
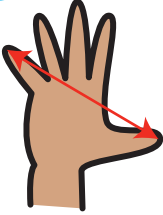



Informal units

- 1 Find the length of a tote tray using the following informal units.
Answers will vary.

Counters	Hand spans	Popsticks
<input type="text"/> counters 	<input type="text"/> hand spans 	<input type="text"/> popsticks 

Why did you get different answers for each of the units used?

The units are all different sizes.

- 2 Find three objects that you estimate to be less than 10 counters long. Measure them and record their length in counters.

Object	Length
<i>Answers will vary.</i>	

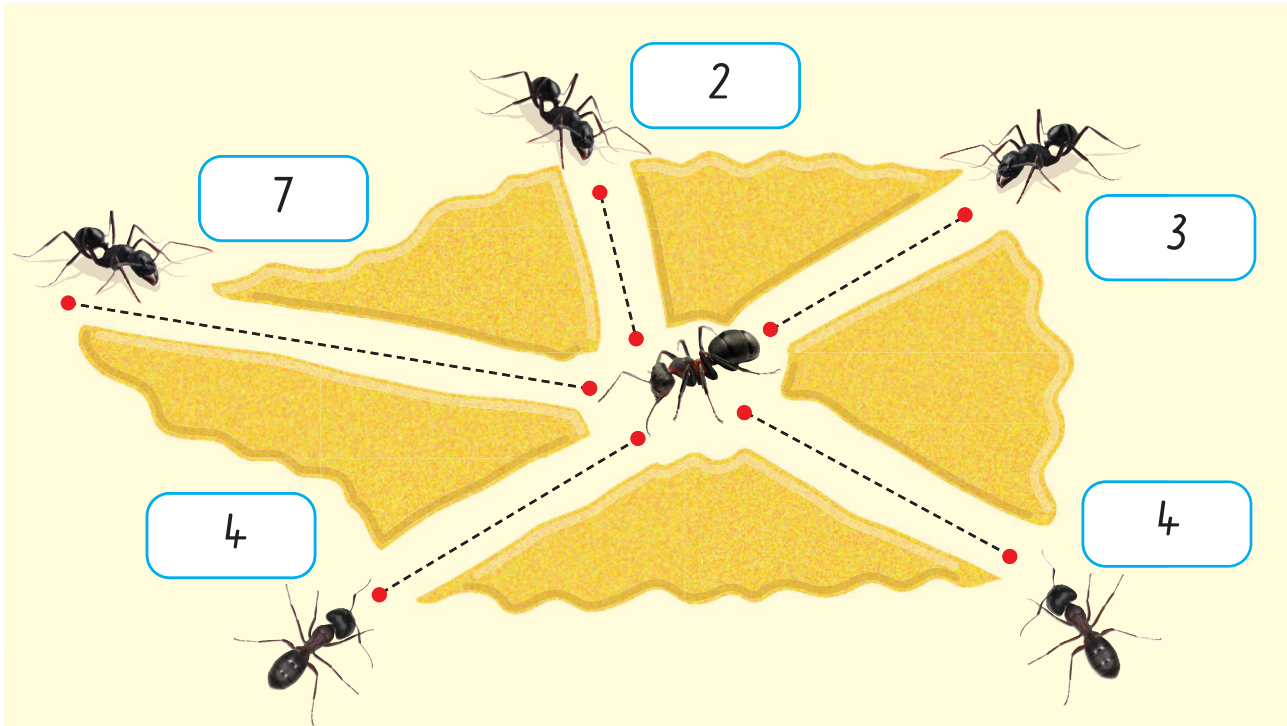
Find someone who measured one of the same objects as you. Did you get the same answer? Why? How is using counters better than using hands or feet?



Find an object that is between 3 hand spans long and 5 hand spans long.

Measuring distance

- 1 Use Base 10 ones to measure the distance each ant has to travel to the queen ant's chamber.



- a What was the longest distance travelled? **7 ones**
- b What was the shortest distance travelled? **2 ones**

- 2 Work with a partner. Use Base 10 longs to measure the distance you can jump.

Use your Base 10 longs to measure by placing them end-to-end and counting by 10s.

Answers will vary.




Jump	My results	My partner's result
Start on both feet together	<input type="text"/> longs	<input type="text"/> longs
Take a short run off	<input type="text"/> longs	<input type="text"/> longs
Crouch down and push off to start	<input type="text"/> longs	<input type="text"/> longs

MiB 1
Cards
95 & 96

What's wrong with feet?

- 1** **a** Measure and record the length of these objects using your teacher's foot and your foot.

Answers will vary.

	Blackboard	Student desk	Keyboard
			
Your teacher's foot	<input type="text"/> feet	<input type="text"/> feet	<input type="text"/> feet
Your foot	<input type="text"/> feet	<input type="text"/> feet	<input type="text"/> feet

- b** Compare the results. Did you get the same answers for your teacher's foot and your foot? No.

Why or why not? Different sized feet.

Discuss why it is important to have a standard unit to measure length.

- 2** Measure and cut a piece of string that is the same length as 10 Base 10 longs.

Is your string the same length as others in your class? Yes.

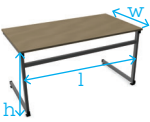
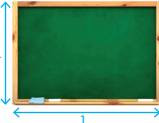

Why or why not? Each set of 10 longs is the same length.

Describe what would happen if two people worked together to build a house and both used a different-sized unit to measure.

What's a metre?

- 1 Measure each object using a one-metre length of string. Tick whether the object is less than 1 metre, about 1 metre or more than 1 metre.

Answers will vary.

		Less than 1 metre	About 1 metre	More than 1 metre
a 	Length of your desk			
	Height of your desk			
	Width of your desk			
b 	Length of the board			
	Height of the board			
c 	Length of a cupboard			
	Height of a cupboard			
	Width of a cupboard			

- 2 Name three objects in the classroom that are about 1 metre long.
- _____

- 3 Look at the objects below. Circle the objects that are about 1 metre. Tick the objects that are less than 1 metre. Cross the objects that are more than 1 metre.



MiB 1
Card
98

Half a metre action

- 1 Cut a 1-metre long piece of string. Fold it in half. Cut the string at the fold. **Each piece is half-a-metre long.** Use your measure to find and name three objects that are about half-a-metre long.

Answers will vary.

- 2 Find objects or distances at your school that are about the same as each of these lengths.

Half a metre is the same as 50 centimetres.

a $\frac{1}{2}$ metre

Answers will vary.

b 1 metre

c 2 metres

d 5 metres

e 10 metres

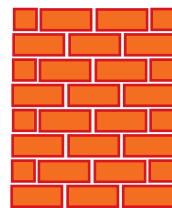
- 3 If the shortest wall is $\frac{1}{2}$ metre high, how high are the other walls?



