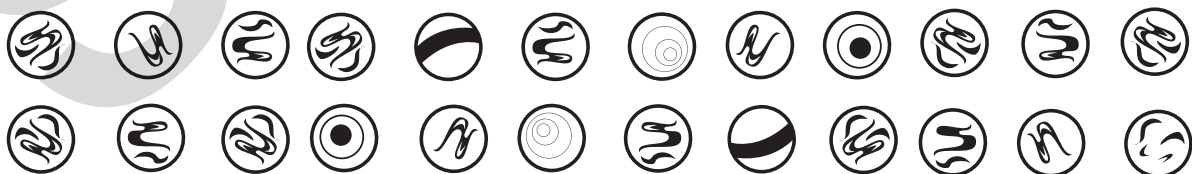
5.4 Division

Practice

5   Use repeated subtraction on the number line to help
    you solve each division.

a   50 ÷ 5 = [ ]

```
←─┼────┼────┼────┼────┼────┼────┼────┼────┼────┼─→
  0   10   20   30   40   50   60   70   80   90  100
```

b   90 ÷ 10 = [ ]
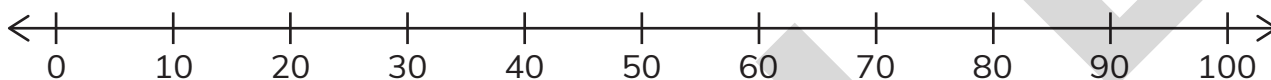
```
←─┼────┼────┼────┼────┼────┼────┼────┼────┼────┼─→
  0   10   20   30   40   50   60   70   80   90  100
```
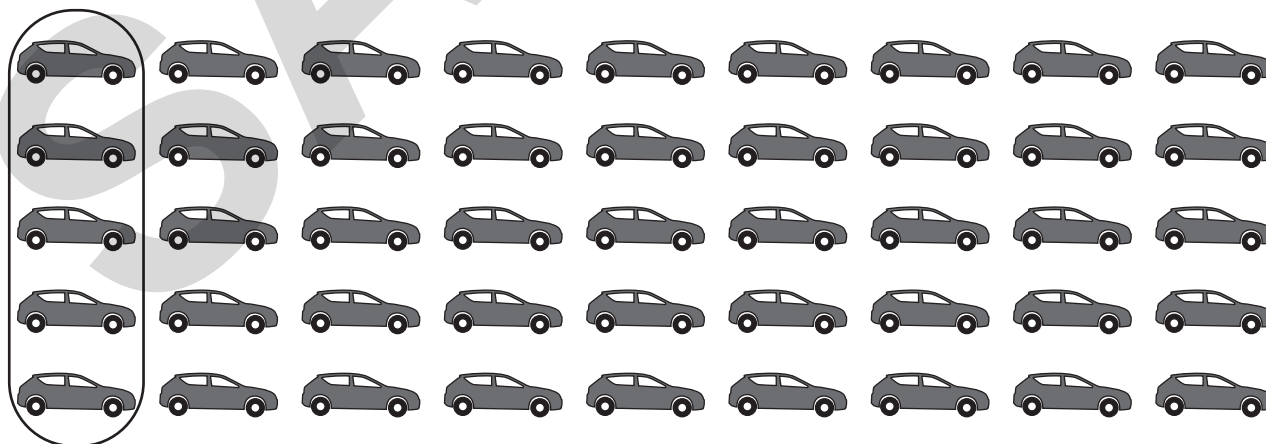
6   Draw a ring around the correct number
    sentence for this array.

> **Tip**
>
> How many cars are
> in the ringed group?

45 ÷ 9 = 9   45 ÷ 5 = 9   45 ÷ 5 = 5

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5 Working with numbers to 100

7 Choose a method to use and find the answers.

a   12 ÷ 2 = ☐   b   40 ÷ 5 = ☐   c   70 ÷ 10 = ☐

☐

```
←+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+→
  0  1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16 17 18 19 20
```

```
←+----+----+----+----+----+----+----+----+----+----+→
  0    10   20   30   40   50   60   70   80   90   100
```
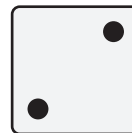
8 Write and solve the number sentences.
   Do you need to multiply or divide?

a   Marcus rolls a dice 3 times.

    He gets a 2 each time.

    What is his total score?

_____
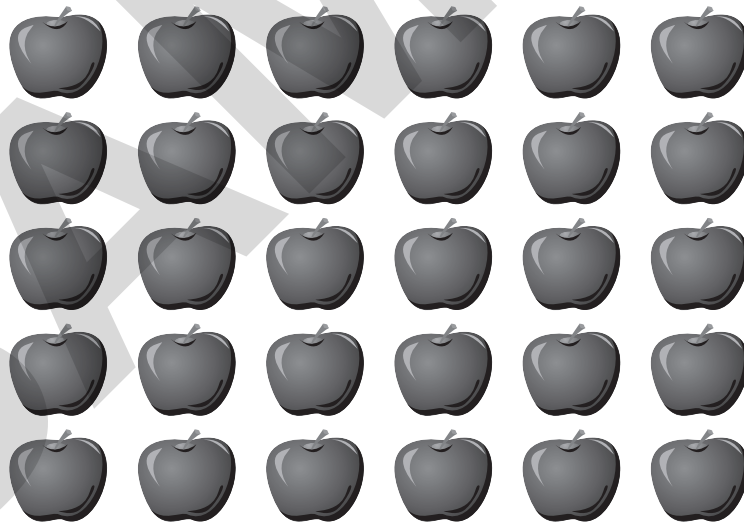
b   18 children want to play football.

They choose 2 teams.

How many children on each team?

Challenge

9   Draw a ring around the two correct number sentences
for this array.

$30 \div 6 = 6$ $30 \div 5 = 6$ $30 \div 5 = 5$ $30 \div 6 = 5$

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5 Working with numbers to 100
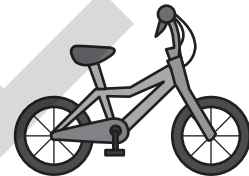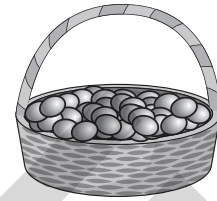
10 Write and solve the number sentences.

Do you need to multiply or divide?

a Egg cartons hold 10 eggs.

There are 100 eggs in a basket.

How many cartons do I need?

☐

b How many wheels on 9 bicycles?

☐

11 Write a problem for this division number sentence.
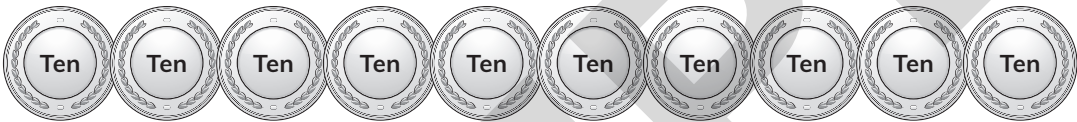
$60 \div 10 = 6$

6 ▸ Money

› 6.1 Money

Exercise 6.1

currency   dollar, cent   euro, euro cent
pound sterling, pence   price
unit of money   value   worth   yen

Focus

1   Count in tens. What is the total value of these coins?

_____

(Ten) (Ten) (Ten) (Ten) (Ten) (Ten) (Ten) (Ten) (Ten) (Ten)

2   Marcus uses a Carroll diagram to sort US$ banknotes and coins. Which coins or banknotes are missing from each section?

Even value	Not even value
TWENTY DOLLARS $20 banknote HALF DOLLAR coin FIFTY DOLLARS $50 banknote TWO DOLLAR $2 banknote	ONE DOLLAR $1 banknote QUARTER DOLLAR coin ONE DIME coin ONE CENT coin $1 coin

Worked example 1

Arun spends 30c on some candy. Which coins could he pay with?

Answer:

I could use two coins

or three coins.

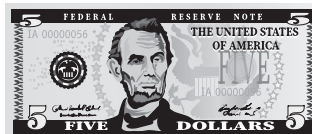You can make the same value in lots of different ways!

3 Sofia spends 25c on some candy.

Show one way she could pay using coins.
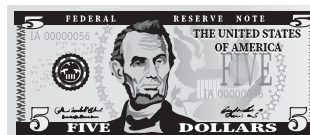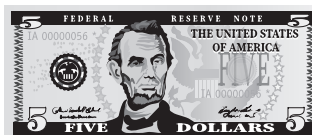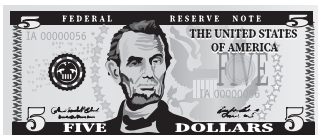
Find another way to pay.

Worked example 2

Sofia spends US$15 on a T-shirt. Which banknotes could Sofia pay with?

Answer:

1 US$10 and 1 US$5 banknotes

3 US$5 banknotes

You can make the same value in lots of different ways!

4   Zara spends US$30 on some books.
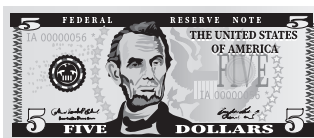
Show one way she could pay using banknotes.

Find another way to pay.

Worked example 3

Arun spends US$6 and 70c in the supermarket.

Which banknotes and coins could he pay with?

Answer:

US$5, US$1, a half dollar and 2 dimes

3 US$2 and 7 dimes

You can make the same value in lots of different ways!

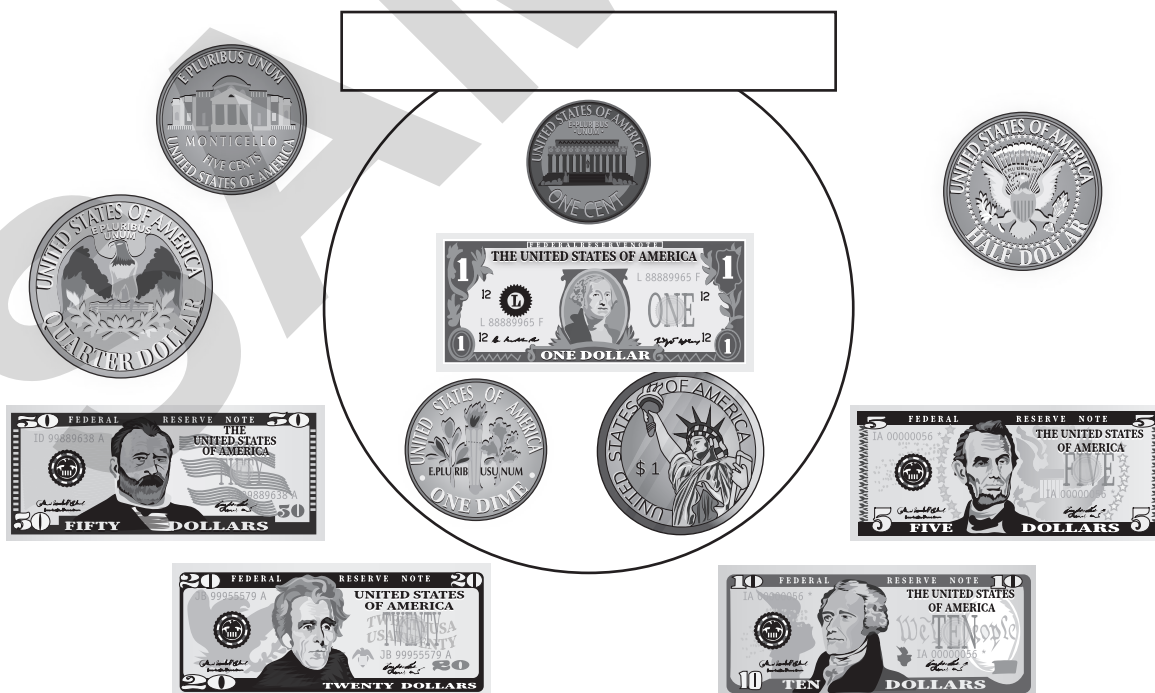**6 Money**

5 Arun spends US$5 and 45c in the supermarket.

Show one way he could pay using banknotes and coins.

Practice

6 Count in fives. What is the total value of these coins?

7 Sofia sorts US currency. How should she label her circle?

Worked example 4

Zara's mum spends US$57 and 90c in the supermarket.

Which banknotes and coins could she pay with?

Answer:

US$50, US$5, US$2, 3 quarter dollars, a dime and a nickel

5 US$10, US$5, US$2, a half dollar, a quarter dollar and 3 nickels

You can make the same value in lots of different ways!

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6 **Money**

8 Marcus' dad spends US$62 and 15c in the supermarket.

Which banknotes and coins could he pay with?

Find another way to pay.

Challenge

9 Arun matches a US$1 banknote and 1c coin because they both have 'one' on them. Which other matches could Arun make with US currency?

10 Sofia has 5 silver coins.

Marcus has 3 silver coins.

They both have the same amount of money.

Which coins could they each have? Use US dollars and cents or your own currency.

Find another solution.

Discuss your answers with a partner or carer.
Have you found all the possible answers?

11 Complete the table of currency symbols.

There are two empty rows in the table for you to complete
if you know any more currencies.

Country or region	Lower value unit	Higher value unit
Your country		
USA		
		€
Japan	none	
	p	£

7 ▶ Time

❯ 7.1 Units of time and the calendar

Exercise 7.1

calendar   date   second
units of time   weekend   year

Focus

1   Name 3 things that take about an hour.

_____

_____

_____

Worked example 1

Put these units of time in order from shortest to longest.

hour   month   minute   week

A minute is a lot shorter than an hour.

A month is about 4 weeks, so a month is longer than a week. A week is a lot longer than an hour.

Answer: The order must be:

minute   hour   week   month

---

116 ❯

2   Put these units of time in order from the shortest
to the longest.

year   month   minute   second   hour

_____   _____   _____   _____   _____

3   How many days in a week? _____

How many months in a year? _____

4   Write the ordinal number for each of the days.

June

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

The first Thursday in June is the _____ .

The last Wednesday in June is the _____ .

The third Tuesday in June is the _____ .

The first Sunday in June is the _____ .

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7 Time

Worked example 2

Look at the calendar in question 5. Write this date in words: 22/11/21.

The 11th month is November. 22 is in the column with M for Monday at the top. The 22nd November is a Monday.

22/11/21 is Monday 22nd November, 2021.

5 Write these dates in words.

2021

November

M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

a 12/11/21

_____

Tip

Remember to write the day of the week for each date.

b 05/12/21

_____

c 30/11/21

_____

6 Write these dates in numbers only.

    a Monday 13th July 2020 _____

    b Saturday 11th September 2021 _____

    c Wednesday 23rd February 2022 _____

7 Write today's date in numbers.

_____

Write yesterday's date and tomorrow's date in words.

_____

_____

Practice

8 Name:

- something that takes about a minute
- something that takes about a second
- something that takes about an hour.

Write them in order, from shortest to longest.

_____

_____

_____

9 Write the ordinal number for each of these days.

January

M	T	W	T	F	S	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

a   The first Saturday in January is the _____ .

b   The last Monday in January is the _____ .

c   The third Friday in January is the _____ .

d   The fifth Sunday in January is the _____ .

10 Write each of the ringed dates from 2022 in words and in numbers.

May

M	T	W	T	F	S	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	(14)	15
16	(17)	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

June

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	(9)	10	11	12
13	14	15	16	17	18	19
20	21	(22)	23	24	25	26
27	28	29	30			

_____

_____

_____

_____

11 Write the missing months.

a The month after June is _____ .

b The month before October is _____ .

c Two months before April is _____ .

d Three months after August is _____ .

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7 Time

Challenge

12 Put these units of time in order from **longest** to **shortest**.

second weekend minute week year month hour day

_____

13 In which month or months of 2022 will you find:

Thursday 8th? _____

Monday 30th? _____

Friday 12th? _____

2022

January

M	T	W	T	F	S	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February

M	T	W	T	F	S	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

March

M	T	W	T	F	S	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

April

M	T	W	T	F	S	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

May

M	T	W	T	F	S	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

June

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

July

M	T	W	T	F	S	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

August

M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

September

M	T	W	T	F	S	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

October

M	T	W	T	F	S	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

November

M	T	W	T	F	S	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

December

M	T	W	T	F	S	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

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7.1 Units of time and the calendar

Write the date in words for the day after 31/12/22.

_____

Write the date in words for the day before 01/01/22.

_____

Explain to a partner or carer how you found the dates.

14   Today is Friday 15th May.

Zara is going to a party in 2 weeks' time.

What is the date of the party in words?

_____

15   Marcus visits his grandfather on Saturday 24th July.

Marcus visits his grandfather again 3 weeks later.

Write the date of this visit in words.

_____

8 ▸ Numbers to 100 (2)

❯ 8.1 Numbers in words, rounding and regrouping

closest 10   hyphen   nearest 10
regroup   round, rounding

Exercise 8.1

Focus

1   Write each of the numbers represented below in words.

a _____

b _____

c   29 _____

d   47 _____
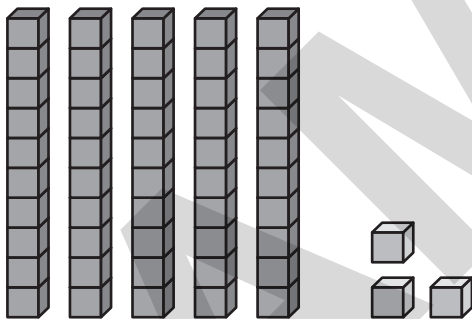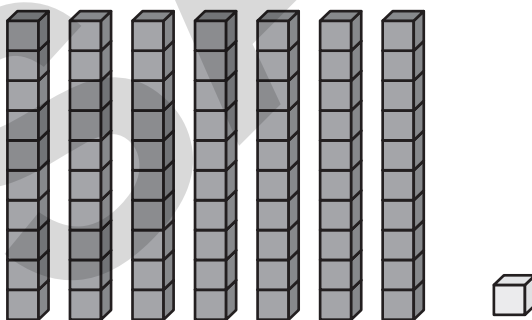
2 Read the number words and write the number.

    a eighty-six _____

    b thirty-four _____

    c forty-seven _____

    d sixty-two _____

3 Represent each number by drawing counters on the place value grid.

    a forty-one

10s	1s

    b thirty-six

10s	1s

4 Round each number to the nearest 10.

    a 51 ▢   **b** 68 ▢   **c** 45 ▢

    d 37 ▢   **e** 25 ▢   **f** 92 ▢

We are working with Cambridge Assessment International Education towards endorsement of this title.

8 Numbers to 100 (2)

5 Find 4 different ways to regroup 24.
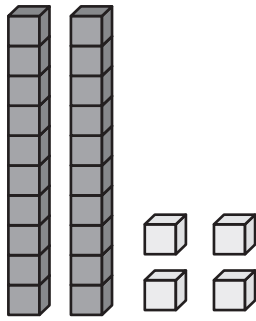
Show another person your ways to group 24.
Do they have any different ways?

Practice

6 Use these number words to write some 2-digit numbers
in words. How many different numbers can you write?

five   fifty   four   ninety   sixty   one

7 A number rounds to 50 when rounded to the nearest 10.
When 1 is added to the number, it now rounds to 60 when
rounded to the nearest 10. What is the number?
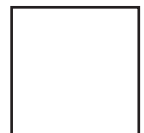
8   Zara rounds 50 to 60 when rounding to the nearest 10.

Zara remembers that 5 always rounds up.

How can you help Zara to understand her mistake?