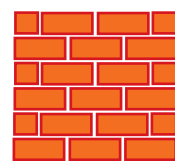
$\frac{1}{2}$ metre



1 metre



2 metres



$1\frac{1}{2}$ metres

Throwing the distance

- 1** Work with a partner. Each of you throws a straw like a javelin. Measure how far each straw went. Record how far each straw went in the table below.

You will need a 1 metre-long piece of string and two straws.

	Closer to half a metre	Closer to 1 metre
Me	<i>Answers will vary.</i>	
My partner		



If two students threw their straws close to one metre, would you know who threw the furthest? Why not?
What is needed to help your measurement be more exact?

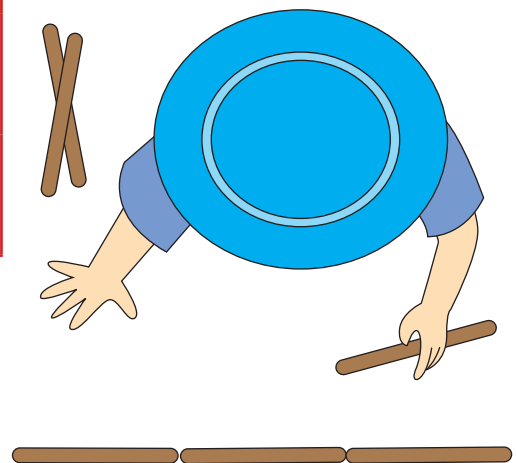
- 2** Work with your partner and throw the straws again. Count the number of popsticks needed to measure each distance.

You will need some popsticks and two straws.

	Number of popsticks
Me	<i>Answers will vary.</i>
My partner	



Was it easier to measure the distance with a smaller unit? Why or why not?



Introducing centimetres

1 How long is each item in centimetres?



a



8

centimetres



b



3

centimetres



c



10

centimetres



d



6

centimetres

2 Find, trace and label an object that is more than 5 centimetres long but less than 10 centimetres long.

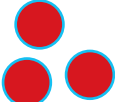
Answers will vary.




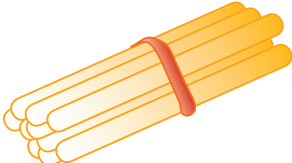
When recording measurements you should record the unit as well as the number. The abbreviation for centimetre is cm.

Finding area

1 Find the area of your maths book by covering it with:

counters.  counters

square blocks.  squares

popsticks.  popsticks

Answers will vary.

Which unit was the best to measure with? _____

Why? _____

2 Think about the area of the following objects. Draw a line to match each object to a description of its area.

Area is the size of a surface.

Area is **smaller** than my maths book.



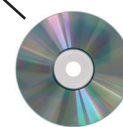
chalkboard



leaf



bookmark



CD



window



ticket



boogie board



flipper

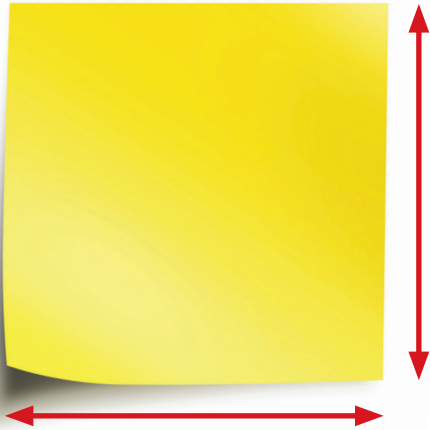
Area is **larger** than my maths book.

MiB 1
Card
99

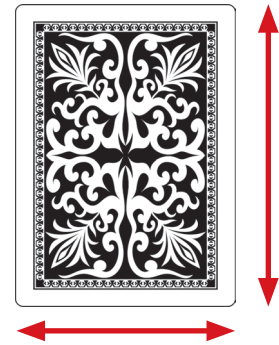
Covering area

1 Estimate, then measure, the number of Base 10 units needed to cover the picture of each object.

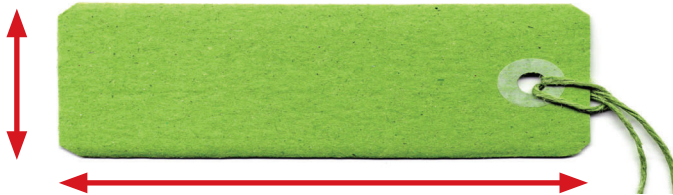
a Paper



b Card



c Bookmark



d Stamp



	Item	Estimate	Actual
a	Paper	<i>Answers will vary.</i>	25
b	Card		12
c	Bookmark		14
d	Stamp		6

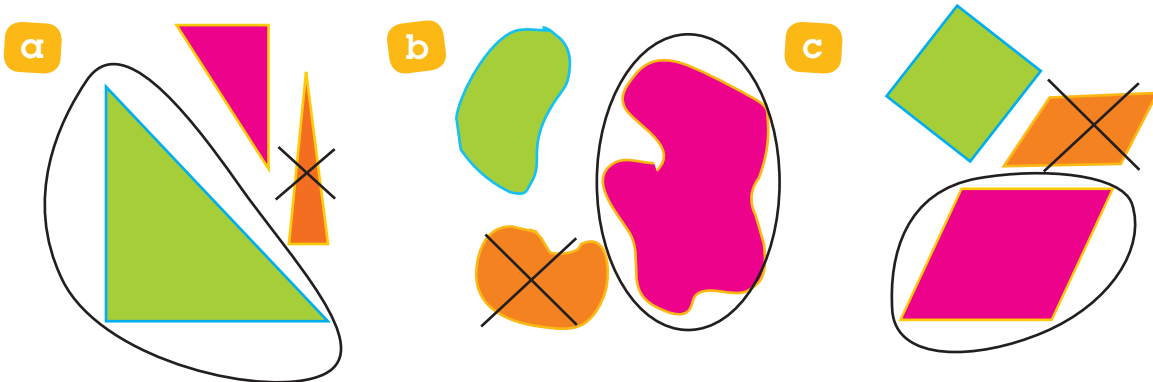
2 Order the pictures above from smallest area to largest area.

Smallest Largest

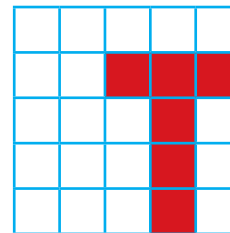
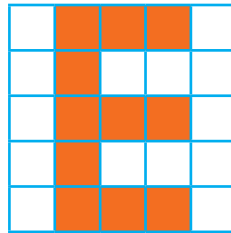
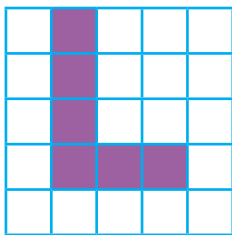
stamp card bookmark paper

What's in a letter?

1 Look at each group of shapes. Circle the shape with the greatest area. Cross the shape with the smallest area.



2 Make these letters on a geoboard or grid paper. Count the squares to find the area of each letter.



a squares b squares c squares

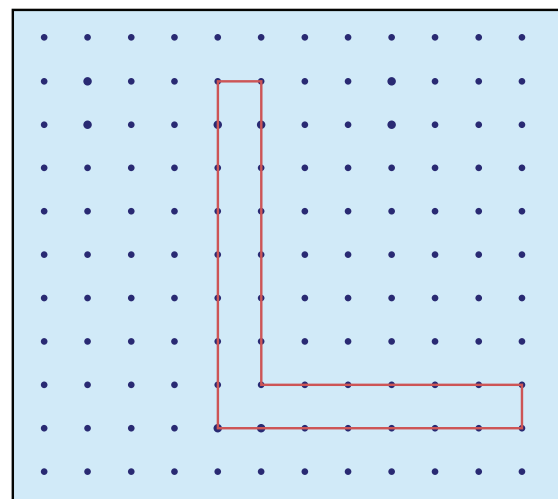
d Which letter had the greatest area? E

3 Make the following letters on a geoboard.

a T with an area of 8 squares.

b L with an area of 7 squares.

c L with an area of 14 squares.



Make your initials on a geoboard.
Find the total area of your initials.

Base area

1 Trace around the base of each object on the grid below to find the area of its base.

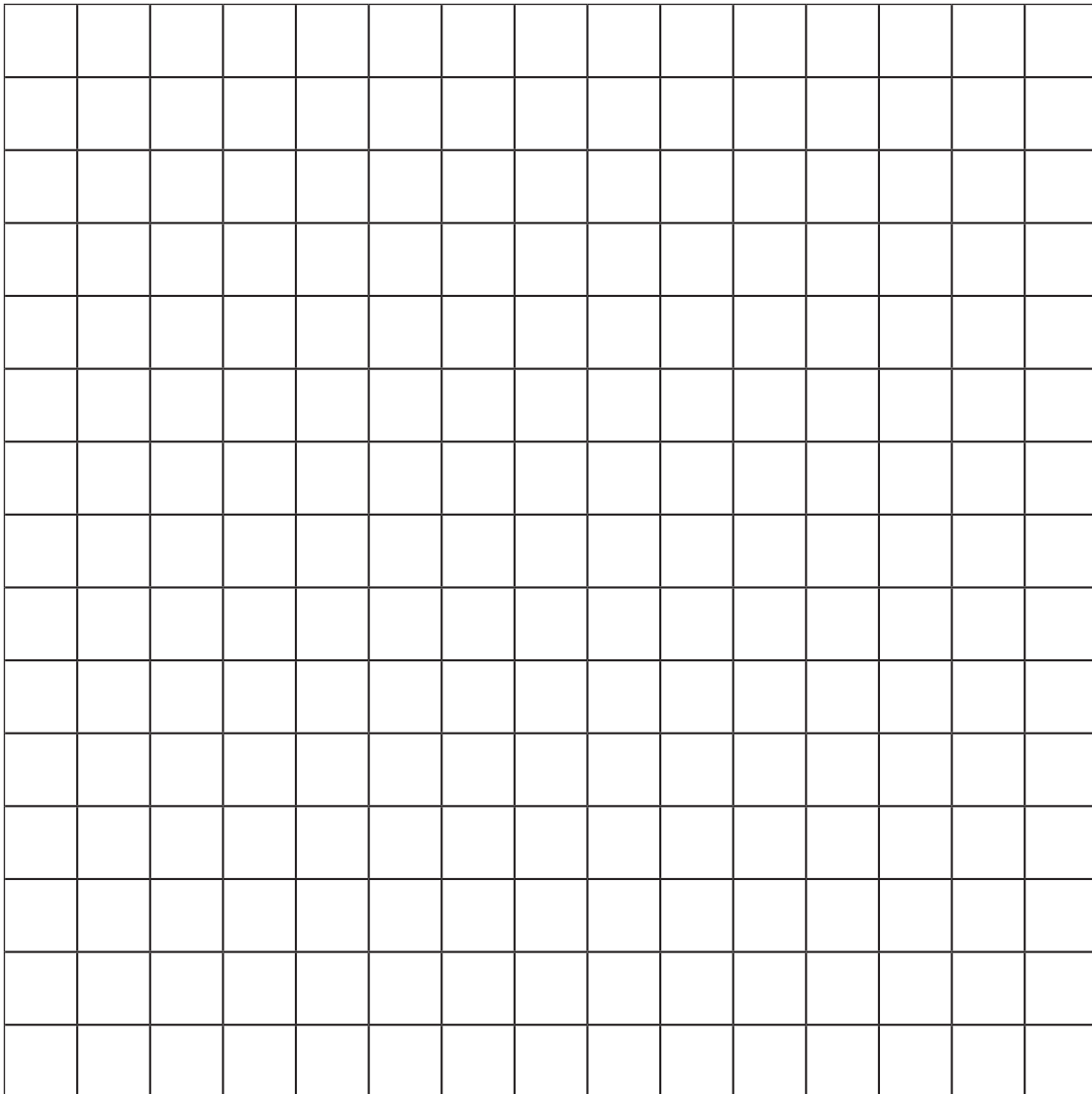


Answers
will vary.

squares part squares



squares part squares



2 Find an object with a base that is smaller than the sharpener.

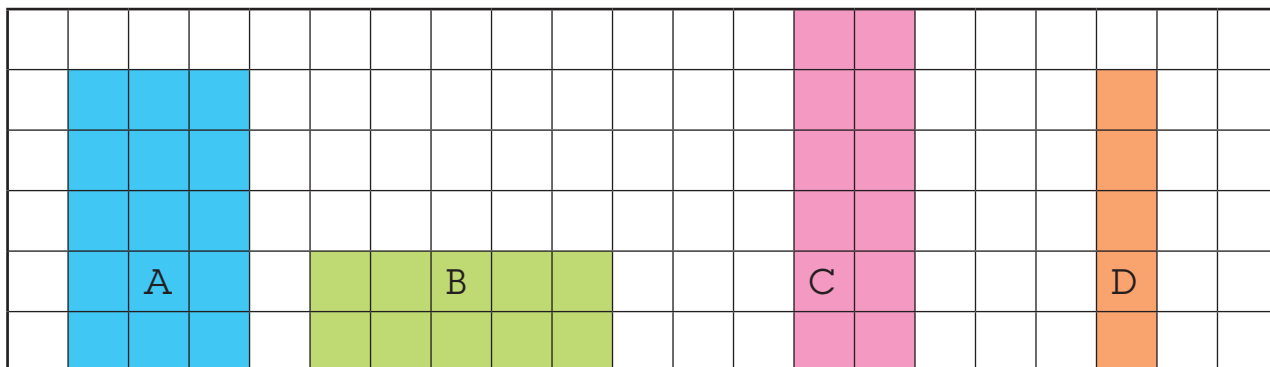
Trace its base.
What is its area?



Explain to a friend why it is important to count the part squares as well as the whole squares when measuring area.

Area of shapes

1 Look at the shapes and answer the questions below.



a How many squares tall is each shape?