_____

9   Find 4 different ways to regroup 35 into 3 numbers.
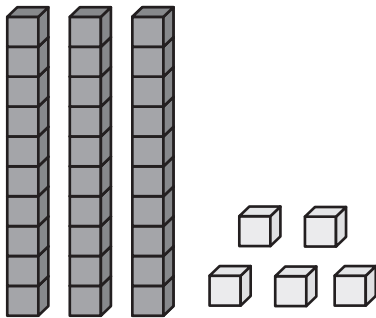
Challenge

10 Write your answers in words.

a   Forty-two add twenty equals _____

b   Seventy-six subtract five equals _____

c   Fifty-one add eight equals _____

d   Ninety-seven subtract fifty equals _____

11 Write each calculation in words.

a
$$\begin{array}{r} 37 \\ + 20 \\ \hline 57 \end{array}$$
_____

_____

b
$$\begin{array}{r} 99 \\ - 7 \\ \hline 92 \end{array}$$
_____

_____

12 Round each length to the nearest 10 centimetres.

58 centimetres _____ centimetres

94 centimetres _____ centimetres

We are working with Cambridge Assessment International Education towards endorsement of this title.
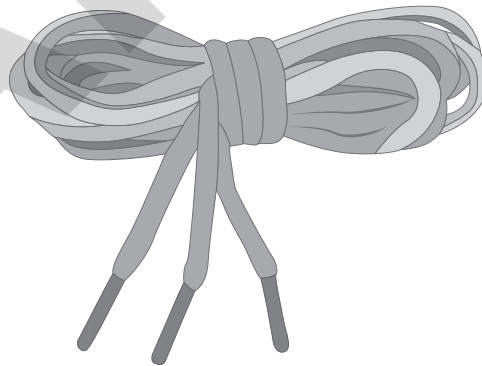
8.1 Numbers in words, rounding and regrouping

13 Round each measurement to the nearest 10 metres.
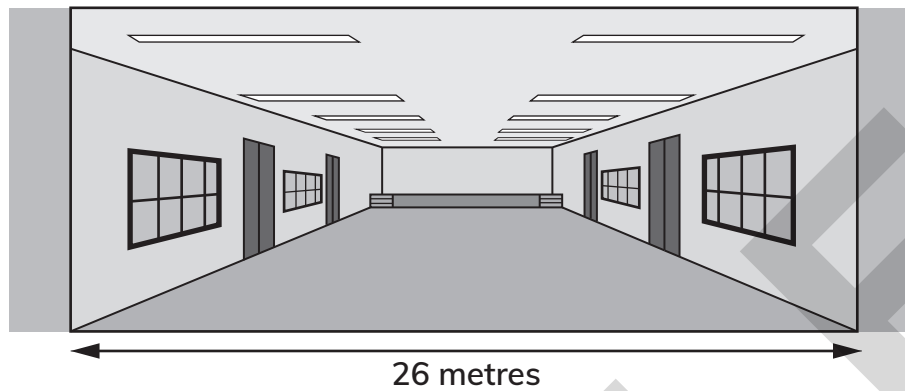
26 metres
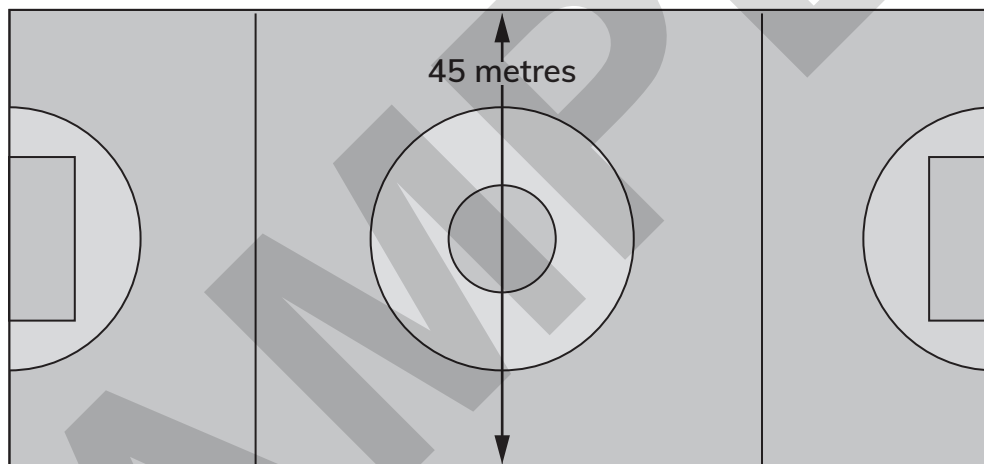
_____ metres

45 metres

_____ metres

14 When 49 is regrouped into 3 numbers, one of the numbers is 23.
What could the other numbers be?

› 8.2 Fractions of numbers

Exercise 8.2

denominator   numerator   visualise

Focus

1   Find the missing numbers.

$\frac{1}{2}$

$\frac{1}{2}$
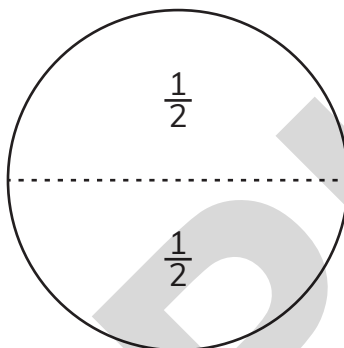
a $\frac{1}{2}$ of 2 =

b $\frac{1}{2}$ of 4 =

c $6 \div 2 =$

d $8 \div 2 =$

e $10 \div 2 =$

f $\frac{1}{2}$ of 14 =

2   Colour half of the shape.

Complete the number sentences.
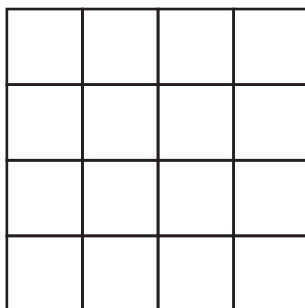
Tip

Count the squares!

a   ⬚ $\div 2 =$ ⬚

b $\frac{1}{2}$ of ⬚ = ⬚

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8.2 Fractions of numbers

3 Find the missing numbers.

$$\frac{1}{4} \quad \frac{1}{4}$$
$$\frac{1}{4} \quad \frac{1}{4}$$
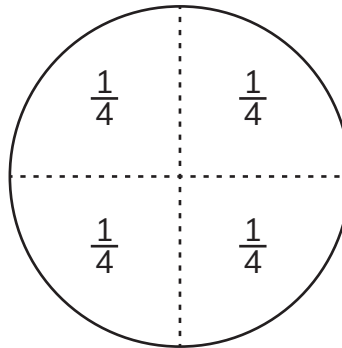
a $\frac{1}{4}$ of 4 = ☐

b $8 \div 4 =$ ☐

c $12 \div 4 =$ ☐

d $20 \div 4 =$ ☐

e $\frac{1}{4}$ of 20 = ☐

f $\frac{1}{4}$ of 8 = ☐

4 Colour a quarter of the shape.

Complete the number sentences.

a ☐ $\div 4 =$ ☐

b $\frac{1}{4}$ of ☐ = ☐

We are working with Cambridge Assessment International Education towards endorsement of this title.
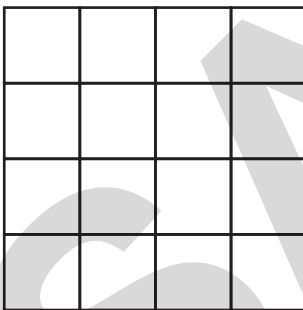
8 **Numbers to 100 (2)**

Practice

5   Sofia and Zara share a pack of 16 beads equally.

What fraction of the beads did they get each?

_____

6   What is the number below the line in a fraction called?

What does it represent?

_____

7   You are given a quarter of a packet of 20 marbles.

Draw your marbles.

8   Half of a number is 1. What is the number?

9   A quarter of a number is 5. What is the number?

10 Dad cuts some apples into quarters for everyone to share.

Sofia eats 2 quarters of green apple and a quarter of red apple.

What fraction of an apple does she eat altogether?

11 Marcus eats 4 quarters of green apple.

What fraction of an apple does he eat altogether?

Challenge

12 Find the missing numbers.

$\frac{1}{2}$ of a number is 6. What is $\frac{1}{4}$ of that number? _____

$\frac{1}{4}$ of a number is 4. What is $\frac{1}{2}$ of that number? _____

13 Tick the calculations that have the same value as $\frac{1}{2}$ of 12.

$\frac{1}{4}$ of 12 $\frac{2}{4}$ of 12 $12 \div 4 = 3$ $12 \div 2 = 6$

14 Arun uses the round beads, Marcus uses the square beads and Zara uses the triangle beads.

What fraction of the beads does Marcus use?

What fraction of the beads does Zara use?

What fraction of the beads do Arun and Zara use altogether?

15 Mum makes sandwiches for the party.
All the whole sandwiches are the same size.
She cuts each sandwich into 4 equal pieces.
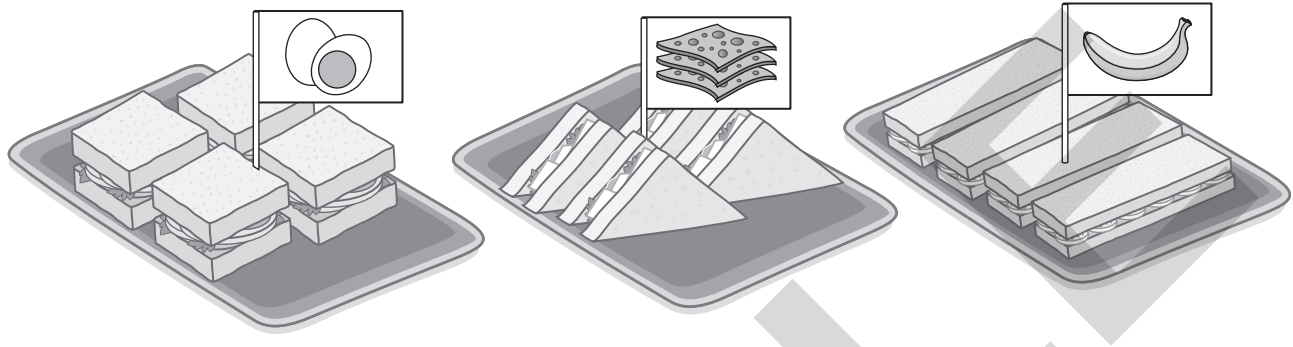
a Arun eats 1 banana sandwich strip and 1 cheese sandwich triangle. What fraction of a whole sandwich does he eat?

b Dad is really hungry. He eats 2 whole sandwiches. How many pieces does he eat? Can he choose any pieces?

16 You have a US$1 banknote.
How can you give your friend a quarter of a dollar?

9 Statistics (2)

> 9.1 Venn diagrams, lists and tables

Exercise 9.1

Focus

Venn diagram

Worked example 1

Here is a picture of seven toys.

Use lines to sort them into the circles using the rules.
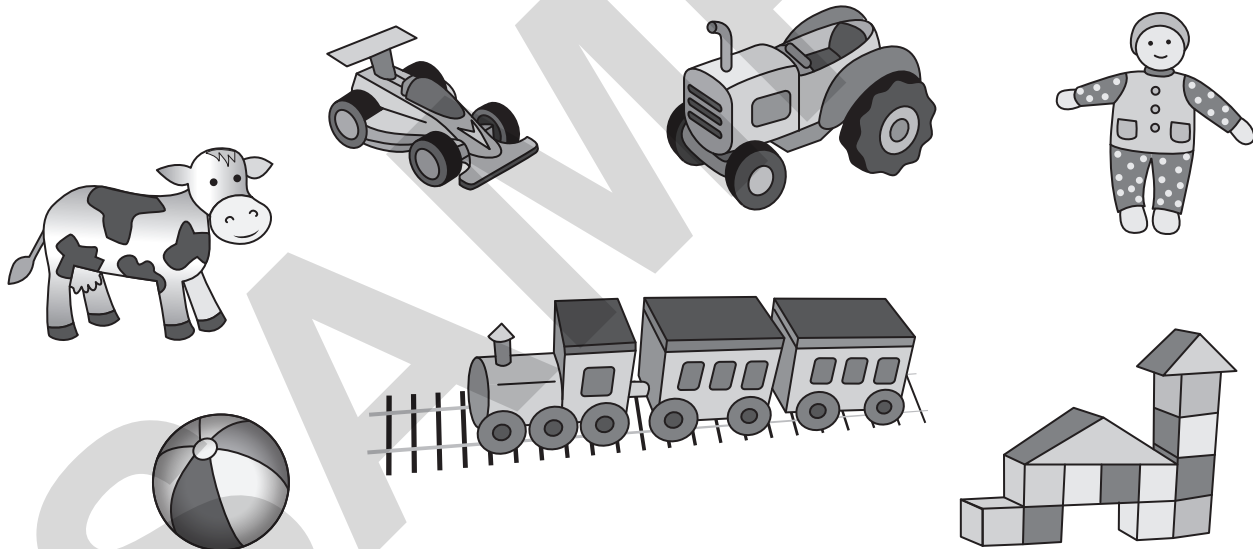
Can roll

Does not have wheels

Continued

Answer:

Can roll

Does not have wheels
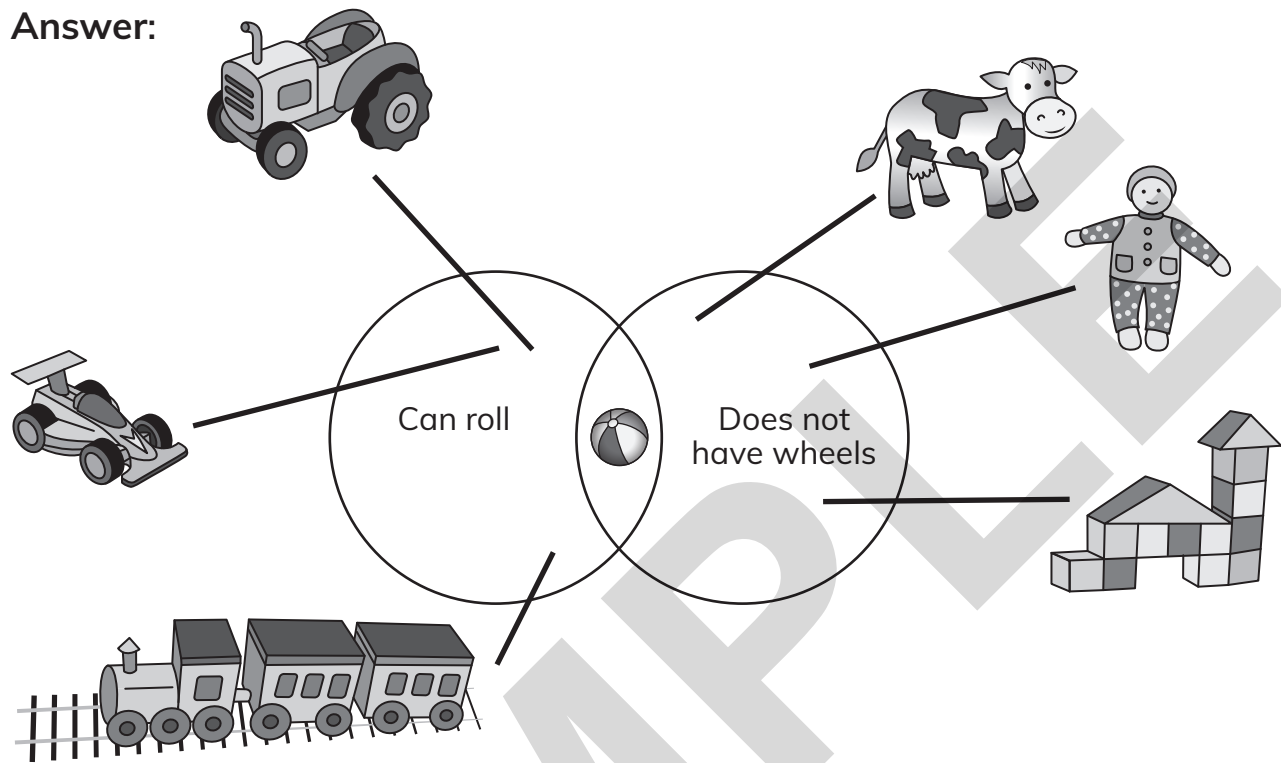
I can see 3 things that can roll using wheels.

I can see 3 things that cannot roll. But there is 1 that can roll but doesn't have wheels. Where does that go?

Let's join the circles together and put part of one circle over the other.

1   Look at these numbers:

25, 9, 13, 62, 78, 21

Write them in the correct place in the Venn diagram.

Odd   More than 20
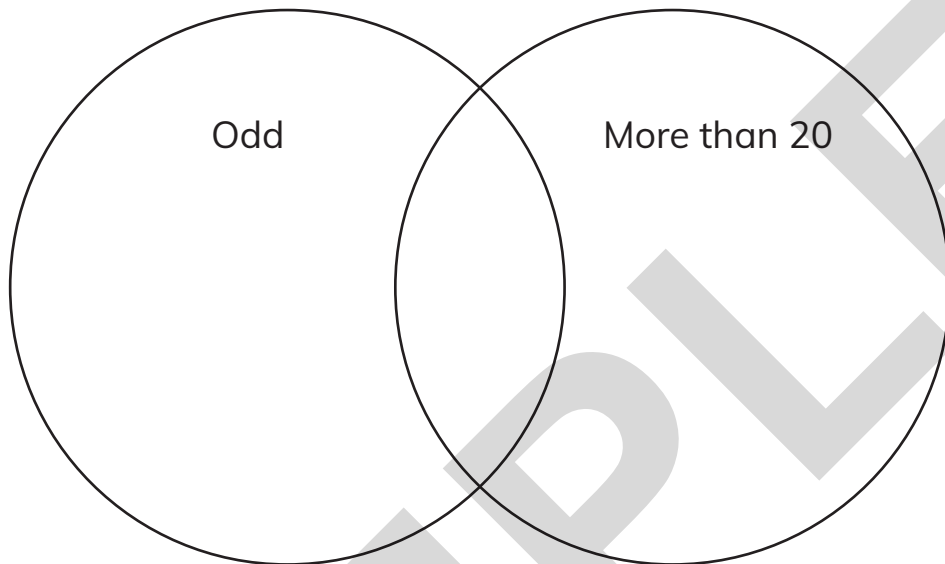
2   Write the labels for the Venn diagram.

We are working with Cambridge Assessment International Education towards endorsement of this title.
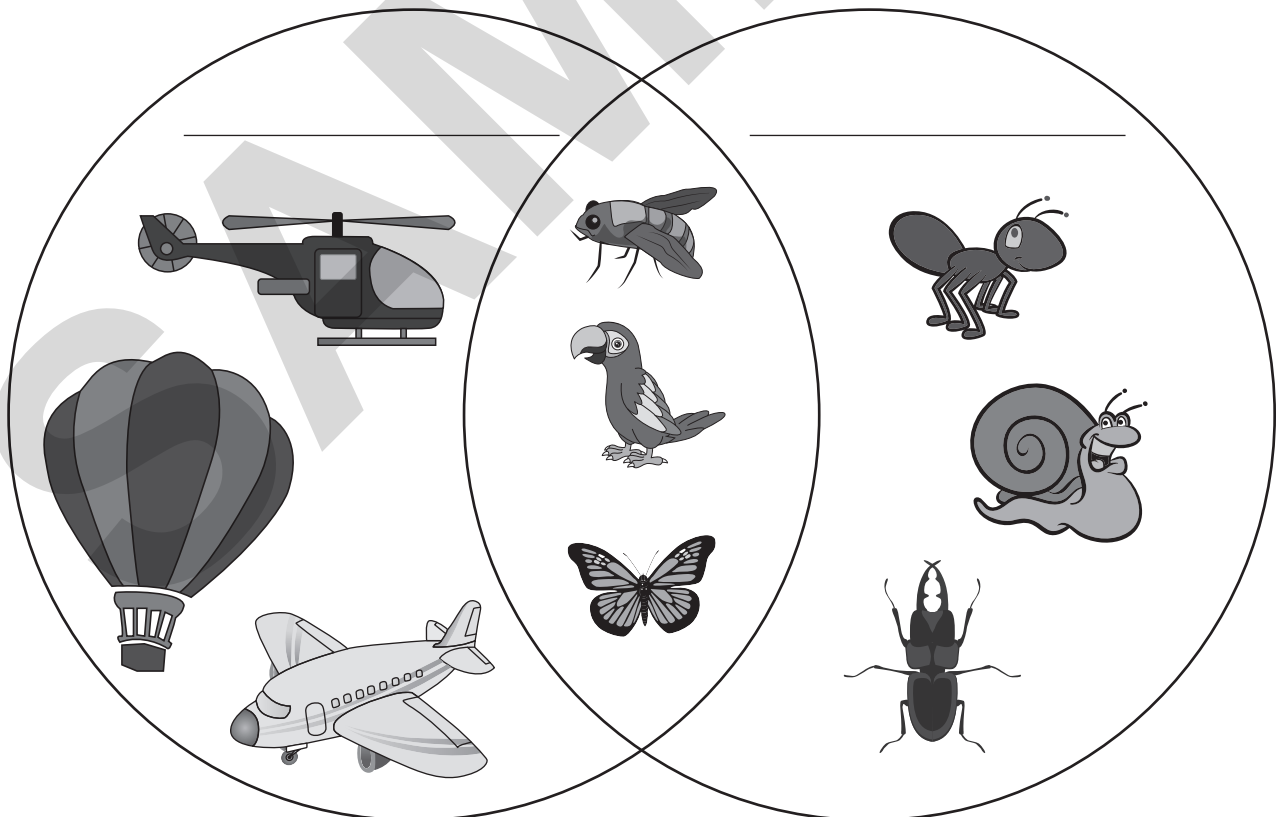
9 **Statistics (2)**

3 Make a list of 6 different foods that you buy in a shop.

Use the list to complete the table.

Vegetables	Not vegetables

How many vegetables are there? ☐

How many are not vegetables? ☐
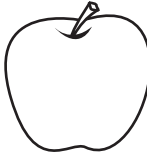
How many are there altogether? ☐

Practice

4   Use this table to complete the Venn diagram.

Draw the fruits and vegetables in the correct section of the Venn diagram.

Red	Green	Red and green	Red	Green	Yellow	Red and green
Red	Orange	Red	Red	Green	Green	Green

Tip

Place outside the diagram any objects that don't fit the diagram categories.

Red   Green

We are working with Cambridge Assessment International Education towards endorsement of this title.
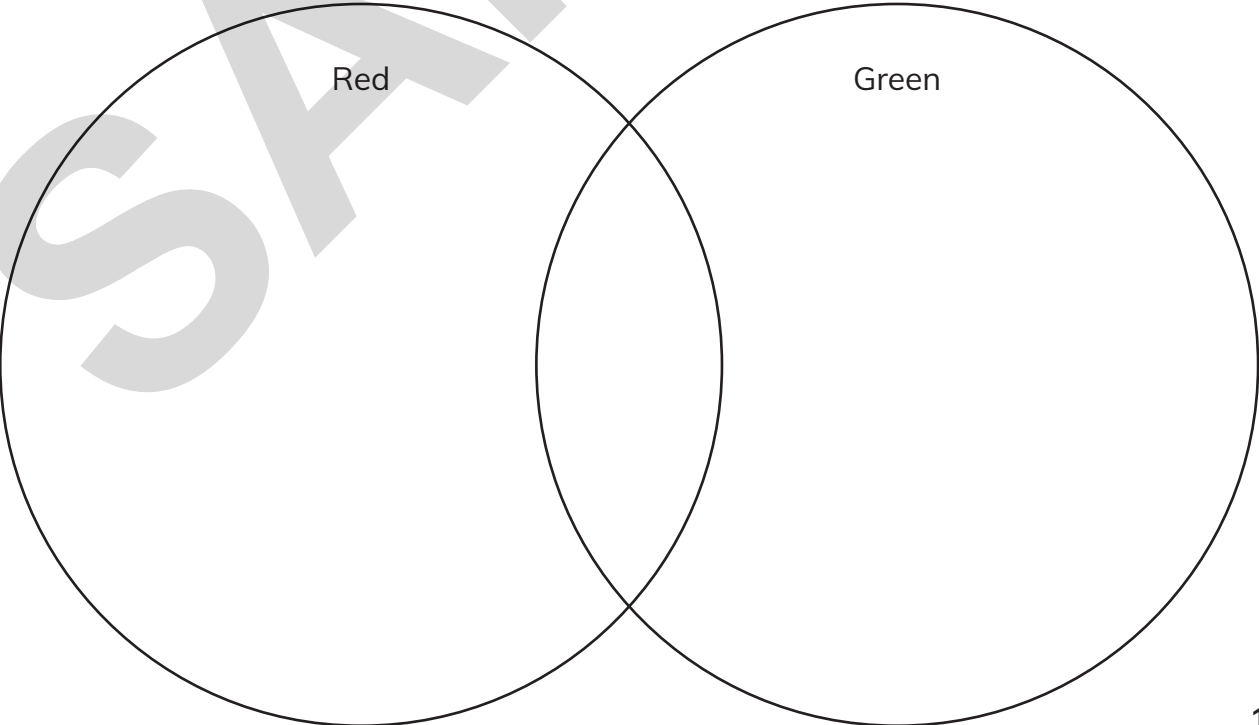
9 Statistics (2)

5 Zara asks boys what they like doing when they are not at school.

Answer the questions using the Venn diagram.

Swimming   Dancing

12   6   5
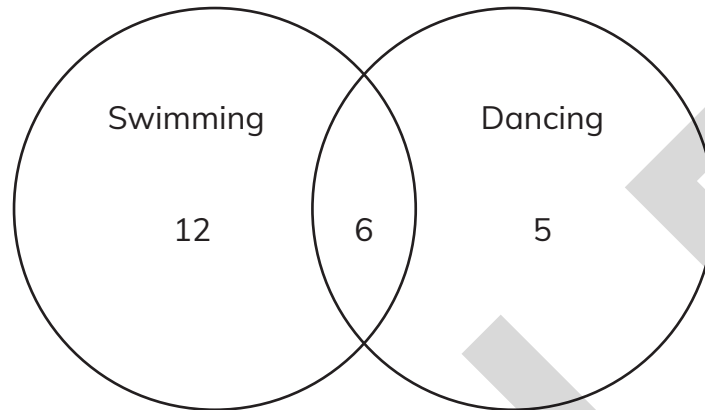
How many boys:

like both swimming and dancing?

do not like dancing?

do not like swimming?

How many boys are there altogether?

6 Arun needs to buy these foods for his dinner.

Milk 4 litres

We are working with Cambridge Assessment International Education towards endorsement of this title.
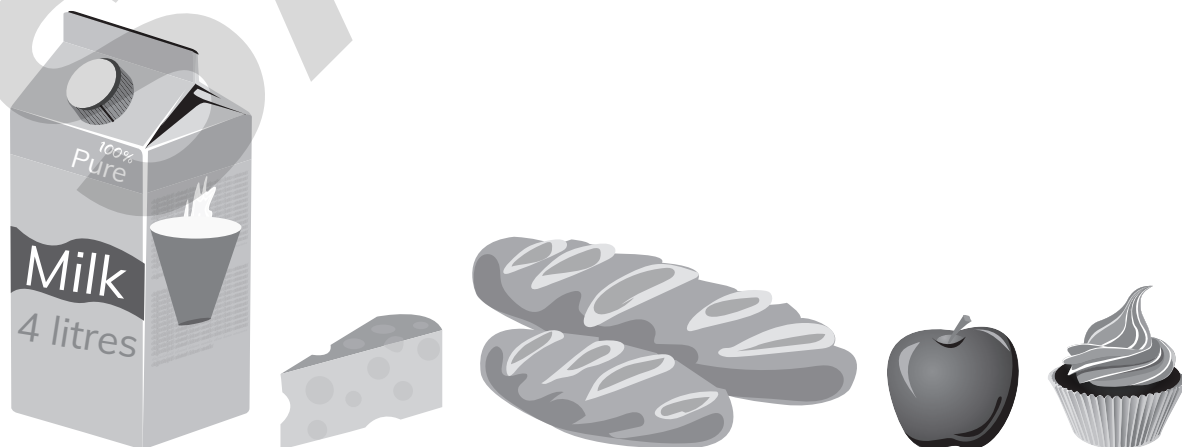
9.1 Venn diagrams, lists and tables

Would you use a list or a table to show this information?

Draw or write your answer.

Challenge

7   The table shows data about the cats in the cat shelter.

Use the table to complete the Venn diagram. Write the cats' names.

	Magic	**Jack**	**Poppy**	**Tilly**	**Scrumpy**	**Monty**
Hair colour	grey	brown	grey	grey	grey	white
Size	large	large	small	small	large	large

Grey   Large
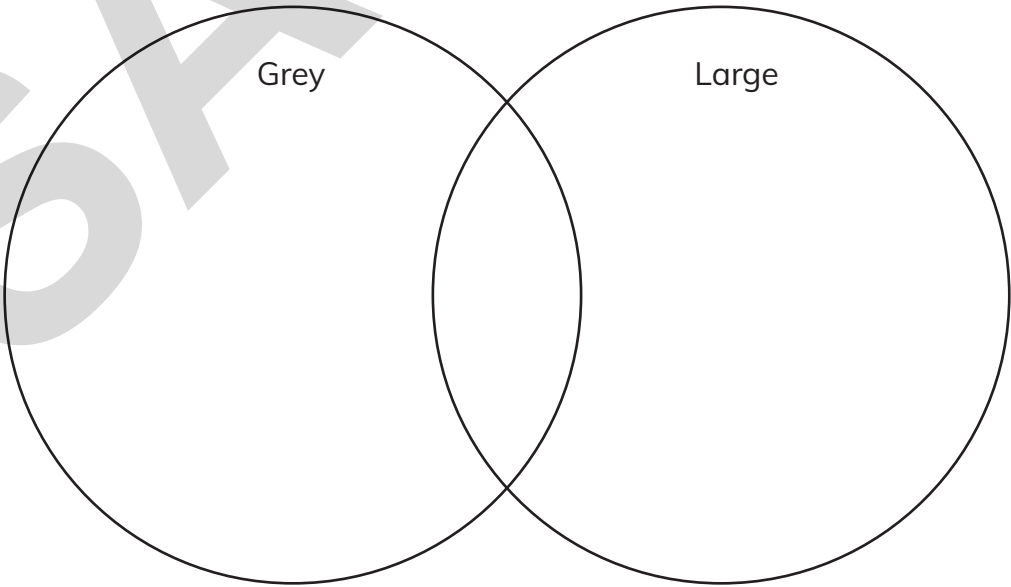
8   Make a list of land-living and water-living animals.

Have up to 12 in your list.

Write them on the Venn diagram.

1 _____   2 _____

3 _____   4 _____

5 _____   6 _____

7 _____   8 _____

9 _____   10 _____

11 _____   12 _____

Land   Water

We are working with Cambridge Assessment International Education towards endorsement of this title.
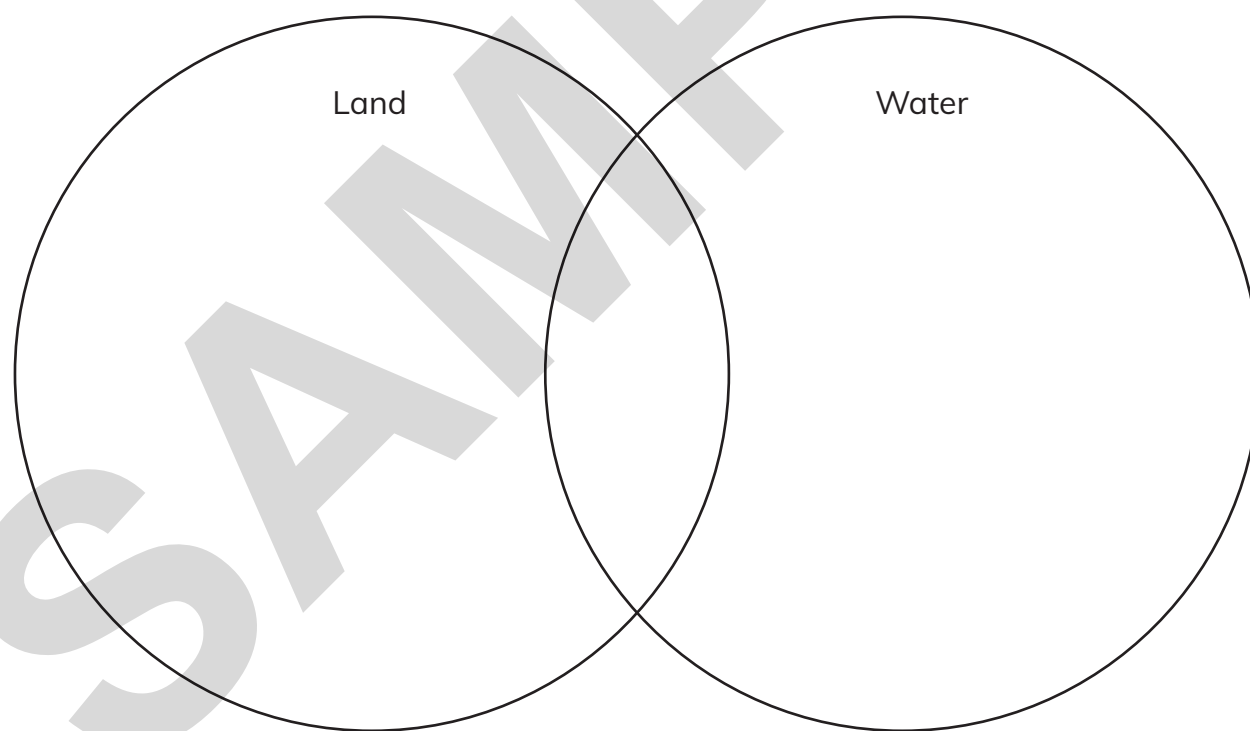
9.1 Venn diagrams, lists and tables

9 Marcus asked 100 parents from his school whether they like milk or sugar in their coffee.

This Venn diagram shows his results.
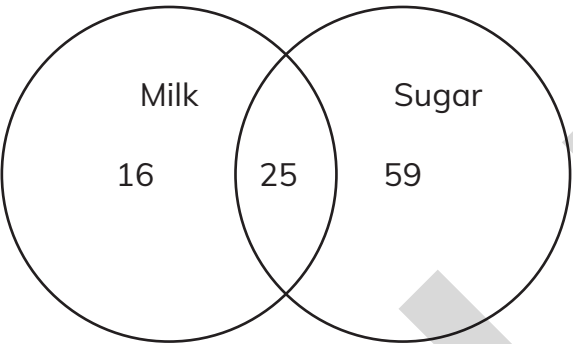
How many like:

Milk ☐

Sugar ☐

Sugar but not milk ☐

Milk but not sugar ☐

Milk and sugar ☐

Milk or sugar ☐

Use the table below to show the same information.

› 9.2 Statistics

Exercise 9.2

Focus

Worked example 2

This pictogram shows the number of pizza slices eaten by a class in the school canteen.

Monday	🍕 🍕 🍕 🍕 🍕 🍕		
Tuesday	🍕 🍕 🍕 🍕		
Wednesday	🍕		
Thursday	🍕 🍕 🍕		

What can you find out using the data in the pictogram?

If I count the slices, I know how many were eaten. I can count 14.

I can find out which day most pizza was eaten. And which day only 1 piece was eaten.

And I can find out how many were eaten on each day.

1   This pictogram shows the number of ice creams eaten on Thursday.

Vanilla	🍦	🍦	🍦	🍦	🍦				
Chocolate	🍦	🍦	🍦	🍦	🍦	🍦			
Strawberry	🍦	🍦	🍦	🍦					
Coffee	🍦								

Which flavour was the most popular? _____

Which flavour was the least popular? _____

How many ice creams were eaten on Thursday? ☐

We are working with Cambridge Assessment International Education towards endorsement of this title.

9 Statistics (2)

2   This block graph shows the goals scored so far this season.
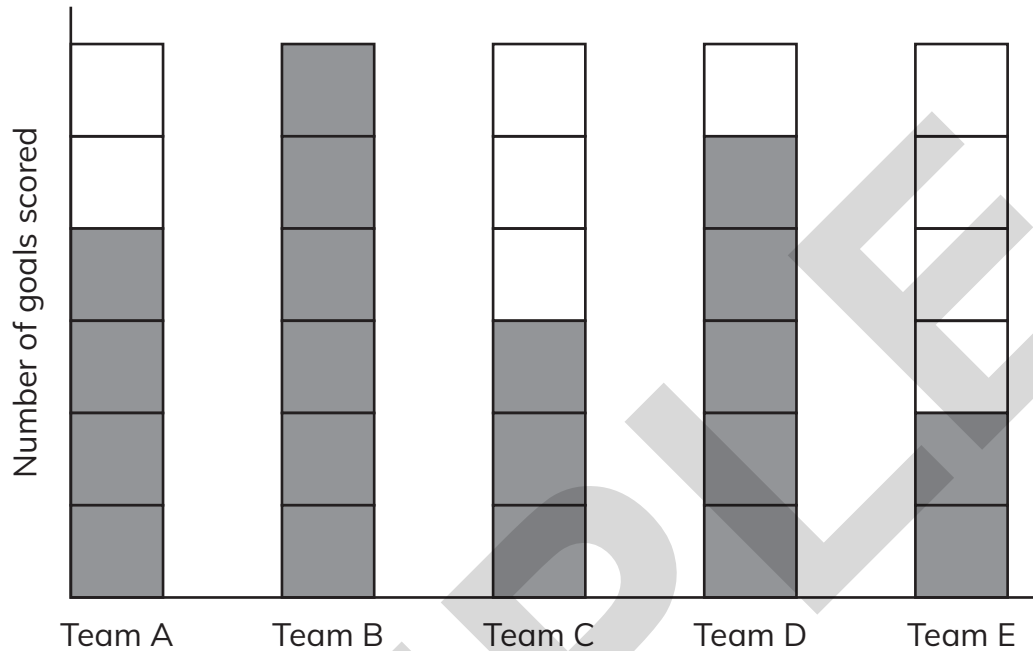
Which team has scored most goals? _____

Which team has scored the least goals? _____

How many more goals have been scored by Team B

than by Team D? ☐

How many fewer goals have been scored by Team E

than by Team A? ☐

Practice

3   This pictogram shows drinks that children in a class like.

Water					
Orange juice					
Milk					
Cola					
Tea					
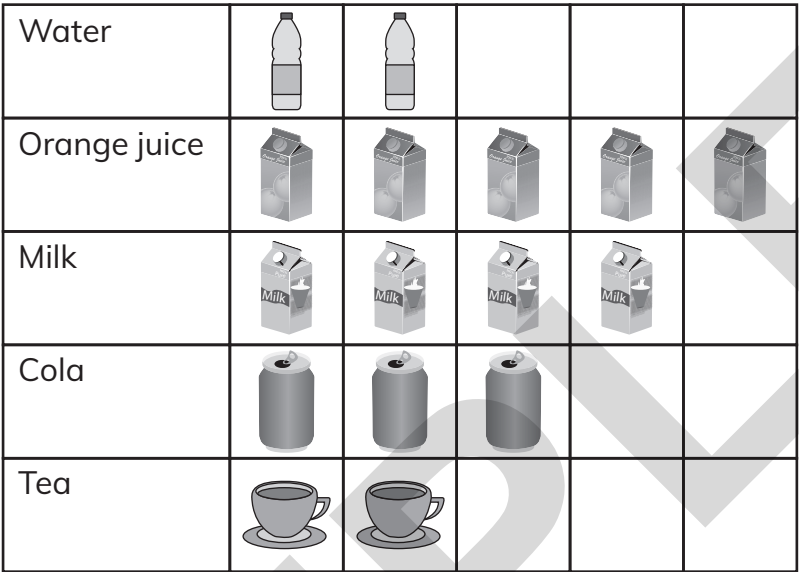
How many children like orange juice? ☐

How many children like water? ☐

Which drink was liked by 3 children? _____

How many more children liked milk than tea? ☐

How many children were asked altogether? ☐

Which is your favourite drink? _____

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9 Statistics (2)

4 This block graph shows how many letters there are
in some children's family names.
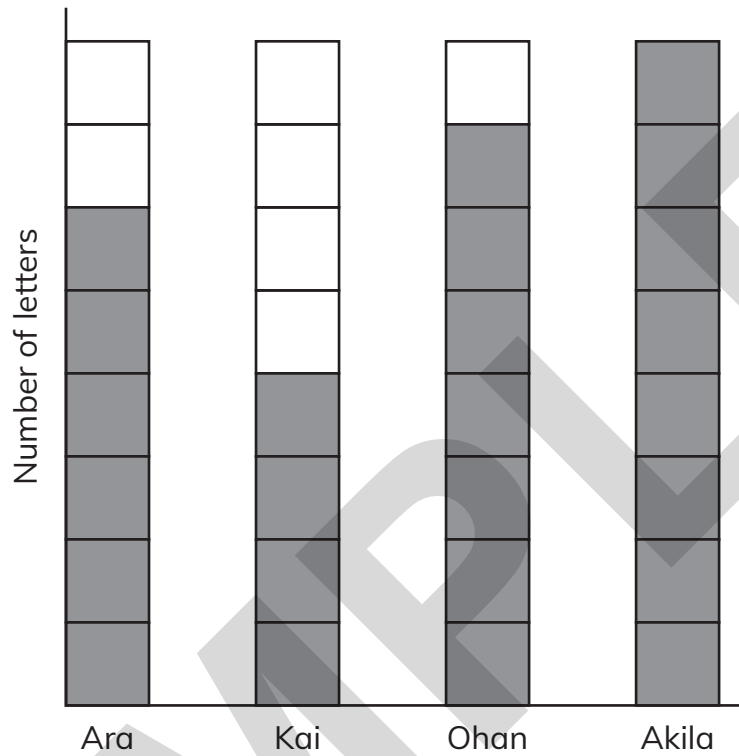
How many letters are in:

Ara's family name? ☐

Ohan's family name? ☐

Akila's family name? ☐

Whose family name has most letters? _____

Whose family name has least letters? _____

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9.2 Statistics

How many more letters are in Ohan's family name than

in Kai's family name? ⬚

How many fewer letters are in Aria's family name than

in Akila's family name? ⬚

Write 2 more questions of your own.