A B C D

b How many squares wide is each shape?

A B C D

2 Use addition to find the area of each shape.

A $3 + 3 + 3 + 3 + 3 =$ squares

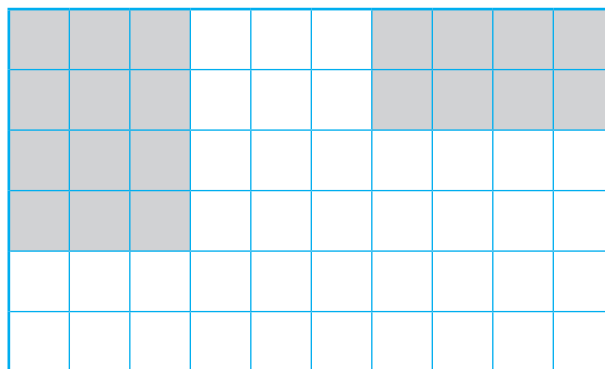
B + = squares

C + + + +
+ = squares

D + + + +
= squares

3 Which shape has the larger area: a shape 4 squares tall and 3 squares wide or a shape that is 2 squares tall and 4 squares wide? Draw each shape to find out.

4 squares tall and 3 squares wide



MiB 1
Card
100

Patchwork area

1 Lena, Josie and Maky made the quilts below. What is the area of each quilt?


a  15 squares

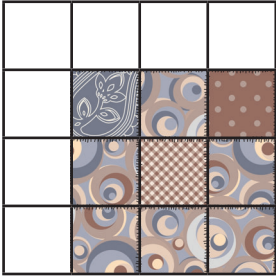
b  16 squares

c  8 squares

Discuss with a friend how you found the total number of squares for each quilt.
Why does the largest quilt have the least number of squares?

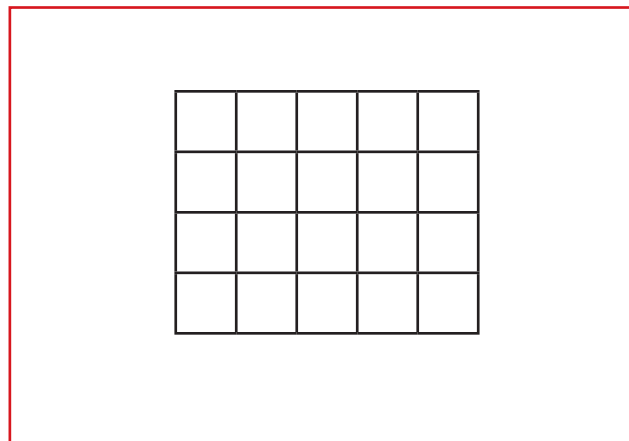
2 How many patches have been used to create each quilt?

a  4 patches

b  9 patches

3 If a quilt has 4 rows of 5 patches, how many patches does it have altogether? Draw it.

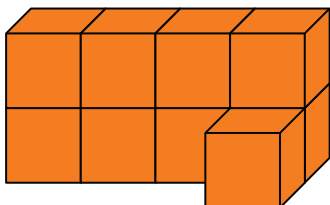
20 patches



Taking up space

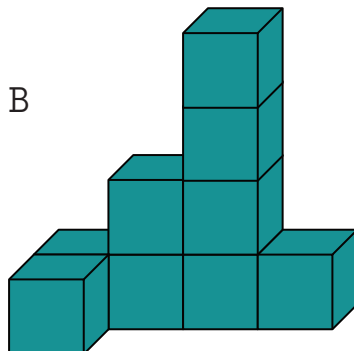
1 Build each of the models below using cubes. Record the number of cubes used to build each model.

A



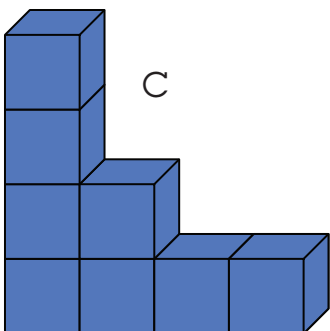
9 cubes

B



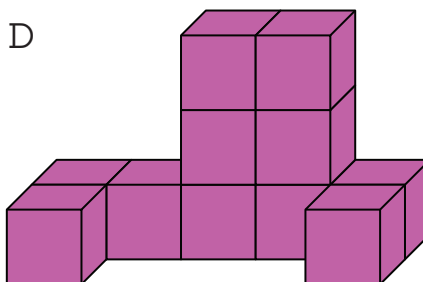
9 cubes

C



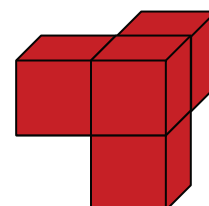
8 cubes

D



11 cubes

E



4 cubes

Volume is the amount of space something takes up. For example, this brick wall takes up 4 bricks worth of space.

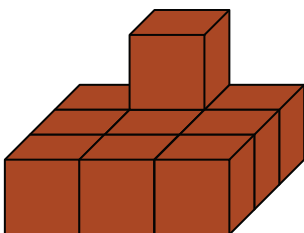


a Which model has the smallest volume? E

b Which model has the largest volume? D

2 Raji made the model below with a volume of 10 cubes. Build a different model with a volume of 10 cubes.

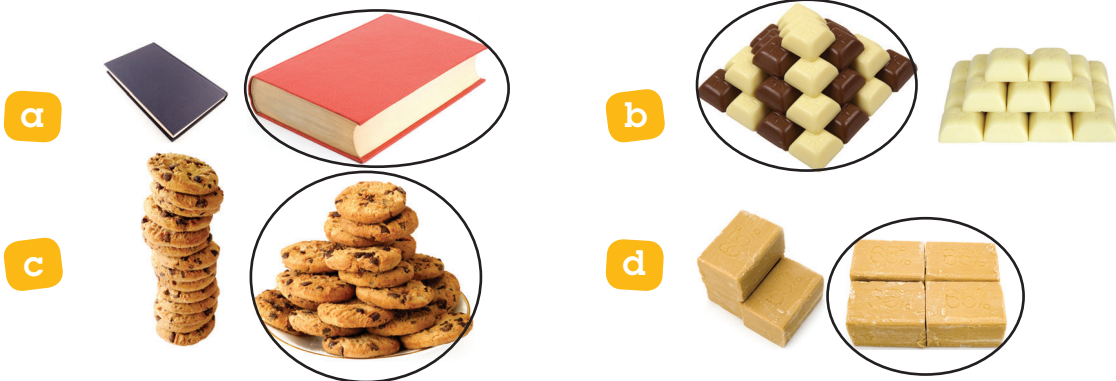
Answers will vary.