1 _____

2 _____

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9 Statistics (2)

Challenge

5   The pictogram shows fruit in a fruit bowl.

Apples	🍎	🍎	🍎	🍎	🍎	🍎	🍎		
Pears	🍐	🍐	🍐	🍐					
Kiwis	●	●	●	●	●				
Mangoes	🥭	🥭	🥭						
Oranges	🍊	🍊	🍊	🍊					
Bananas	🍌	🍌	🍌	🍌	🍌	🍌			

How many pieces of fruit are in the bowl? ☐

How many more pears are there than mangoes? ☐

How many fewer bananas are there than apples? ☐

Which are there most of in the bowl? _____

Which are there least of in the bowl? _____

Make a fruit salad. You can use 6 pieces of fruit.
What would you choose?

_____

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9.2 Statistics

6   Here are 5 telephone numbers.

842 229902   024 771024   061 382517   245 027538   143 195035

Find out how many times each of the digits 0 1 2 3 4 5 6 7 8 9 are used.

Complete the block graph to show your results.

Number of times used (y-axis)

Columns labelled: 0 1 2 3 4 5 6 7 8 9
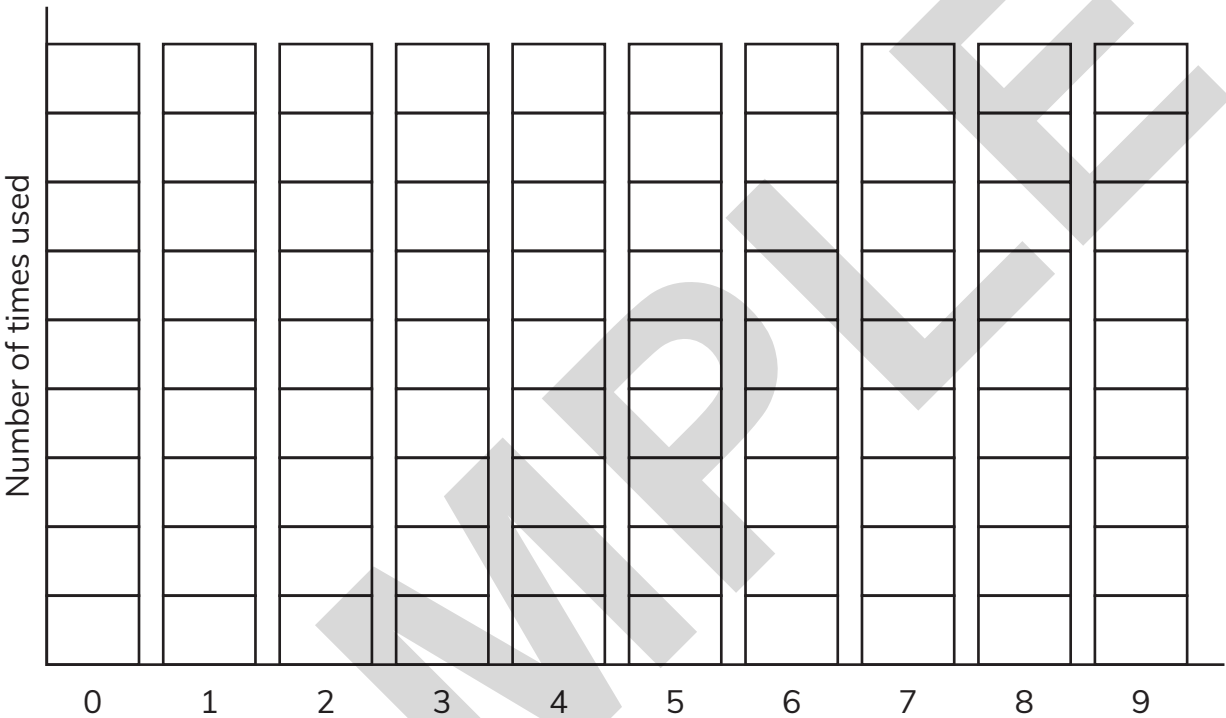
Write 4 questions using the data in this block graph.

1 _____

2 _____

3 _____

4 _____

10 ▶ Calculating

> 10.1 Adding and subtracting two 2-digit numbers

Exercise 10.1

swap   total

Focus

1   Add two 2-digit numbers.

   a   32 + 26

   = ☐

   b   41 + 35

   = ☐

   c   23 + 34

   = ☐

   d   57
   + 21

   e   43
   + 14

   f   23
   + 24
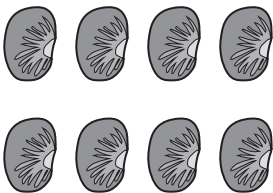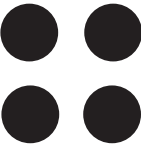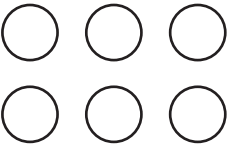
2   Solve each number sentence. Show your steps.

10s	1s
🫘🫘🫘	🫘🫘🫘🫘 🫘🫘🫘🫘

38 − 25

= ☐

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10.1 Adding and subtracting two 2-digit numbers

10s	1s
● ● ● ●	○ ○ ○ ○ ○ ○

$46 - 12$

$=$

3   Use the 100 square to help you find the totals.

a $27 + 12 =$ ⬜

b $33 + 24 =$ ⬜

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
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
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Worked example 1

Find the difference between 26 and 38.

Show both numbers on a 100 square or number line.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
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
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Count on from 26 to 38.

I counted on ten to 36. Then I counted on in ones to 37 then 38. That's 12. The difference between 26 and 38 is 12.

Answer: 38 – 26 = 12

4 Find the difference between each pair of numbers.

Write the number sentence. Use the 100 square to help you.
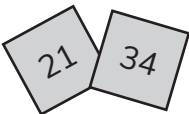
| 21 | 34 | 46 | 67 |

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
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
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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10 **Calculating**

Practice

5   Choose a number from each cloud to add together. Do this 3 times. Write your number sentences. Which method will you use?

26   44

16   35

52   23

31   42
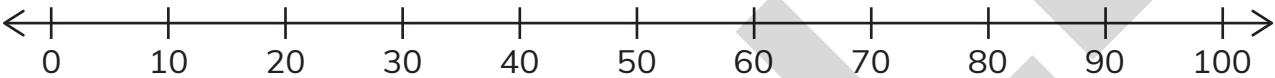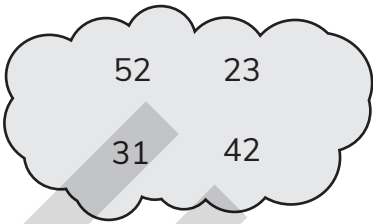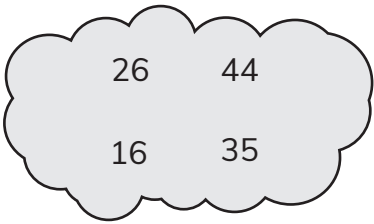
10s	1s

_____

_____

6   Complete the grid. Which methods will you use to find the missing numbers?

42		

−26

68	47	79
57	89	97
49	87	58

7 Marcus makes some mistakes when he writes these number facts.

Tick those that are correct.

Correct any that are not equivalent in value.

53 + 24 = 54 + 25   63 + 25 = 53 + 35

85 − 33 = 95 − 23   37 − 12 = 39 − 14

8 The difference between two numbers is 23.

If one of the numbers is 74, what could the other number be?

Challenge

9 Using the digits 1, 2, 3, 4 and 5 only once, make two 2-digit numbers. Add the two numbers together.

What is the smallest total you can make?

What is the greatest total you can make?

10 Calculating

10 Complete this number puzzle.

1	2	■	3	4
■	5	6	■	
7	■	8	9	■
10	11	■	12	13
■	14		■	

Clues

Across

1 42 + 33

3 99 – 42

5 18 + 21

8 79 – 31

10 85 – 22

12 88 – 14

14 79 – 55

Down

2 87 – 34

4 97 – 26

6 51 + 43

7 88 – 22

9 44 + 43

11 77 – 45

13 84 – 43

› 10.2 Connecting addition and subtraction

Exercise 10.2

fact family   inverse

Focus

1 Find the inverse calculations.

Calculation	Inverse
7 + 3 = 10	
13 + 5 = 18	
32 + 17 = 49	
8 − 6 = 2	
19 − 12 = 7	
28 − 15 = 13	

2 Write two different additions with a total of 20.

Find the inverse calculations.

_____ _____

_____ _____

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10 Calculating

Worked example 2

Write the fact family for this representation.
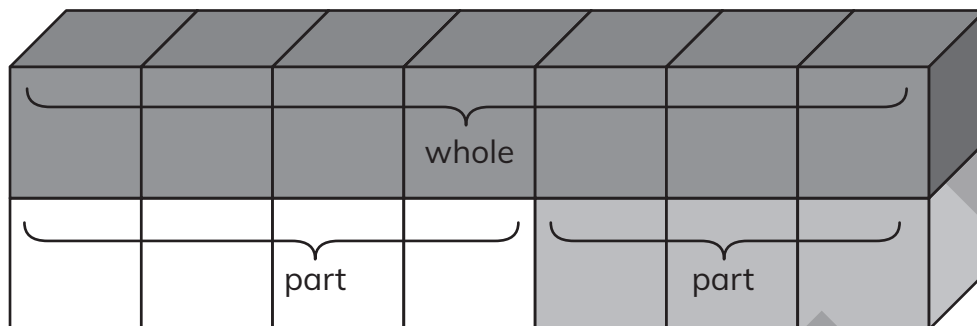
4 + 3 = 7   7 = 4 + 3

3 + 4 = 7   7 = 3 + 4

7 − 4 = 3   3 = 7 − 4

7 − 3 = 4   4 = 7 − 3

You can add in any order. Each addition can be written starting with the total. That's half the fact family.

7 is the total, first I can subtract 4. Then I can subtract 3. Each subtraction can be written starting with the answer. That's the other half of the fact family.

3   Write the fact family for this representation.

whole

part   part

☐ + ☐ = ☐   ☐ = ☐ + ☐

☐ + ☐ = ☐   ☐ = ☐ + ☐

☐ − ☐ = ☐   ☐ = ☐ − ☐

☐ − ☐ = ☐   ☐ = ☐ − ☐

Practice

4 Find the inverse calculation to check each calculation.

a   15

+ 12   inverse   –

27

b   34

– 23   inverse   +

11

c   52

+ 35   inverse   –

87

d   96

– 64   inverse   +

32

We are working with Cambridge Assessment International Education towards endorsement of this title.

10.2 Connecting addition and subtraction

5   Find the missing digit in each calculation.

a
```
  ☐  3
+ 2  4
─────
  5  7
```

b
```
  4  9
− 2  ☐
─────
  2  2
```

c
```
  ☐  6
− 4  2
─────
  3  4
```

d
```
  6  5
+ 1  ☐
─────
  7  9
```

Discuss how to find the missing digit with your partner or carer.

6 Complete each fact family house.

```
         13                                    15

     7          20                        13          28

  _____ + _____ = _____              _____ + _____ = _____

  _____ = _____ + _____              _____ = _____ + _____

  _____ + _____ = _____              _____ + _____ = _____

  _____ = _____ + _____              _____ = _____ + _____

  _____ − _____ = _____              _____ − _____ = _____

  _____ = _____ − _____              _____ = _____ − _____

  _____ − _____ = _____              _____ − _____ = _____

  _____ = _____ − _____              _____ = _____ − _____
```

7 The number sentence 50 + 40 = 90 shows two complements of 90.

Write the 4 related subtraction calculations from the fact family.

8 Estimate, solve and use the inverse calculation to check.

a 54 + 35

b 77 − 44

Tip

Round each number to the nearest 10 to help you estimate your answer.

Challenge

9   Find the missing digits in each calculation.

a

	☐	☐
+	4	5

| | 9 | 8 |

b

	4	☐
−	☐	3

| | 1 | 4 |

c

	8	6
−	☐	☐

| | 2 | 5 |

d

	☐	2
+	5	☐

| | 9 | 5 |

10 The number sentence 30 + 30 = 60 shows two complements of 60.

Why are there only 2 related subtractions in the fact family for this calculation?

_____

_____

_____

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10 Calculating

11 Marcus rounds two numbers to the nearest 10 to
estimate the total of his addition, 40 + 30 = 70.
The answer to his addition is 74.

What could Marcus's addition have been?

Find all the possible solutions.

Check each addition using the inverse calculation.

12 Zara rounds her numbers to the nearest 10 to
estimate the answer to her subtraction, 70 – 40 = 30.
The answer to her subtraction is 27.

What could Zara's subtraction have been?

Find all the possible solutions.

Check each subtraction using the inverse calculation.

⟩ 10.3 Multiplication

Exercise 10.3

product

Focus

1   Write the multiplication sentences.
    The first one has been done for you.

Half of: $10 \times 8 = 80 \rightarrow$ <u>$5 \times 8 = 40$</u>

Double: $5 \times 4 = 20 \rightarrow$ _____

Half of: $10 \times 3 = 30 \rightarrow$ _____

Double: $5 \times 9 = 45 \rightarrow$ _____

2   Use the connection between doubling and multiplying by 2 to
    find the missing facts.

Multiplying by 2	Doubling
$1 \times 2 = 2$	
	$10 + 10 = 20$
$2 \times 2 = 4$	
	$5 + 5 = 10$

3 The equal product machine makes equivalent multiplication calculations.

Look at the calculations going into the machine.

What calculations might come out of the machine?

10 × 1 = 10

2 × 10 = 20

4 × 2 = 8
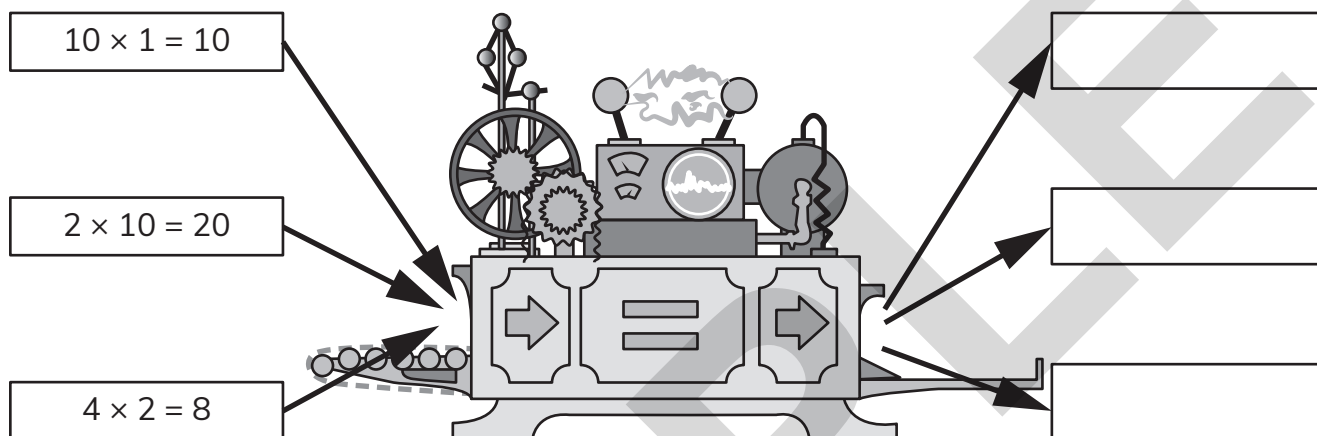
Write your three equivalent facts.

☐ × ☐ = ☐ × ☐

☐ × ☐ = ☐ × ☐

☐ × ☐ = ☐ × ☐

4 Which pair of equivalent multiplication facts do these cubes represent?

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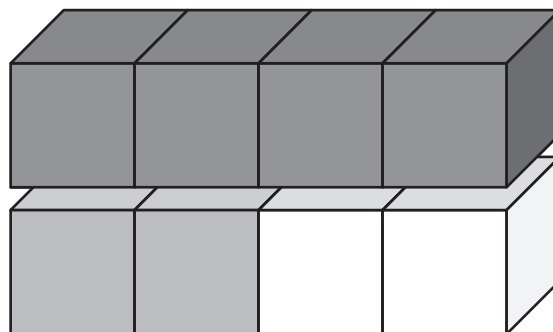
10.3 Multiplication

Practice

5   Sofia uses 10 hands to make two different multiplication facts from the multiplication table for 5. What could those facts be?

_____

_____
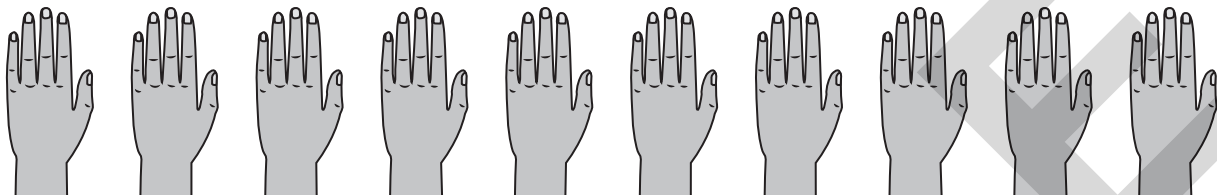
Zara uses five pairs of hands to make two different multiplication facts for the multiplication table for 10. What could those facts be?