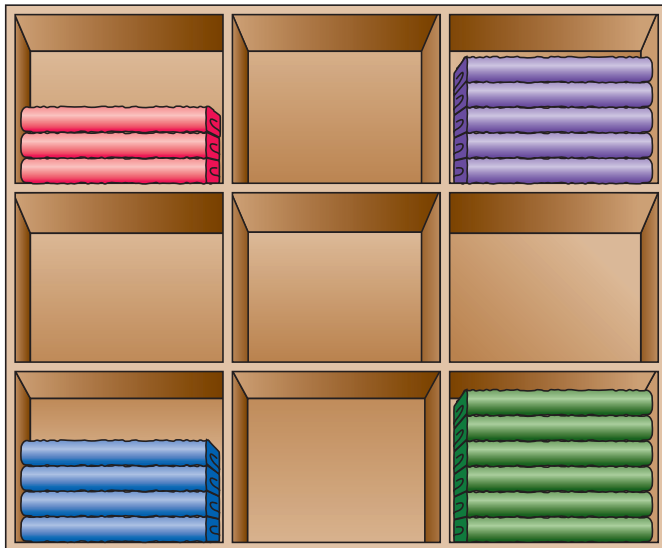
Compare your model with a friend's. How are they the same? How are they different?

Space taken up

1 Circle the object in each pair that has the larger volume.



2 Towels of the same size have been neatly packed on the shelves according to their colour.



a Which group of coloured towels is taking up the most space?

Green

b Which group of coloured towels is taking up the least space?

Red

c How much more space are the purple towels taking up than the pink towels?

2 towels

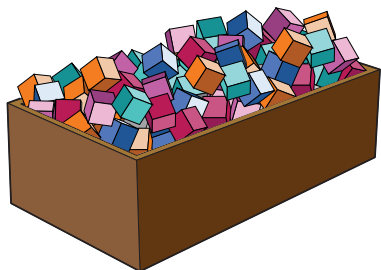


How could you place the towels on the 9 shelves so that each shelf has the same volume of towels?

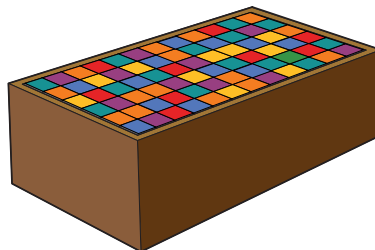
Filling containers

- 1 Count the number of Base 10 longs needed to fill a shoebox by dumping and then by layering.

Dumping



Layering



To dump: Place handfuls of longs into the shoebox without taking care.

To layer: Neatly place the longs in the shoebox. Cover the base before covering the remaining layers in the same way.

Answers will vary.

- a Dumping: The shoe box has a capacity of longs.
- b Layering: The shoe box has a capacity of longs.
- c Which way is best for measuring capacity? Why?

Layering; it fills the box up with no gaps or overflow

- 2 Measure the capacity of these containers using layers of Base 10 longs.



Answers will vary.






- a There are longs in each layer.
- There are layers.
- layers of
- is longs.
- b There are longs in each layer.
- There are layers.
- layers of
- is longs.


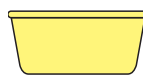

MiB 1
Card
109

Measuring with cups

- 1 Use cups of sand or rice to estimate the capacity of each container. Then measure the actual capacity of each container.

Container	Estimate	Actual measurement
Mug 	<i>Answers will vary.</i>	
Bucket 		
Milk carton 		

- 2 Use tally marks to show the number of cups of water needed to fill each container.

	Tally marks	Total
Ice-cream container 	<i>Answers will vary.</i>	
Tote tray 		
Bucket 		

- 3 a What would happen if the full bucket of water was poured into the empty tote tray?

All of the water would fit.

- b What would happen if the full bucket of water was poured into the empty ice-cream container?

It would overflow.

Explain your predictions for Question 3.

Displacement

Displacement: When an object is placed into water it adds its own space (volume) and the water rises.

1 Follow these instructions on how to use water level to show volume:

- Choose a large clear container.
- Half fill the container with water .
- Mark the water level.
- Place 5 marbles into the water.
- Mark the new water level.



a Why do you think the water level has changed?

The marbles take up space that used to contain water.

b What will happen to the water level if you put in 10 marbles?

It will rise

Check your answer by doing it.

2 Using the above procedure, circle the set of objects in each pair that has the larger volume.



a / rock / ball playdough

b 3 marbles

4 bolts



c / golf ball 3 marbles

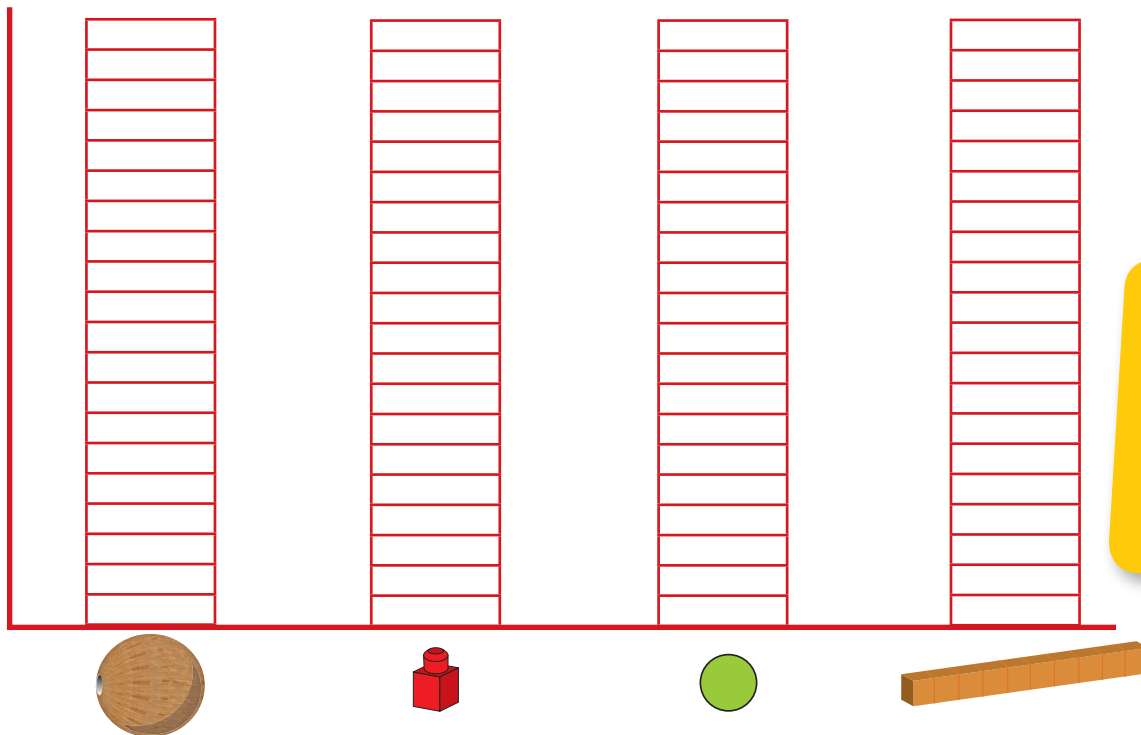
d 4 stones

6 nuts

Estimate and mark the level of water needed in a clear container so that when a large rock is placed in it, the water rises to the rim exactly.

Comparing units

- 1 Use an equal arm balance to measure the mass of an empty pencil tin using beads, blocks, counters and Base 10 longs.



If 10 beads balanced the pencil tin, colour 10 rectangles on the graph.

- a How many of each unit balanced the pencil tin?

beads blocks
 counters Base 10 longs

Answers will vary.

- b Which unit did you need the most of? _____

- c Which unit did you need the least of? _____

- d How many more counters did you need than longs?

- 2 Why did you need more counters than longs?

Counters weigh less than longs.

- 3 What is the disadvantage of measuring with different units?

You can combine them in different ways.

so it's hard to get a single answer.

Comparing mass

1 Find the objects that are pictured. Use an equal arm balance to measure the mass of each object using Base 10 longs.



longs



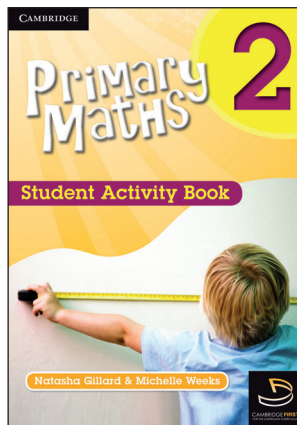
longs



longs



longs



longs



longs

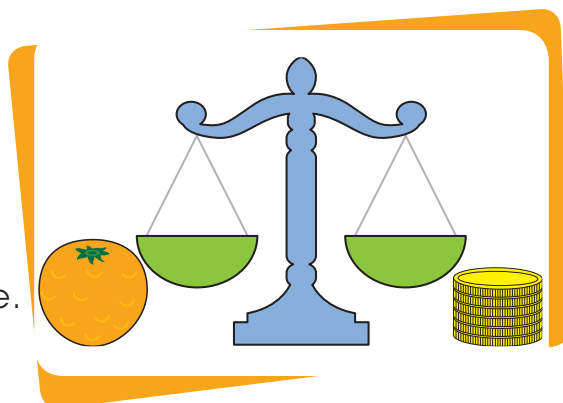
2 Use the results to complete these statements. *Answers will vary.*

- a The pencil case is longs heavier than the _____.
- b The mouse is longs lighter than the _____.
- c The stapler is longs heavier than the _____.
- d The _____ is longs lighter than the _____.
- e The cup and the book together are longs heavier than the mouse.

Conserving mass

- 1 Using a set of scales, measure the mass of an orange by counting the number of counters needed to balance the orange. *Answers will vary.*

counters balance the orange.



- 2 Cut the orange in half and place the halves back on one side of the scales.

Do the same number of counters balance the orange now that it is cut in half? Yes.

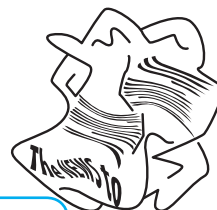
Why do you think this happens?

Two halves have the same mass as the whole.

- 3 Measure the mass of these objects using counters.



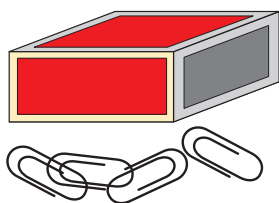
Answers will vary.



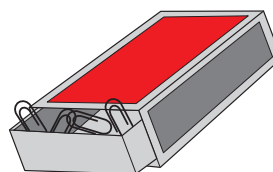
a counters

counters

Do the same number of counters still balance the front page of a newspaper? Yes



Answers will vary.



b counters

counters

Do the same number of counters still balance the paperclips and box? Yes

Make a ball of plasticine that has a mass of 15 longs. Mould the plasticine into a different shape and measure its mass again. What happens?

Mass of collections

- 1 Use an equal arm balance to find which collection is heavier. Circle the heavier collection in each pair.

What needs to happen to this pair to make them balance?

- a 2 nuts or 8 pegs?



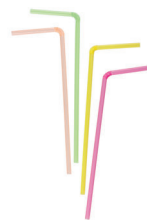
- b 8 paper clips or 4 marbles?



- c 3 rocks or 12 pencils?



- d 4 straws or 1 marble?



- 2 Measure and write the number of marbles needed to balance each collection.

Answers will vary.

- a 2 nuts have the same mass as marbles.



- b 3 rocks have the same mass as marbles.

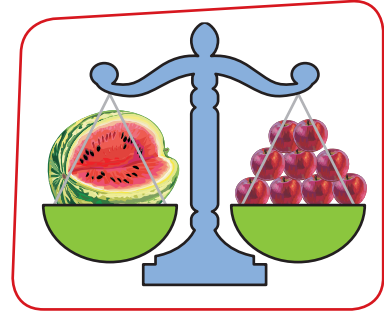
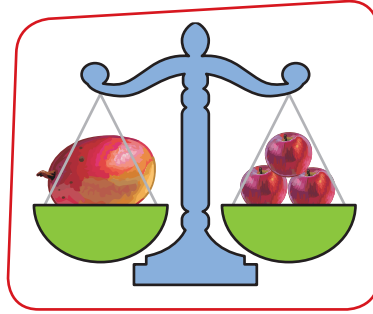
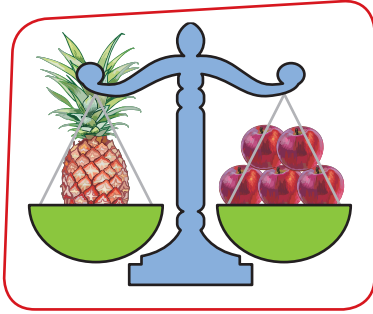


- c 8 pegs have the same mass as marbles.



Fruity balancing

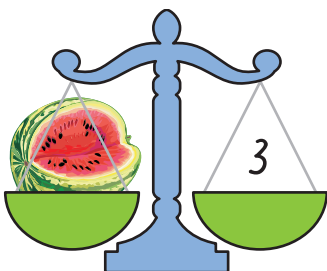
- 1 Jane used apples and an equal arm balance to compare the mass of a pineapple, a mango and a watermelon. Look at the results to complete the statements.



- a The pineapple is the same mass as apples.
- b The watermelon is the same mass as apples.
- c Which fruit is the heaviest? Watermelon
- d Which fruit is the lightest? Mango

- 2
- a The pineapple is apples heavier than the mango.
- b The pineapple is apples lighter than the watermelon.
- c The difference in mass between the heaviest fruit and the lightest fruit is apples.
- d Two pineapples would balance apples.

Use the information above to work out the number of mangoes needed to balance a watermelon on the scales.



How did you work this out?

The seasons

1 Write the missing months for each season.

There are 4 seasons in each year.

Winter is the coldest season, and summer is the hottest.