_____

_____
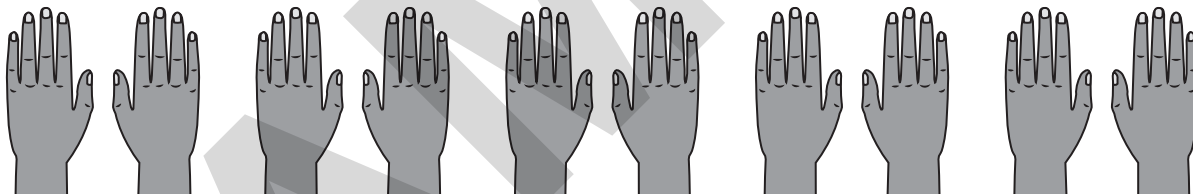
6   Draw lines to connect the equivalent calculations.

3×2 $10 + 10$

10×2 $6 + 6$

1×2 $3 + 3$

6×2 $1 + 1$

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10 Calculating

7 The teacher points to this place on the counting stick.
Which multiplication facts could this represent?
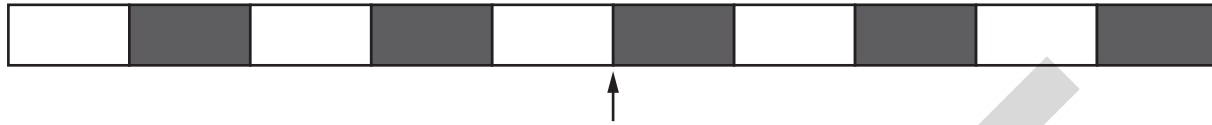
Challenge

8 Which products are in both the multiplication table for 5 and the multiplication table for 10? Explain why.

9 Arun writes $10 \times 4 = 40$ to find the cost of 4 biscuits.

Is he correct?

Explain how you know.

5 c

Each

Sofia writes $10 \times 7 = 70$ to find the cost of 7 cakes.

Is she correct?

Explain how you know.

10 c

Each

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10.4 Division

10 Put these statements in order of their value,
from smallest to greatest.

10×5 5×3 2×6 1×7 5×4 10×3

〉 10.4 Division

Exercise 10.4

quotient

Focus

1 Complete the multiplication table for 10.
Use it to write the division facts for 10.

$10 \times 1 = 10$ $10 \div 10 = 1$

$10 \times 2 = 20$ _____

$10 \times 3 =$ _____

$10 \times 4 =$ _____

_____   _____

_____   _____

_____   _____

_____   _____

2 Write the inverse division fact for each multiplication fact.

$2 \times 3 = 6$ _____

$1 \times 5 = 5$ _____
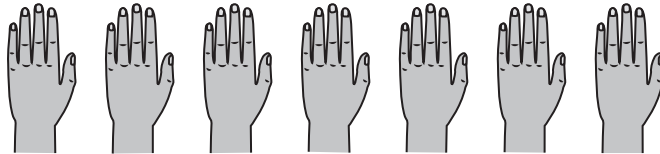
$5 \times 7 = 35$ _____

3 Write a division fact with the same value as the multiplication fact.

$5 \times 2 =$ _____

$9 \times 1 =$ _____

Practice

4 Write a multiplication fact and the inverse division fact for each picture.

	×		=		
	÷		=		

10 c   10 c   10 c

	×		=		
	÷		=		
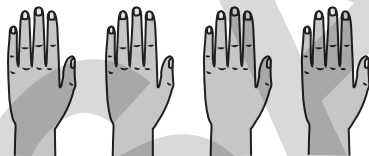
5 When a product and a quotient have the same value, the facts are equivalent in value.

Write three equivalent statements.

	×		=		÷	
	÷		=		×	
	×		=		÷	

Discuss how you found your answers with a partner or carer.

6 Write the matching division or fraction fact.

Division fact	Fraction fact
	$\frac{1}{2}$ of 18 = 9
14 ÷ 2 = 7	
16 ÷ 4 = 4	
	$\frac{1}{4}$ of 4 = 1

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10 Calculating

Challenge

7   Marcus makes a cube snake using 16 cubes.

Zara's snake uses half as
many cubes as Marcus.
Arun's snake uses only a
quarter of the cubes that
Marcus' snake uses.
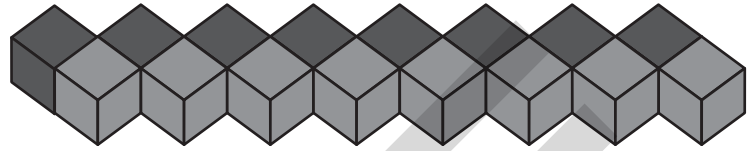
How many cubes are there in Zara's snake?
Write two number sentences to show how you found out.

How many cubes are there in Arun's snake?
Write two number sentences to show how you found out.

8   Put these calculations in order of their value, from smallest to greatest.

18 ÷ 2   6 × 2   40 ÷ 10 $\frac{1}{2}$ of 12 $\frac{1}{4}$ of 20

_____   _____   _____   _____   _____

9   Arun writes a set of 4 equivalent calculations for 1 × 8.
Starting with 1 × 8, can you write a set of equivalent
calculations longer than Arun's?

11 ▶ Geometry (2)

> 11.1 Angles and turns

Worked example 1

How can Sofia get home? Colour a route that she takes.
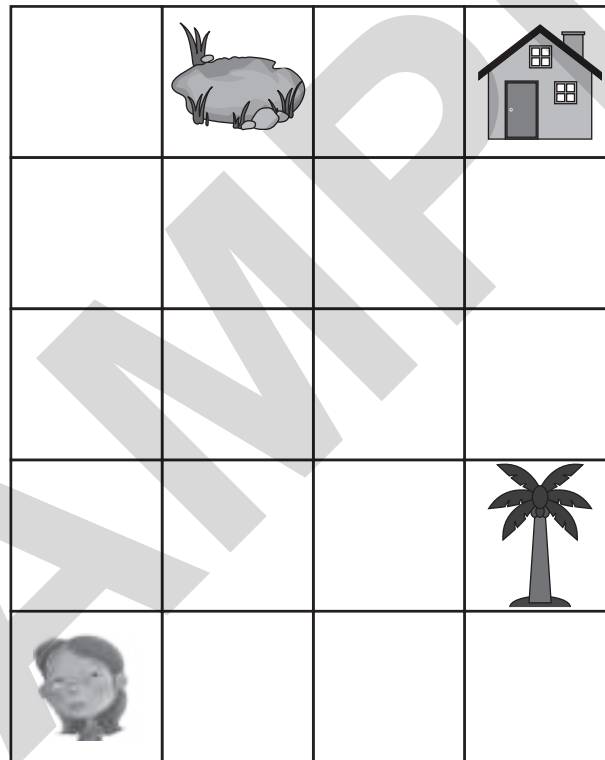
angle
anticlockwise
clockwise
half turn
quarter turn
right angle
turn
whole turn

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11 Geometry (2)

Continued

She can turn clockwise and then anticlockwise at the end.

She can't do that. There will be a tree in the way.

She can walk forward and then turn clockwise at the top.

She can't do that. There will be a pond in the way.

Answer:

Exercise 11.1

Focus

1   Follow the grey path and make a cross at every right angle quarter turn you make.

The first two have been done for you.
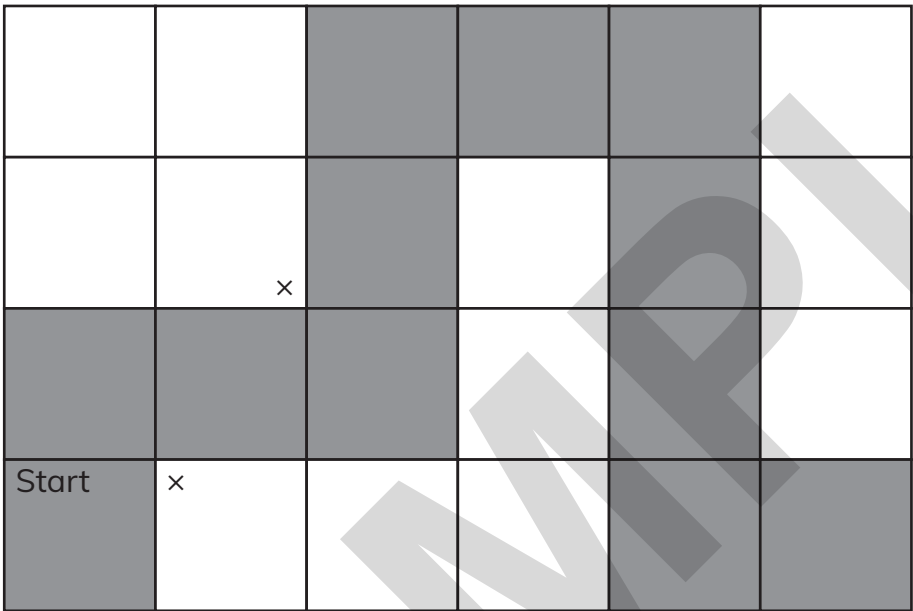
How many right angle turns did you make? ☐

How many anticlockwise turns? ☐

How many clockwise turns? ☐

2 Look for angles on your table. It may be a book,
a pencil case or even the table.

Draw what you can see.

What can you see?	Draw it

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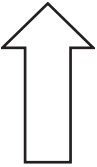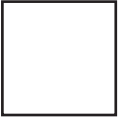
11.1 Angles and turns

3   Predict and check how many times these shapes
    look identical as they complete a whole turn.

Complete the table.
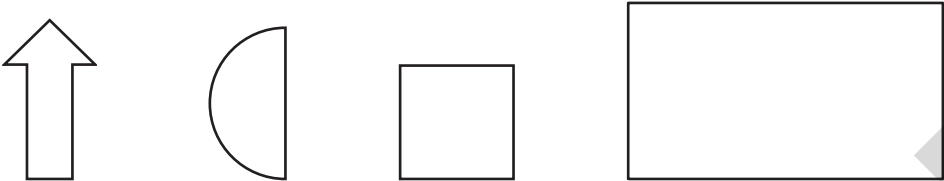
Shape	Predict	Check
⬆		
◗		
▢		
▭		

Draw a shape that will look identical 3 times after turning.

Practice

4   Colour a path that has 5 right angle quarter turns.

Start				
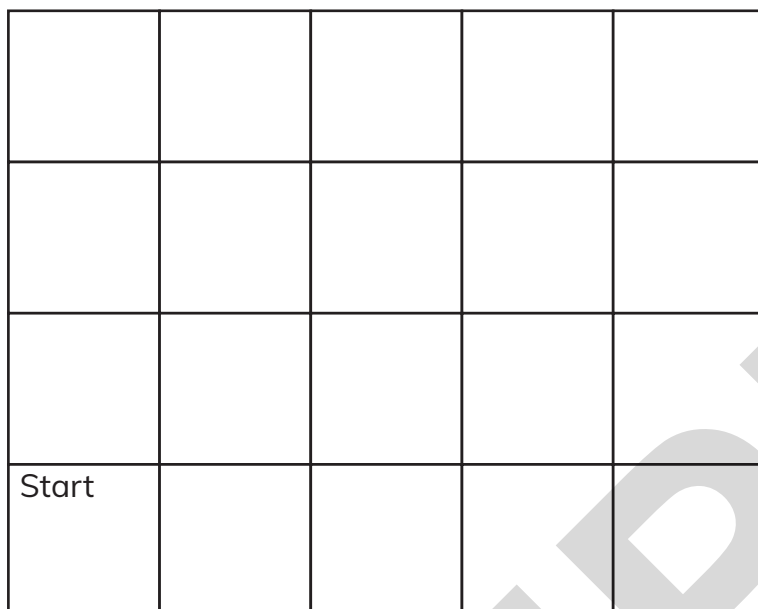
Show the turns with a cross ✗.

5   Shape A looks like this.

a   Draw a ring around the shape that shows Shape A after half a turn.

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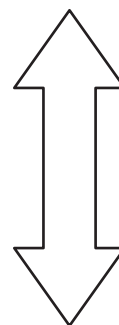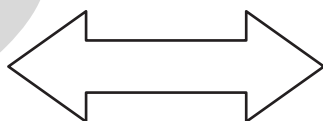
11.1 Angles and turns

b Draw a ring around the shape that shows
Shape A after a whole turn.
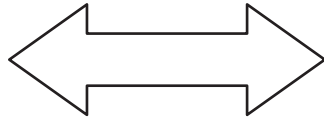
c Draw a ring around the shape that shows
Shape A after a quarter turn.
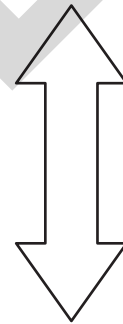
6 Look at these shapes.

Draw what they would look like at the end of 3 half turns
clockwise and anticlockwise.

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11 Geometry (2)
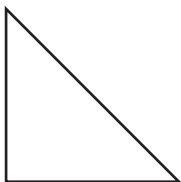
Challenge

7 On a piece of paper, write the instructions to get the elephant to its house. Draw the path as you go.

Use the words: clockwise, anticlockwise, quarter turn, half turn, whole turn.
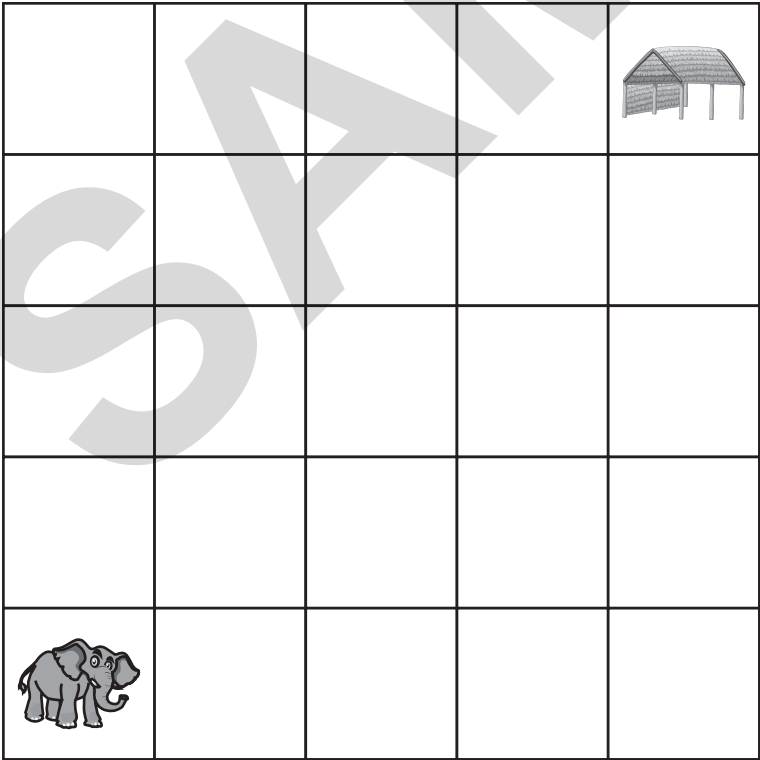
Tip

Remember the elephant has to face the way it is walking.

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11.1 Angles and turns

8   Lyra the ladybird wants to see the spider.

She says, 'I can make a half turn clockwise or I can make two quarter turns anticlockwise.'
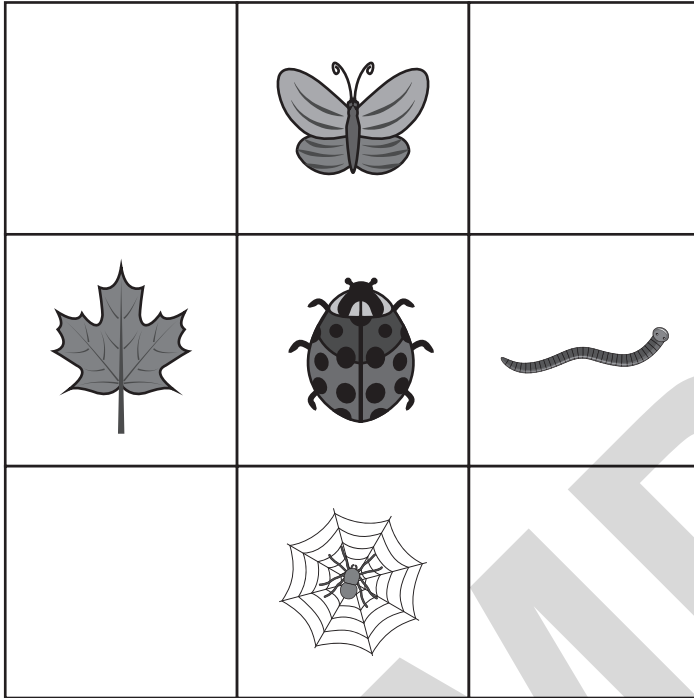
a   How else can Lyra turn to see the spider?
Think of at least two ways.

I can _____

I can _____

b   Now Lyra is facing the spider, how can she turn to
see the worm? Think of at least four ways.

I can _____

I can _____

I can _____

I can _____

9 Turn and draw the shapes a half turn clockwise.

Draw where the dots would be.

We are working with Cambridge Assessment International Education towards endorsement of this title.
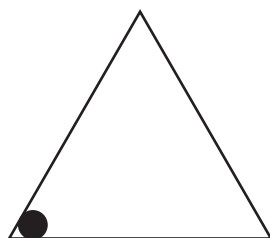
11.2 Circles

› 11.2 Circles

Exercise 11.2

Focus

centre   distance

1   Use a ruler.

Which circle shows the centre dot?

Draw 4 lines from the centre dot of that circle to the edge.
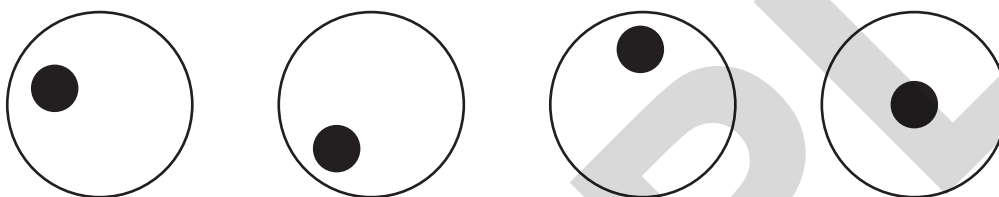
Measure the lines you drew.

How long is each line?

Practice

2   The distances from one edge to the other through the centre point are shown under these circles.

How long would one line from the centre to an edge be?
Write your answers on the lines.

Show the centre point and draw the line.
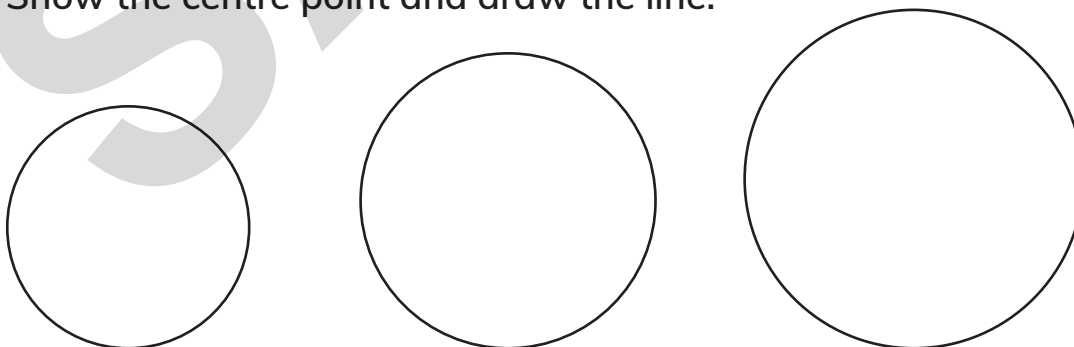
8 centimetres   10 centimetres   12 centimetres

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11 Geometry (2)

Challenge

3   Use a ruler.

Join 4 sets of numbers to find the centre of the clock.