November

August

September

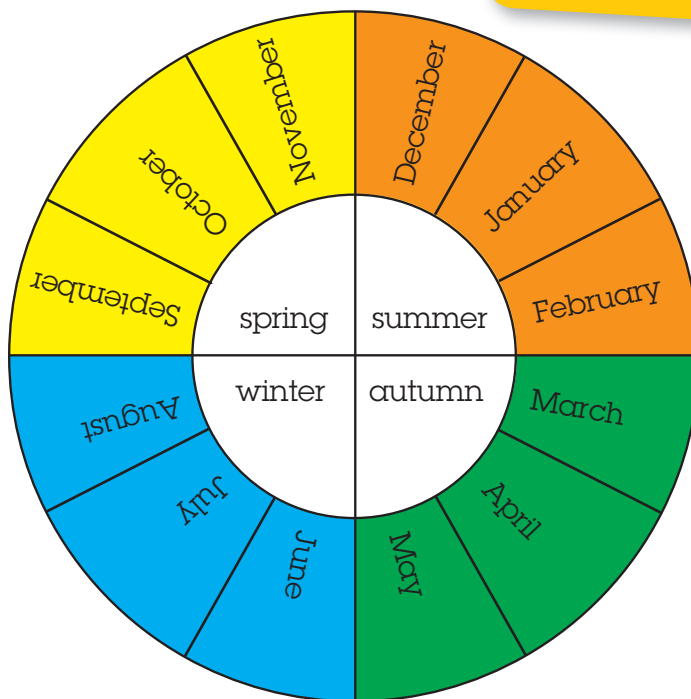
July

February

April

March

January



2 Colour the months of the hottest season **orange**.

Colour the months of the coldest season **blue**.

Colour the months of the 'getting warmer' season **yellow**.

Colour the months of the 'getting cooler' season **green**.

3 In which season is the:

6th month? Winter / 11th month? Spring

What would you be wearing during the:

2nd month? Light clothes / 8th month? Warm clothes

Remember: January is the 1st month of the year.

Which season has the most days?

MIB 1
Cards

115,
116, 117,
118, 119

Reading a calendar

1



a Which months have 30 days? September
April June November

b Which months have 31 days? January
March May July
August December October

c Which month has less than 30 days? February

2

Look at the calendar and write the day for each date.

a 1st January Sunday **b** 8th February Wednesday

c 24th March Saturday **d** The last day of the year Monday

e 1st November Thursday

f The first day of spring Saturday

3

Circle these dates on the calendar.

- a** Last Friday in October
- b** Second Tuesday in June
- c** First Sunday of summer
- d** Your birthday *Answers will vary.*
- e** Australia Day

All in a month

1 Fill out the missing parts on this month's calendar page. *Answers will vary.*

a Title of month

b Days of the week

2 a What is today's day and date? _____

b Place today's date in the correct places above and colour it in red.

c Add the rest of the dates in the correct places on the calendar.

3 How many days from today is it until:

a the weekend?

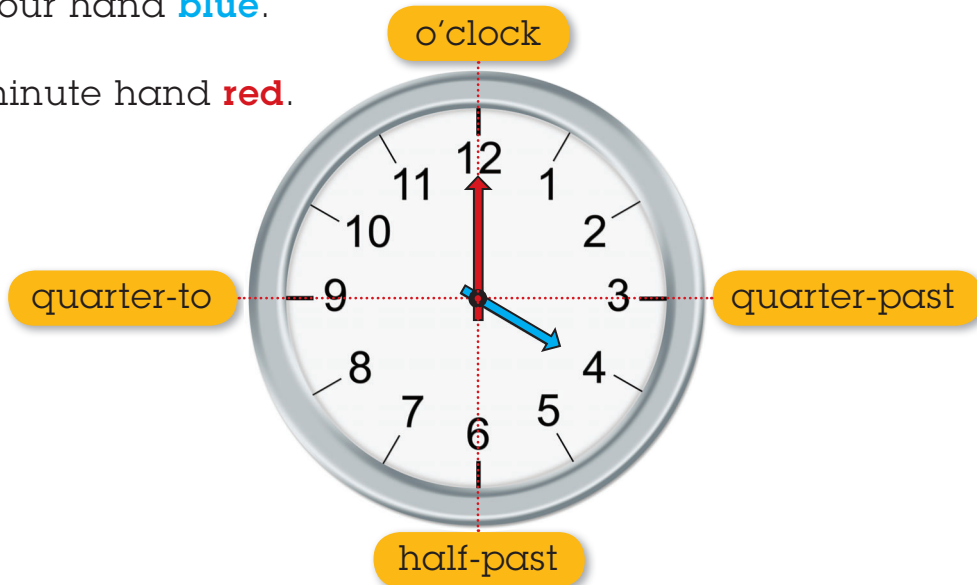
b library day?

c the end of the month?

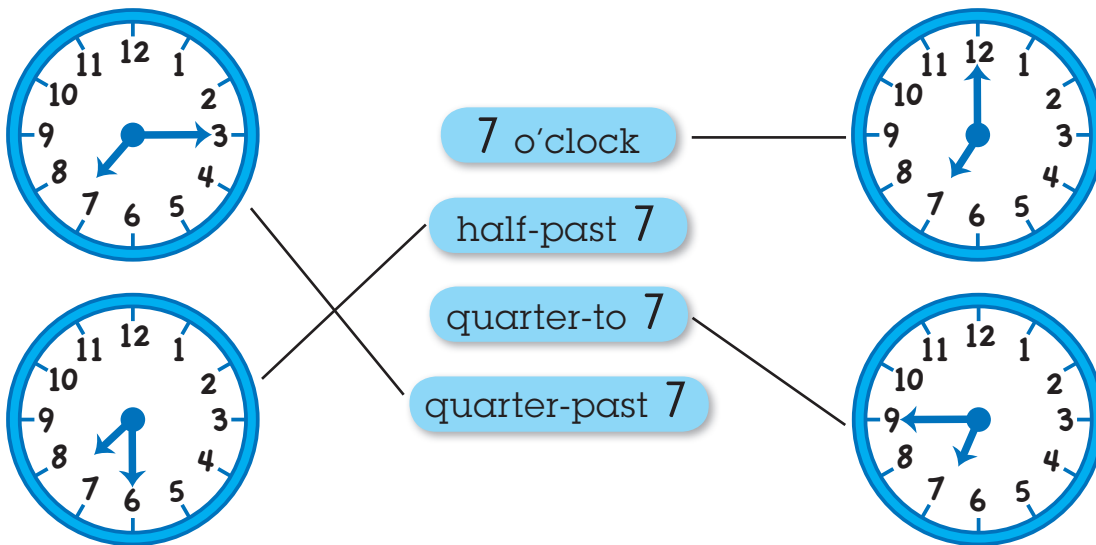
Looking at clocks

1 Colour the hour hand **blue**.

Colour the minute hand **red**.



2 Match the clocks with the correct label.



3 What number on the clock would the minute hand be pointing to if it was:

a 11 o'clock?

12

b half-past 11?

6

c quarter-past 11?

3


d quarter-to 11?

9

Half-past

1 Colour two ways to say the time shown on each clock.

a




Half-past 4

6 past 4

Four thirty

4 o'clock

b



11 past 6

Half-past 11

Thirty minutes past 11

Half-past 10

c



7 thirty

6 thirty

6 past 7

Half-past 7

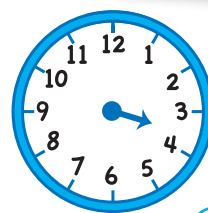
2 George's clocks have lost their minute hands. He can still read the time using the hour hand.

Write the time for each clock.

The hour hand is halfway between 2 and 3, so it's half-past 2.



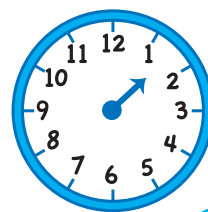
a Half-past



b Half-past



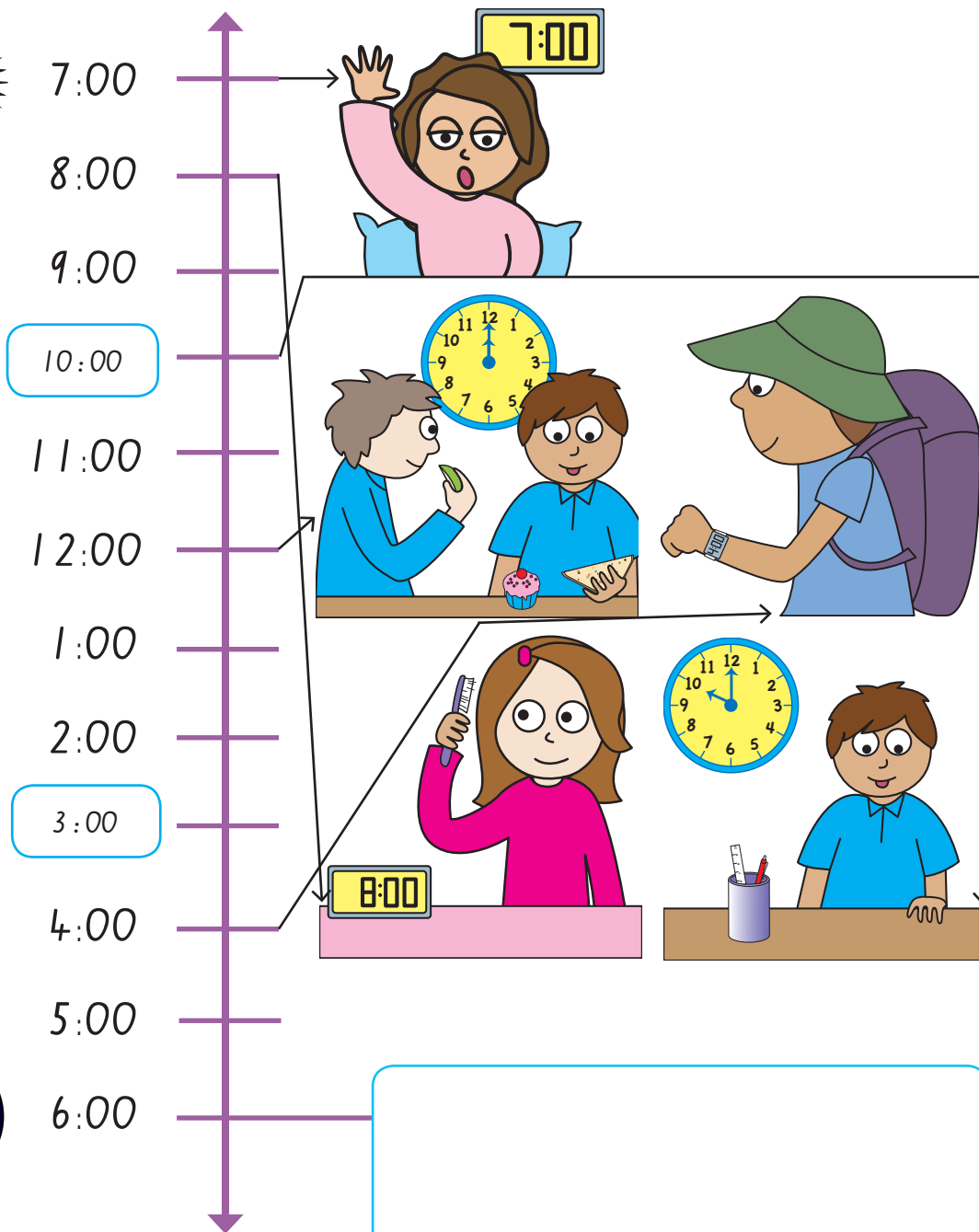
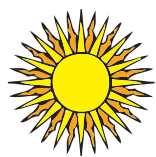
c Half-past



d Half-past

All in a day

1 Complete the times on the timeline. Match each event to a place on the timeline.



2 Draw a picture of an event that could happen at 6 o'clock.

Answers will vary.



Create a timeline for your own day from 7 o'clock in the morning till 6 o'clock at night.

What's the time?

1 Match the digital times to an analog clock.

Analog Clock 1: 7:30
 Analog Clock 2: 3:30
 Analog Clock 3: 9:00
 Analog Clock 4: 12:30
 Analog Clock 5: 2:00
 Analog Clock 6: 6:00



2 Complete the missing times.

Analog Clock 1: 11:00
 Analog Clock 2: 08:30
 Analog Clock 3: 11:30
 Analog Clock 4: 4:00
 Analog Clock 5: 1:30
 Analog Clock 6: 11:00
 Analog Clock 7: 05:30
 Analog Clock 8: 10:30

MiB 1
Cards
122, 123

One hour after

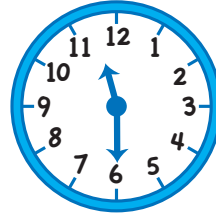
1 Write the time that is one hour after the time shown.



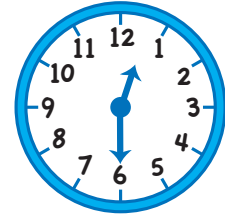
5 o'clock



8 o'clock



Half-past 12



Half-past 1

2 Draw hour and minute hands to show **one hour after** the time written under the clocks.



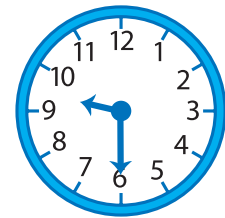
3 o'clock



10 o'clock



Half-past 6



Half-past 8

3 Solve these time problems.

a Rosa had an appointment to see the doctor at 1 o'clock, but the doctor was running an hour late. What time did she see the doctor?

2 o'clock

b Dante finished school at 3:30. It took him an hour to walk home. What time did he arrive home?

4:30

c Kiah took one hour to do her homework. She started it at 4 o'clock. What time did she finish her homework?

5 o'clock

d Velko ate his dinner one hour after getting home from work. He arrived home at half-past 5. What time did he eat?

half-past six