The numbers in each set must be opposite each other on the clock. The first one has been done for you.
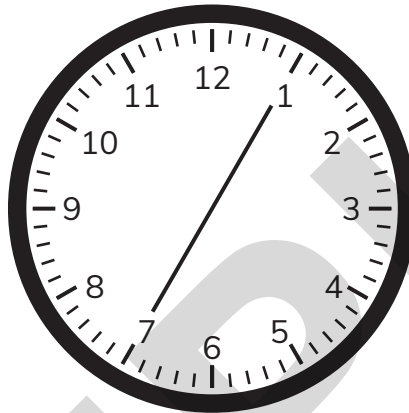
How many lines did you draw?

How many lines come from the centre to the edge?

Are they all the same length? Measure them.

They all measure _____ .

12 Telling the time
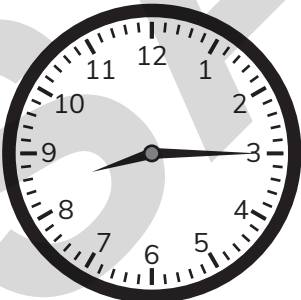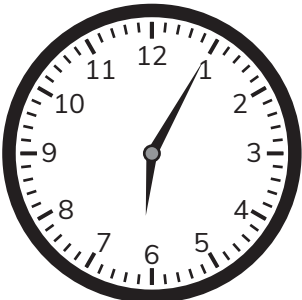
> 12.1 Telling the time

Exercise 12.1
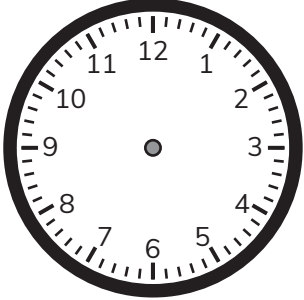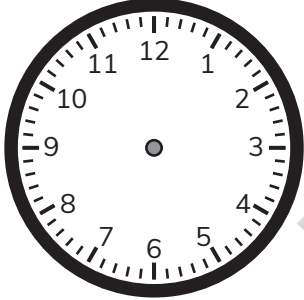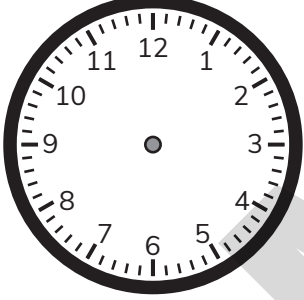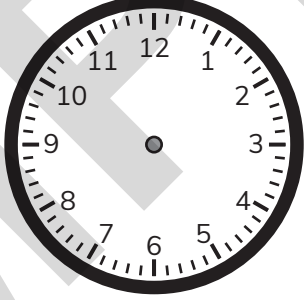
analogue clock   digital clock
quarter past   quarter to

Focus

1   Complete the digital clocks to match the analogue clocks.

We are working with Cambridge Assessment International Education towards endorsement of this title.
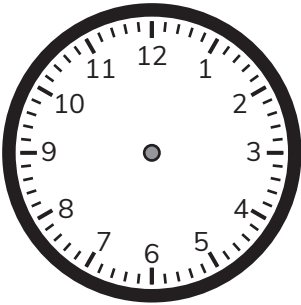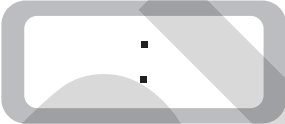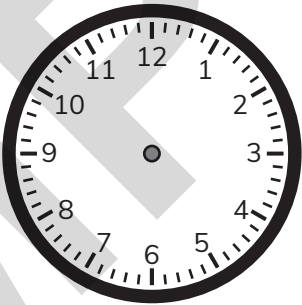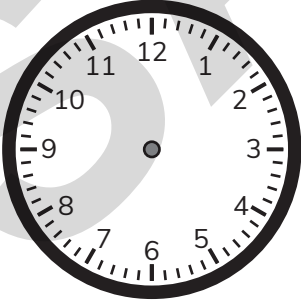
12 Telling the time

2   Draw the hands on the analogue clocks to match the digital clocks.

06:15	07:20
05:05	04:25

3   Make each pair of clocks show the same time.
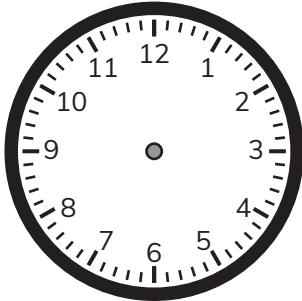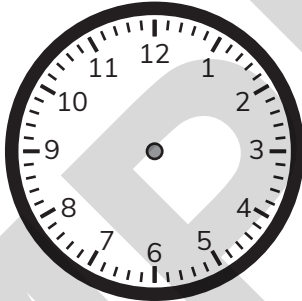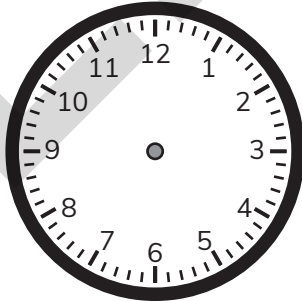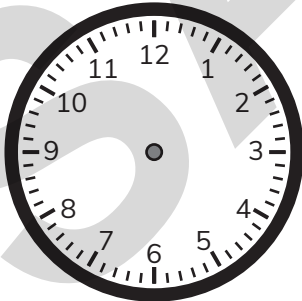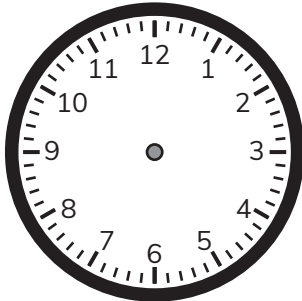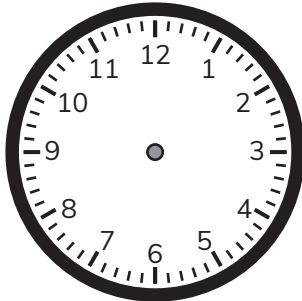
4 How many minutes are there in quarter of an hour?

_____ minutes

Practice
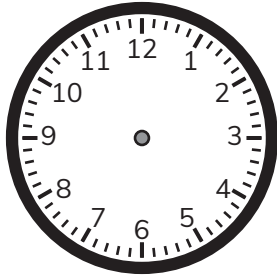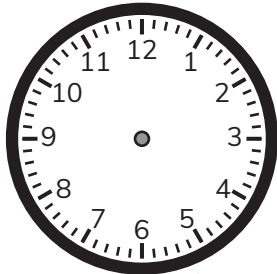
5 Make each pair of clocks show the given time.

25 minutes past 8	5 minutes to 12	15 minutes to 4
:	**:**	**:**

25 minutes to 3	10 minutes past 10	20 minutes past 6
:	**:**	**:**

6 Complete the clocks. Draw a ring around the correct time of day.

Quarter past 9	Good morning!	
(clock) __:__		morning afternoon evening
Quarter to 7	Can I watch TV before I go to bed?	
(clock) __:__		morning afternoon evening
Quarter to 4	Welcome to After Schools Club	
(clock) __:__		morning afternoon evening

Challenge

7 Spin the spinner to choose the hour, spin again to choose how many sets of 5 minutes past the hour. Record the time on the clocks and in words. Repeat.

Here are some words to help you: minutes, to, past, quarter, half.

Tip
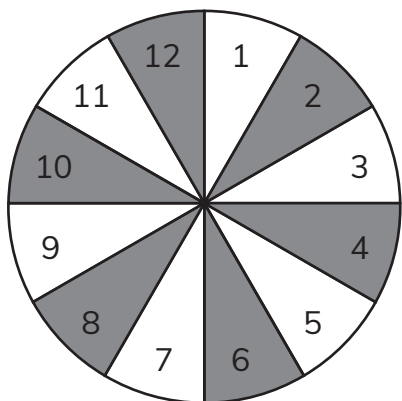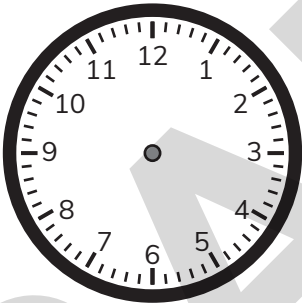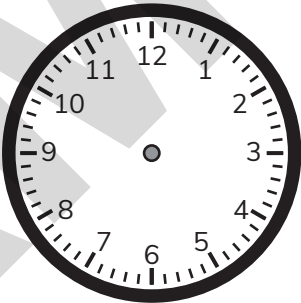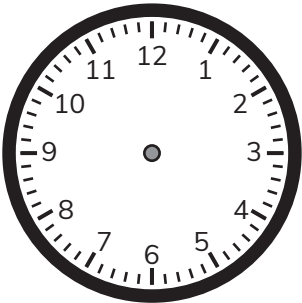
My spin for the hour was 3. My spin for the minutes was 7, so that is 35 minutes past the hour because 5 × 7 = 35.
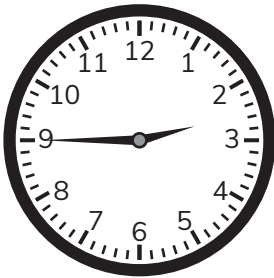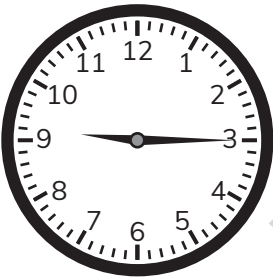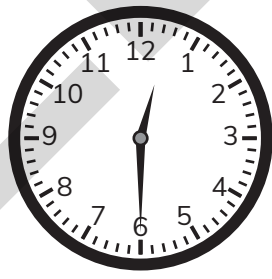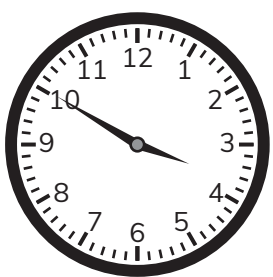
03:35

25 to 4

8 Draw a ring around the odd one out in each row.

(clock showing 2:45)	02:45	(clock showing 2:45)	Quarter to 3
06:00	Half past 12	12:30	(clock showing 6:00)
20 minutes to 10	(clock showing 9:40)	10 minutes past 8	09:40
03:50	10 minutes to 4	(clock showing 10:20)	20 minutes past 10

9 A quarter dollar is 25c. A half dollar is 50c.

How could this confuse people when reading the time?

13 ▸ Measures (2)

❯ 13.1 Mass and temperature

gram   kilogram   mass

Worked example 1

Arun is making 10 small cakes for his friends.

He needs:

> 8 cups of flour
> 4 cups of sugar
> 2 cups of butter
> 2 eggs

How much of each ingredient does Arun need if he makes 5 small cakes?

Answer:

Arun will need:

> 4 cups of flour
>
> 2 cups of sugar
>
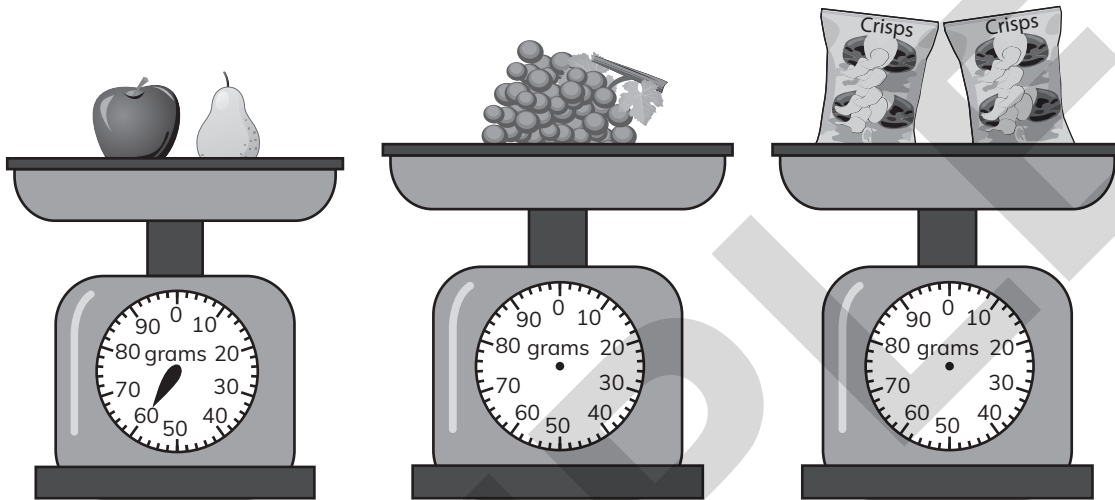> 1 cup of butter
>
> 1 egg

I will need to halve the amount of ingredients.

Exercise 13.1

Focus

1 Look at the pointer on the scales and answer the questions.

a The apple has a mass of 40 grams.

What is the mass of the pear? _____

b The grapes have a mass of 70 grams.
Draw an arrow to show 70 grams.

c One bag of crisps has a mass of 25 grams.
Draw an arrow to show the mass of 2 bags of crisps.

2 Write the cookie recipe for 2 people if 4 people use:

100 grams flour

2 eggs

50 grams sugar

_____

_____

_____

3 Estimate and draw a ring around the mass of these objects:

A caterpillar   3 grams   30 grams

A bug   1 gram   100 grams
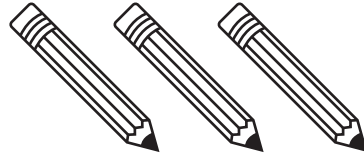
3 pencils   15 grams   50 grams

4 Draw arrows on the scales to show the answers.
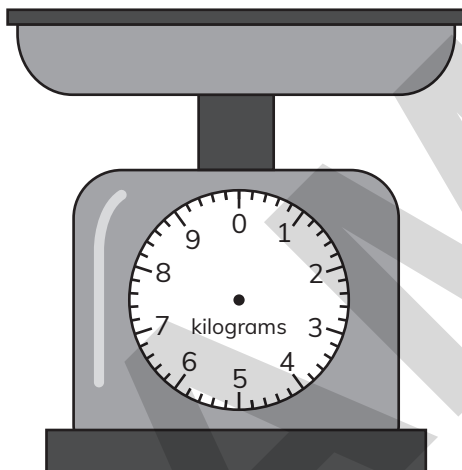
3 kilograms + 2 kilograms   6 kilograms + 2 kilograms
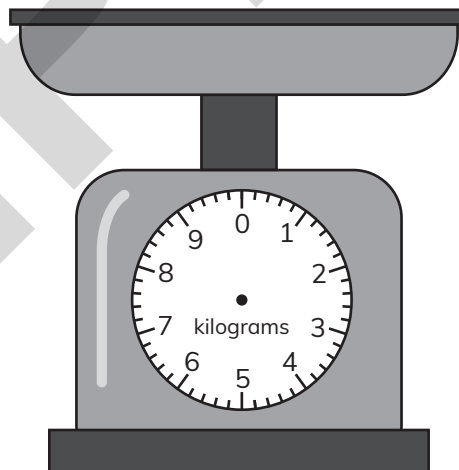
3 kilograms + 3 kilograms + 1 kilograms

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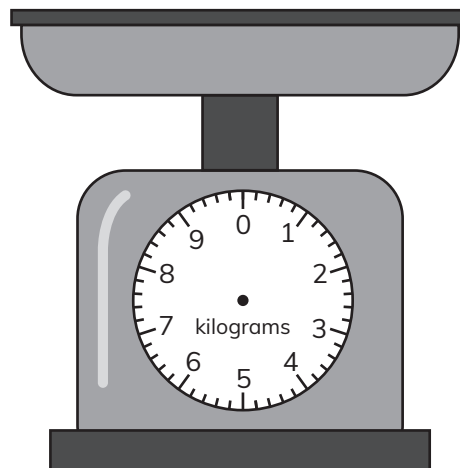
13.1 Mass and temperature

5   Find the mass of each animal.

a

2 frogs = _____   1 frog = _____

Draw the scales if you took 1 frog away.

Ring the correct answer:

1 frog is **heavier** than the blocks.   1 frog is **lighter** than the blocks.

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13 Measures (2)

b

2 frogs = _____   1 frog = _____

Draw the scales if you took 3 sweets away.

Ring the correct answer:

2 frogs are **heavier** than 5 sweets.   2 frogs are **lighter** than 5 sweets.

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13.1 Mass and temperature

c

Draw the scales if another pebble was put in.

Ring the correct answer:

2 pebbles are **heavier** than 1 bird.   2 pebbles are **lighter** than 1 bird.

Practice

6   Put these masses in order starting with the lightest.
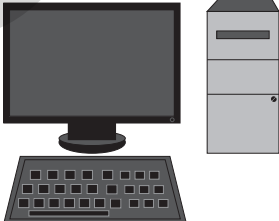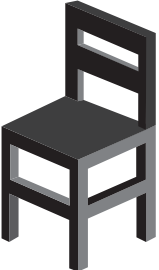
| 32 grams | 9 grams | 26 grams | 82 grams | 54 grams | 100 grams |

_____ _____ _____ _____ _____ _____

7   Estimate the mass of these objects.
Draw a ring around the best estimate.

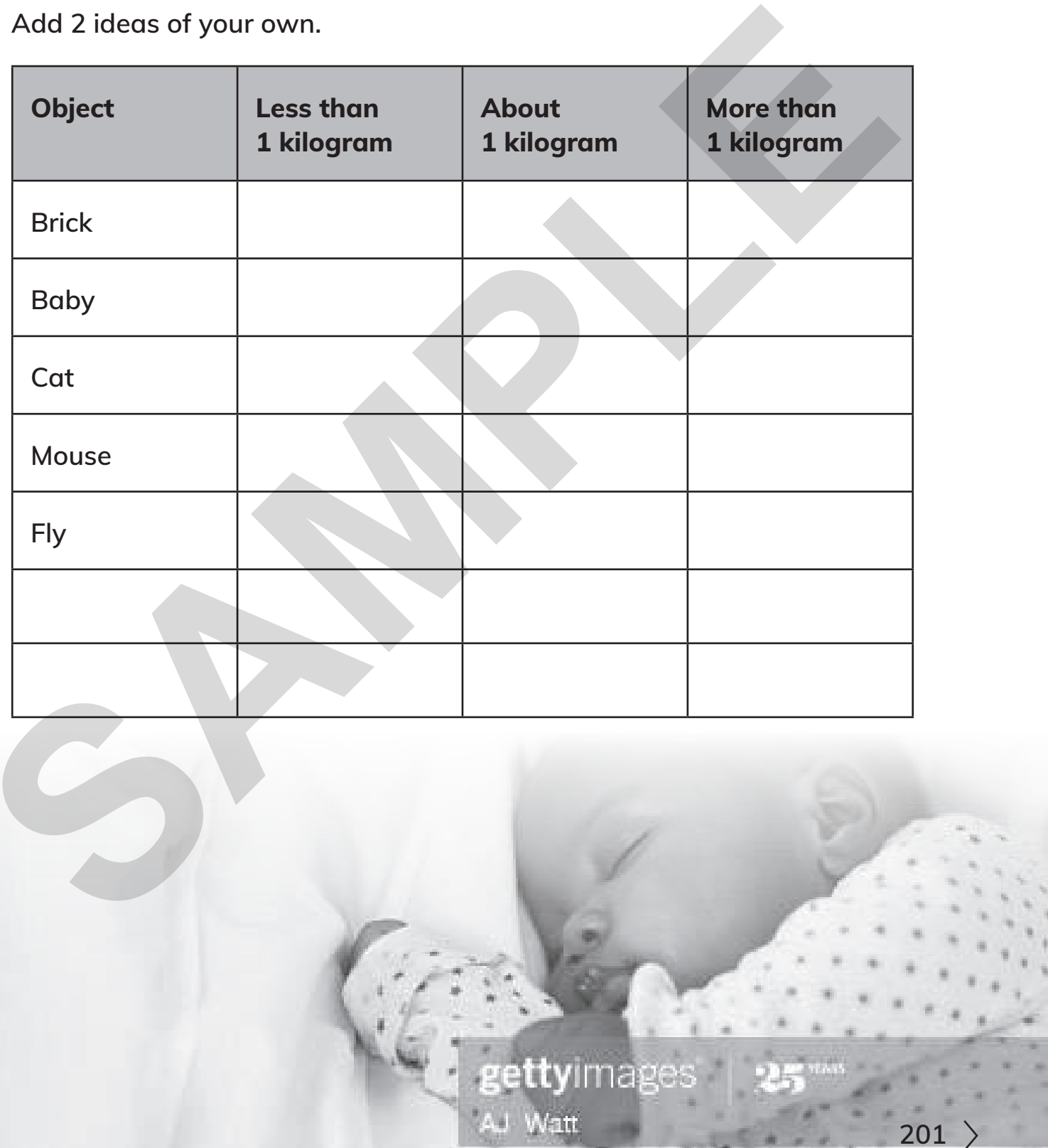|	
56 grams 56 kilograms	2 kilograms 90 grams
1 gram 14 kilograms	5 grams 50 grams
1 gram 20 grams	26 grams 26 kilograms
12 kilograms 12 grams	10 grams 10 kilograms

8 Estimate whether these will be more than, less than or about the same as a kilogram.

Put a tick to show your estimate.

Add 2 ideas of your own.

Object	Less than 1 kilogram	About 1 kilogram	More than 1 kilogram
Brick			
Baby			
Cat			
Mouse			
Fly			

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13 Measures (2)

9 Hold 2 objects. Which is heavier? How do you know?

Draw and write what you chose and what you found out.
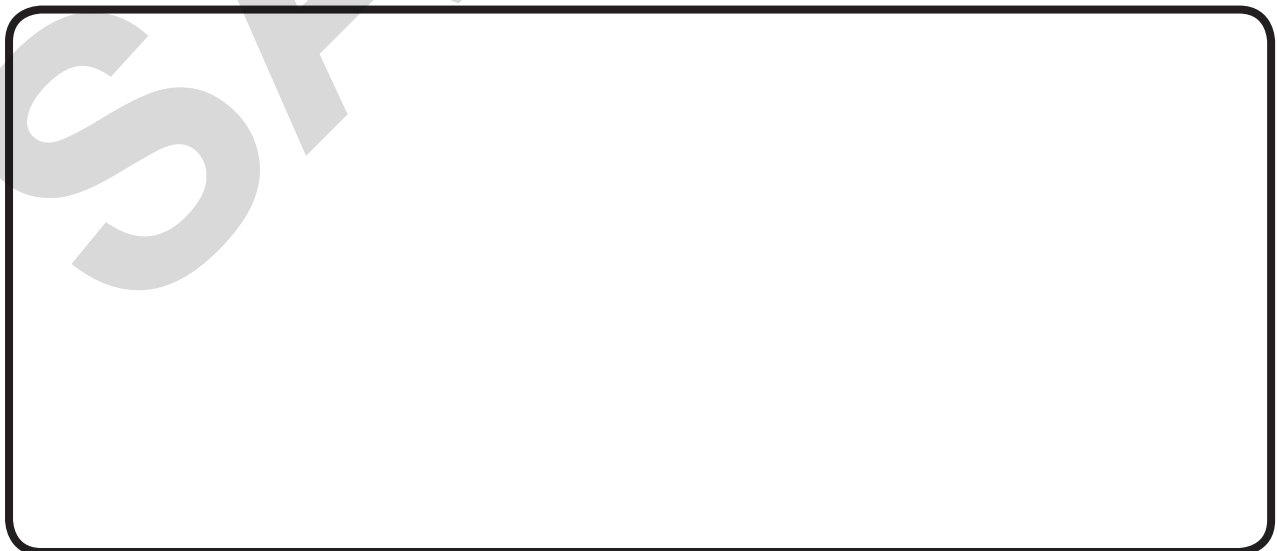
Are larger objects always heavier than smaller objects?

Draw and write what you have found out.

I am thinking of an object that is heavier than a spoon
but lighter than a plate. What could it be?

Draw and write 5 things that it could be.

Challenge

10 Experiment with some scales and find 2 objects that have about the same mass.

Do this 3 times using different objects.

Record what you have found out.

_____

_____

_____

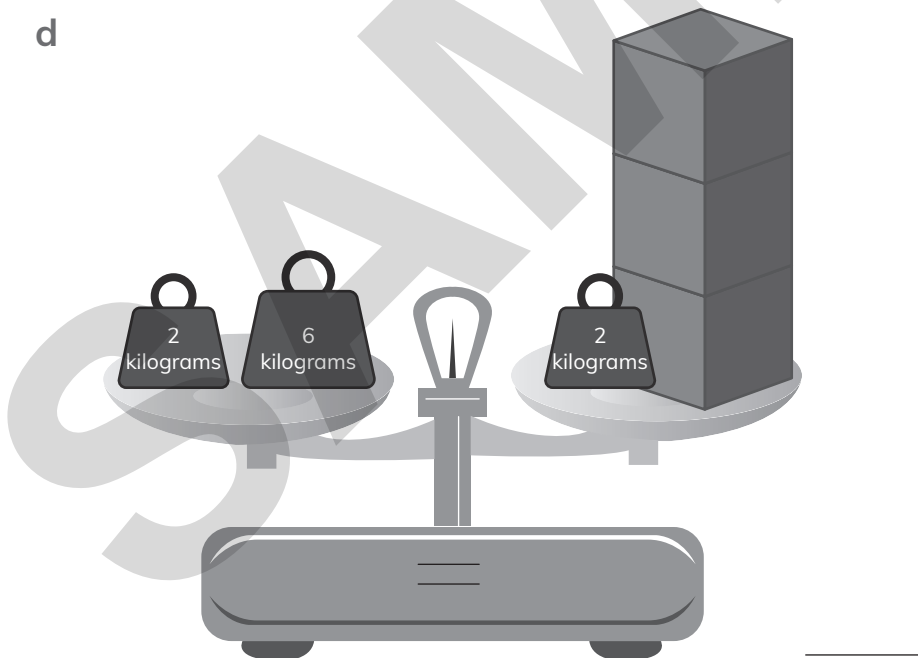**11** What is the mass of each box?

Write your answer using kilograms.

a

_____

b

_____

c

35
kilograms

_____

d

2
kilograms

6
kilograms

2
kilograms

_____
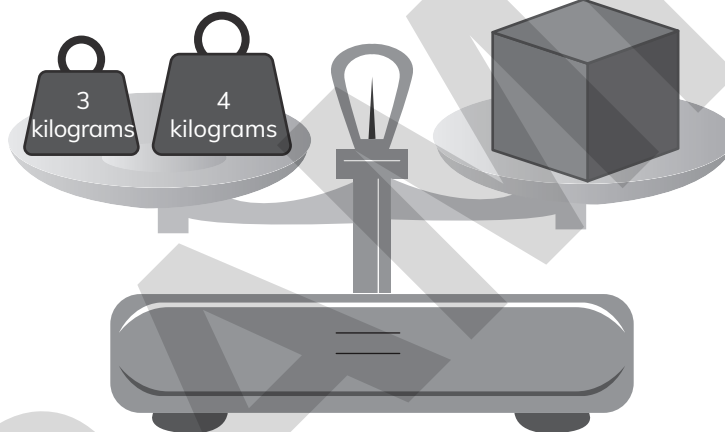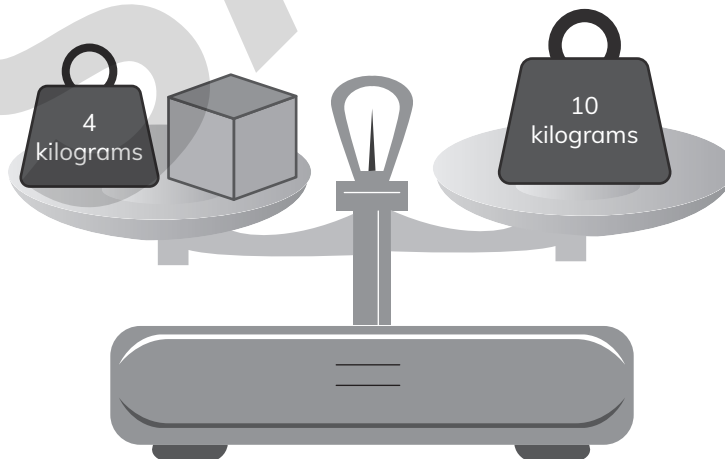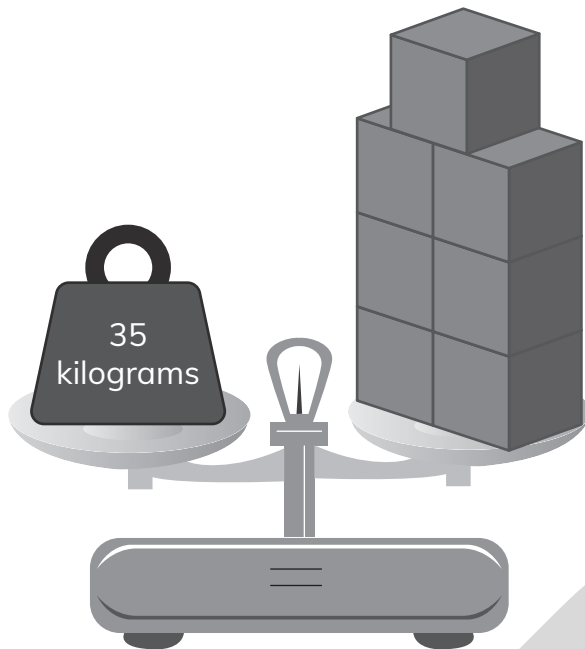
12 You have these weights.

1 gram	2 grams	5 grams	10 grams	20 grams	50 grams

You have these fruits.

4 apples: 100 grams each

2 oranges: 220 grams each

10 strawberries: 15 grams each

6 bananas: 100 grams each

How many different ways can you make the mass of the fruit?

Find 2 ways for each fruit.

You can use the weights more than once.

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13 Measures (2)

13 **a** One apple weighs 10 cubes.

How many cubes will balance 1 pineapple?
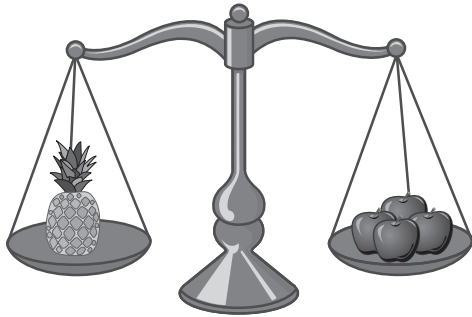
Explain how you know.

_____

_____

b 2 bananas weigh 12 cubes.

How many cubes will balance 1 pear?

Explain how you know.

_____

Write your own mass problem and the answer.

_____

_____

_____

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13.2 Capacity

› 13.2 Capacity

Exercise 13.2

Focus

Worked example 2

Compare the amounts of water.

Use the words in the boxes to label the bottles.

| Empty | Half full | Full | Almost full | Almost empty |

_____   _____   _____   _____   _____

Look at the amount of water in each bottle. Which one shall we start with?

I think it will be a good idea to start with the full and empty bottles.

Continued

Full   Empty   Half full   Almost full   Almost empty
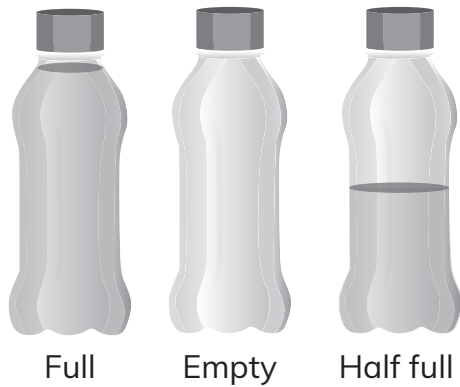
The one that is half full is easy.

That just leaves the last two, almost full and almost empty.

1   Compare the amounts of water.

Write 'more' or 'less' in the boxes.

a

b

c

d

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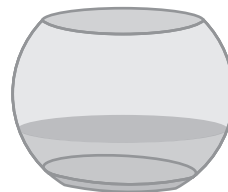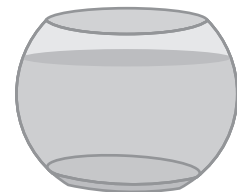
13.2 Capacity

2   When these containers are full, do they hold more or
    less than 1 litre? Draw a ring around the answer.

More   Less   More   Less   More   Less
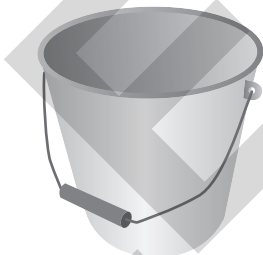
More   Less   More   Less

3   Draw a ring around the best estimate.

2 litres   1 litre $\frac{1}{2}$ litre

2 litres   1 litre $\frac{1}{2}$ litre

2 litres   5 litres   10 litres

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13 Measures (2)
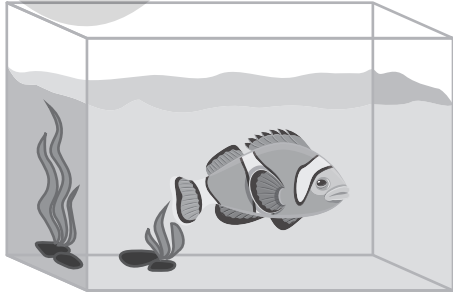
4 This bottle holds 1 litre of water.

A millilitre is about 20 drops of water.

Draw a ring around the correct answer.

	Litres	Millilitres
	9 litres	9 millilitres
	1 litre	1 millilitre
	50 litres	50 millilitres

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13.2 Capacity

Practice

5   Sofia pours 5 litres of water from a wide jar into a tall jar.

The wide jar holds 5 litres.

The tall jar only holds 3 litres.

How much water is left over?

6
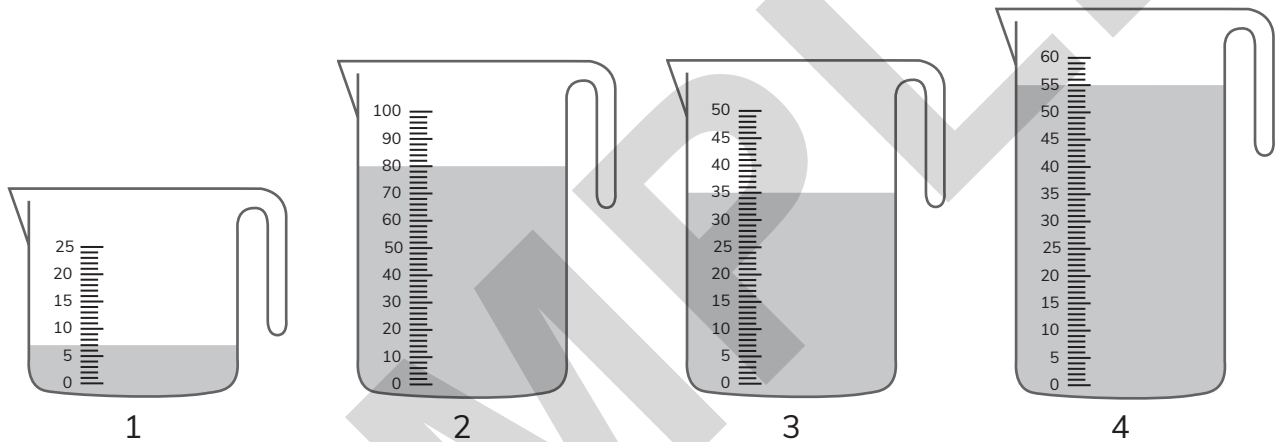
How many millilitres in each jug?

Challenge

7   Three learners need their water bottles filled. Each bottle holds $\frac{1}{2}$ litre. The teacher has a full $2\frac{1}{2}$ litre bottle.

Does she have enough water?

Is there any left?

How much?

8   Marcus collects some rain water in a bucket that holds $6\frac{1}{2}$ litres. The bucket is full.

He uses $3\frac{1}{2}$ litres to water some plants. How much is left?

Yesterday he used a 7 litre bucket to collect the same amount of rain water.

How much more rain is needed to fill this bucket?

9   For each bottle, find out how many times it takes to fill each of the bigger bottles that has a different shape.

$\frac{1}{4}$ litre $\frac{1}{2}$ litre   1 litre   2 litres
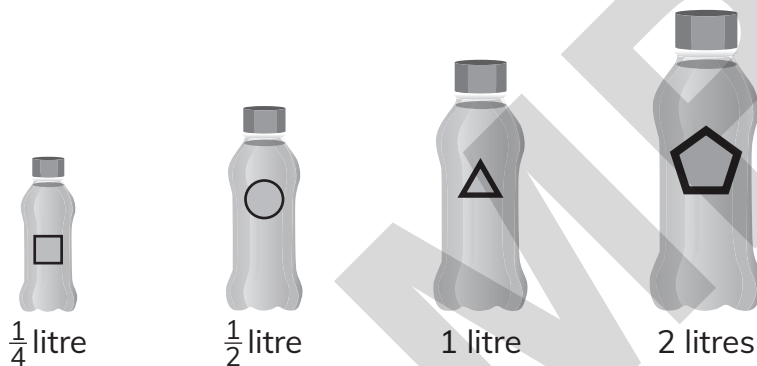
Tip

You do not need to use water. Look at the capacity.

a   How many ☐ will fill △ ?

$\frac{1}{4}$ litre   1 litre

b   How many ◯ will fill ⬠ ?

$\frac{1}{2}$ litre   2 litres

c   How many ▲ will fill ⬠ ?

1 litre   2 litres

10 Show these amounts on the measuring cylinders.

15 millilitres   60 millilitres   6 millilitres   72 millilitres

15 millilitres	60 millilitres	6 millilitres	72 millilitres
100	100	100	100
90	90	90	90
80	80	80	80
70	70	70	70
60	60	60	60
50	50	50	50
40	40	40	40
30	30	30	30
20	20	20	20
10	10	10	10
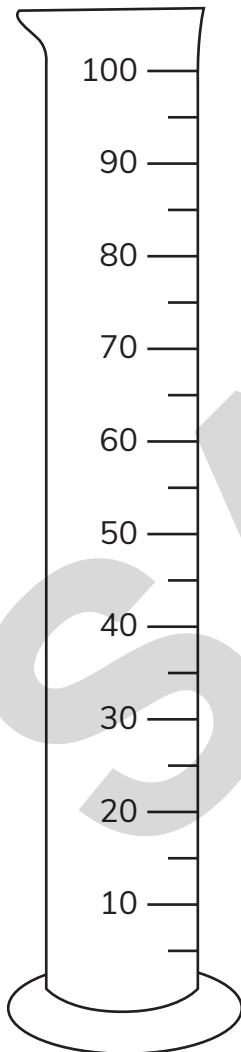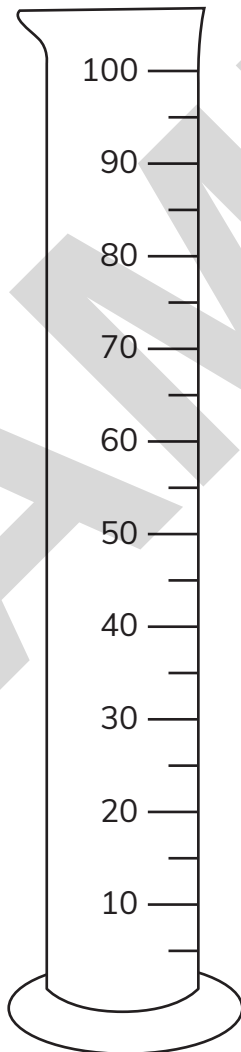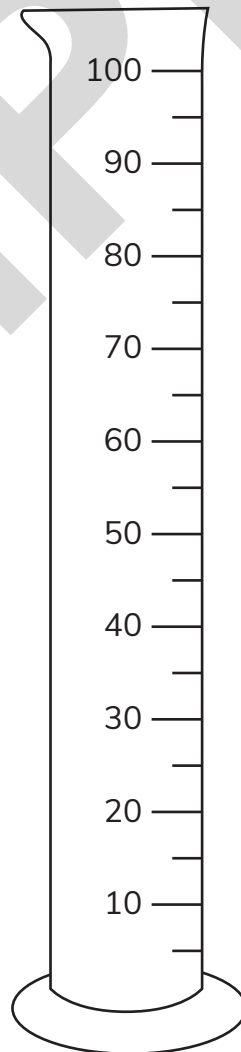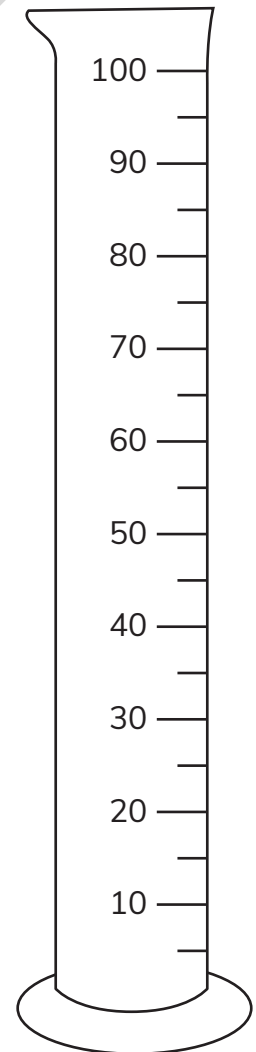
14 ▶ Pattern and probability

❭ 14.1 Pattern and probability

Exercise 14.1

Focus

> chance   experiment   outcome
> random   regular pattern   probability

Worked example 1

What is the difference between a regular pattern and a random sequence?
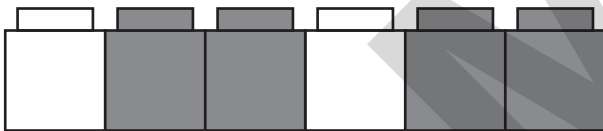
> A regular pattern follows a rule. This one repeats white, black, black, white, black, black.

> A random sequence does not follow a rule. I can't say what comes next.

? ?

---

1   Complete these regular patterns.

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14.1 Pattern and probability

2   Make 2 different random sequences using 2 different colours.

Make a regular pattern using 2 different colours.

3   Without looking, Yusuf picks an object from the jar.
What could he have picked? Ring all answers.

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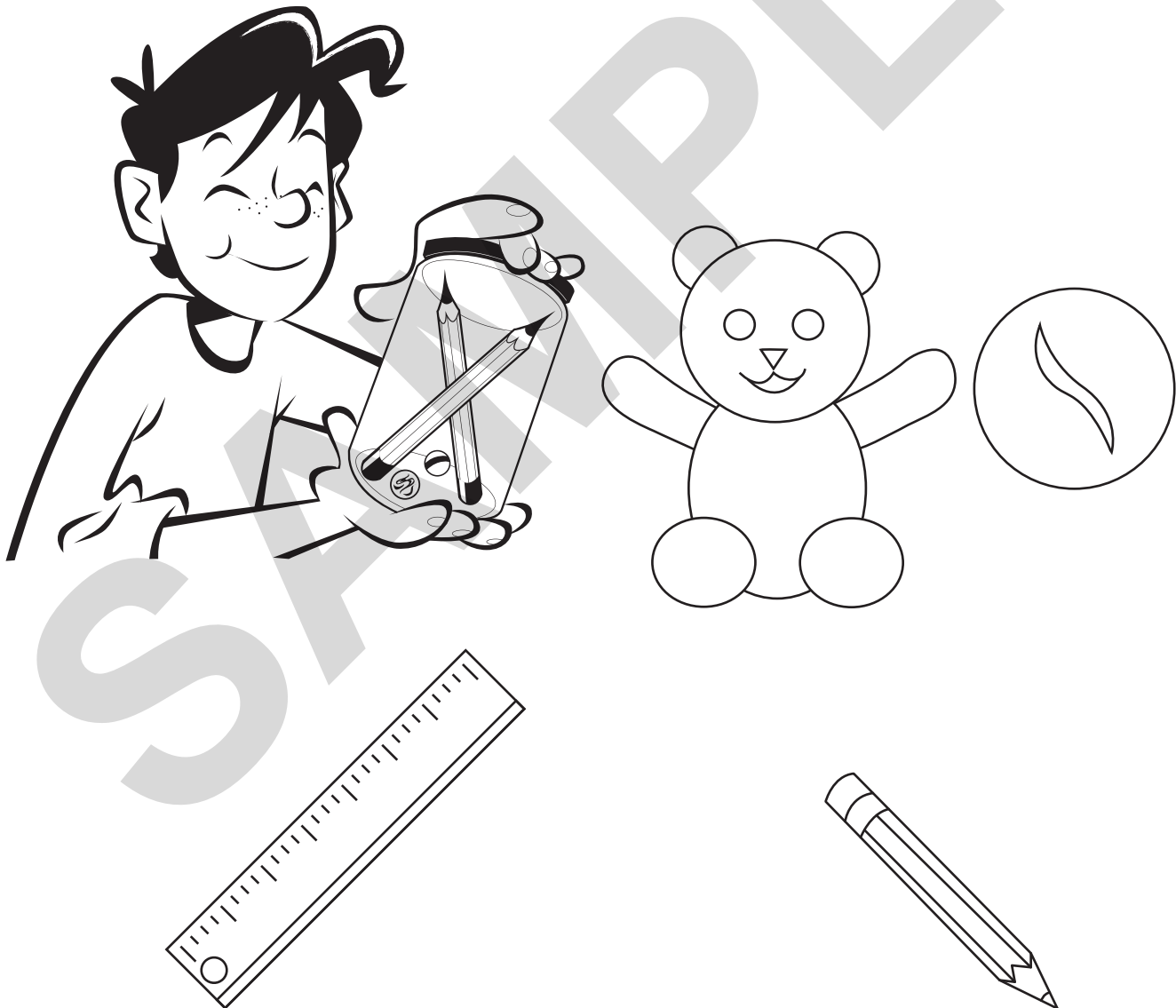
14 Pattern and probability

Practice

4   You need 10 objects, 5 of one colour and 5 of another.

You could use counters, marbles or other small items.

Put them all in a container.

Without looking, take an object out of the container.

Take a second object.

What did you get?

_____

Take two more objects. Do you always get the same?

_____

Write or draw what you did and what you found out.

Predict and describe the results if the experiment was repeated.
Would they be the same or different? Give your reasons.

_____

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14.1 Pattern and probability

5 Using a pencil, hold a paper clip at the centre of the spinner.

Spin the paper clip. What number does it land on?
Is the number odd or even? Spin the paper clip 10 times.

Colour the chart to show your results.

Which did you land on the most, odd or even numbers?
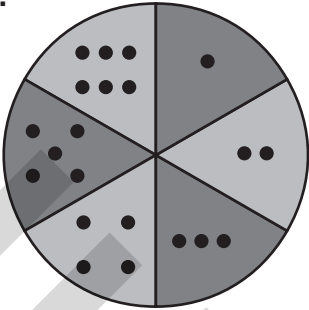
Odd	Even

What did you notice?

_____

You could do this again and see if your results are the same.

6 A repeating pattern uses black, white and grey objects.

Draw two possible patterns.

Challenge

7 Make 2 different regular patterns using 3 different colours.

Draw a random sequence using the same colours as before.

Where would you see a regular pattern?

_____

Where would you see a random sequence?

_____

8 You will need a small square of paper or card.

Draw a cross on one side and leave the other side blank.

Hold the paper at arms length and let it drop to the ground.

Which side is showing?

_____

Do this 10 times.

Record the results in the table using tally marks.

Cross	
No cross	

Do it 10 times again. Do you get the same results? Why?

_____

_____

9 Describe the sequence.

_____

_____

_____
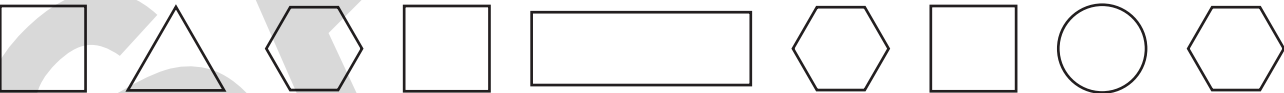
15 ▶ Symmetry, position and movement

❯ 15.1 Symmetry, position and movement

Exercise 15.1

Focus

> anticlockwise   clockwise
> equivalent   mirror line
> reflection   reverse

Worked example 1

Use the mirror line to make a symmetrical picture.
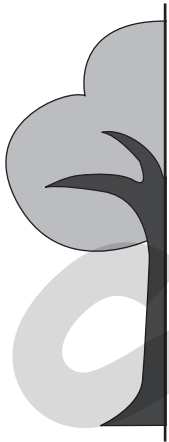
Continued

How do you know it's symmetrical?

I draw some of the shape. Then I use a mirror to check that it is symmetrical.

1   Use the mirror line to make a symmetrical picture.

We are working with Cambridge Assessment International Education towards endorsement of this title.
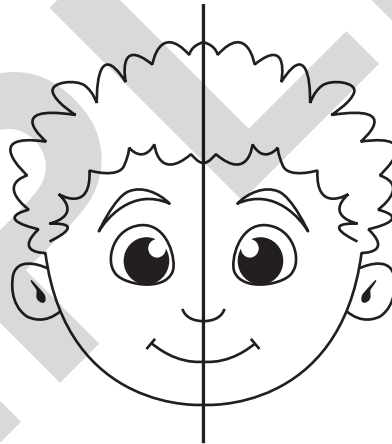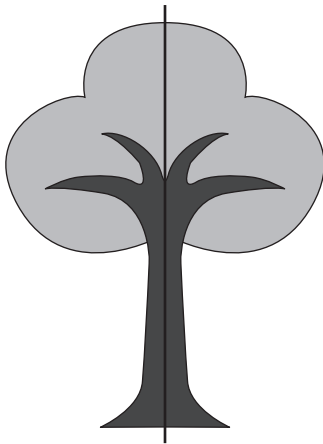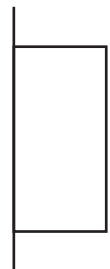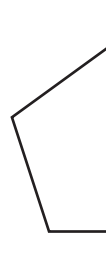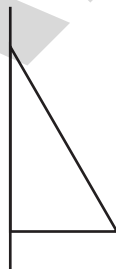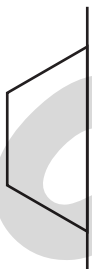
15 Symmetry, position and movement

2   Look at each shape.

Tick what it will look like when it has turned clockwise
one quarter turn:

a
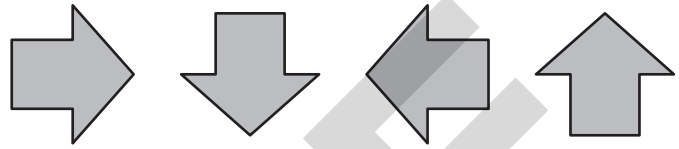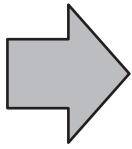
b
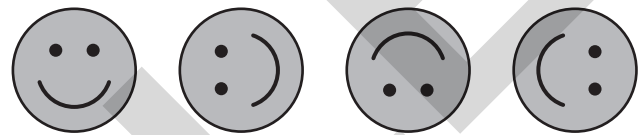
3   The minute hand makes these turns. It starts at 12.

What number does it stop on?

a
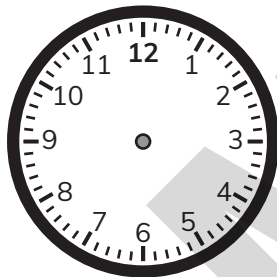
Half a turn anticlockwise

b
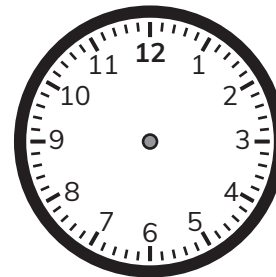
Half a turn clockwise

c
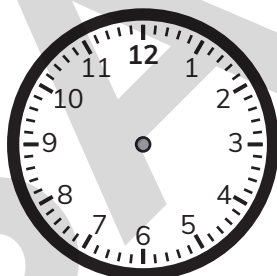
1 quarter turn clockwise

d

1 quarter turn anticlockwise
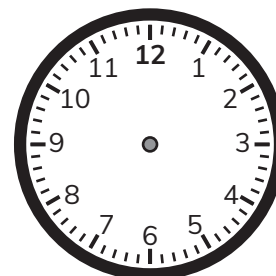
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15.1 Symmetry, position and movement

Practice

4 Draw more than one 4-sided shape that has a vertical line of symmetry.

5 Look at each shape.

Tick what it will look like when it has turned clockwise one half turn.

a

b

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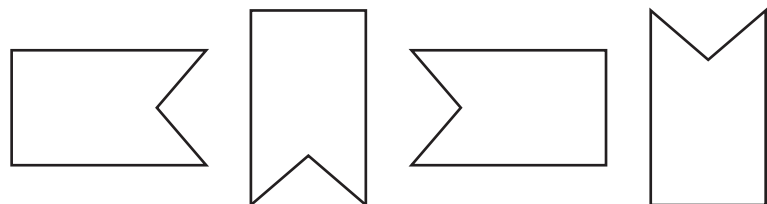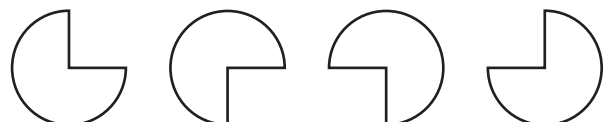
15 Symmetry, position and movement

6 The minute hand makes these turns. It starts at 12.

What number does it stop on? Draw the hand on each clock.

Colour the matching clocks that show the same number.

Did they have the same instruction?
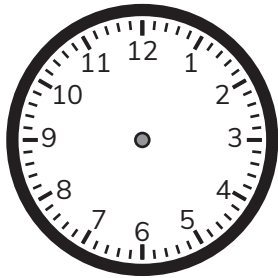
A whole turn clockwise
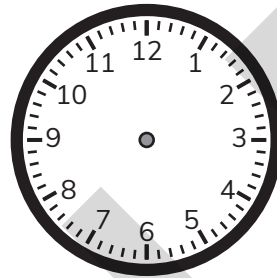
Half a turn clockwise
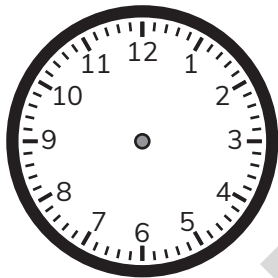
Half a turn anticlockwise
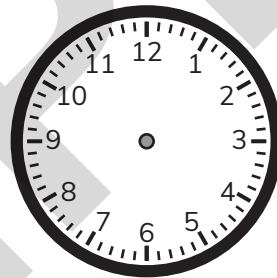
A quarter turn clockwise

A quarter turn anticlockwise
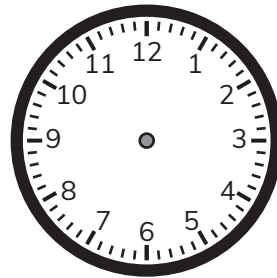
A whole turn anticlockwise

Challenge

7   Draw a mirror line on these shapes.
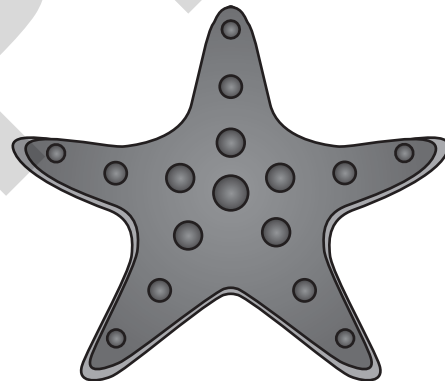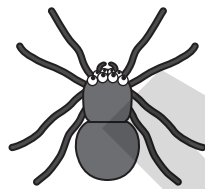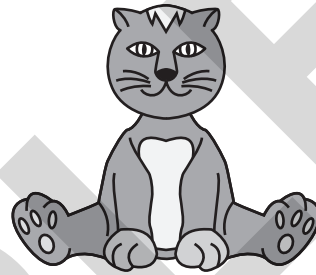
Draw 2 pictures of your own and show the mirror lines.

8   Draw what you think these shapes will look like
    when they have turned.

Anticlockwise a quarter turn
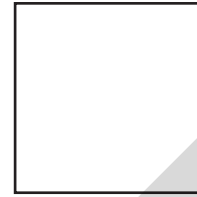
Clockwise a quarter turn
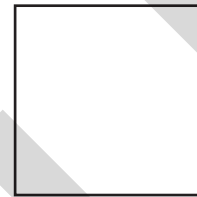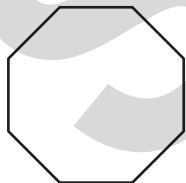
What do you notice?
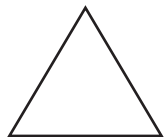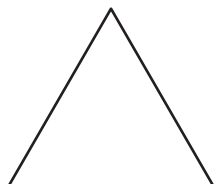
Clockwise a half turn
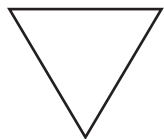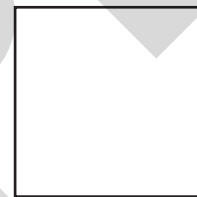
Anticlockwise a half turn
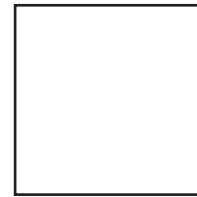
What do you notice?
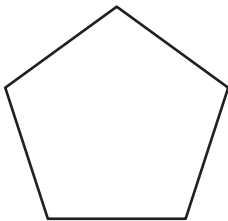
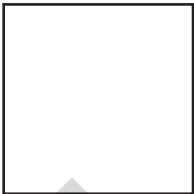9   Draw each shape after a quarter turn clockwise.
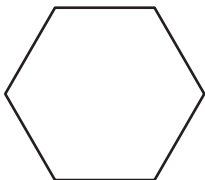
Clockwise a quarter turn

Clockwise a quarter turn

Clockwise a quarter turn
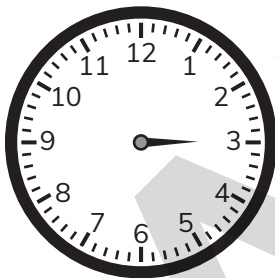
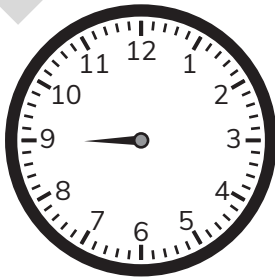Clockwise a quarter turn

Clockwise a quarter turn

10 The minute hand makes these turns. It starts at 12.

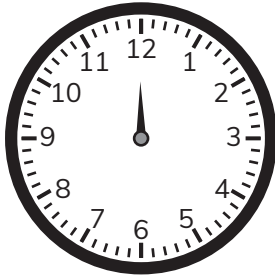Write 2 different descriptions for how the minute hand moved on each clock.

a

b

c

d

⟩ Acknowledgements