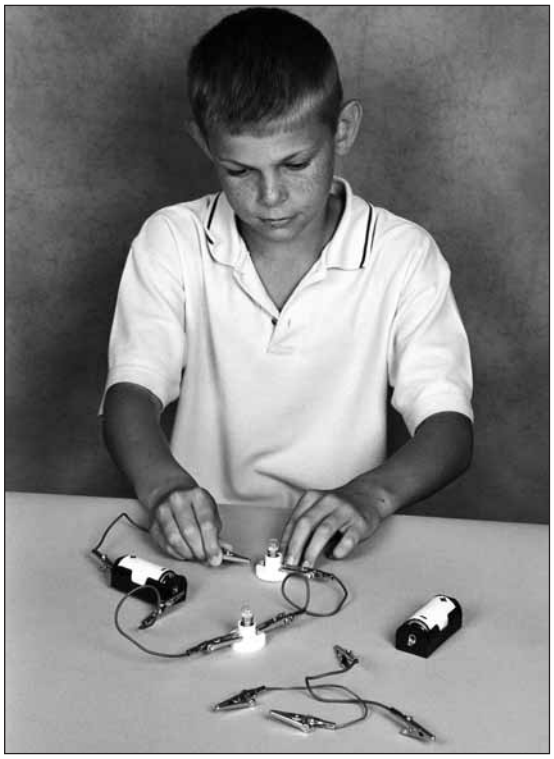
SCIENCE

KEY STAGE 2 2005

TEST A

LEVELS 3–5

PAGE	MARKS
5	
7	
9	
11	
13	
15	
17	
19	
20	
TOTAL	



TEST A

First Name	
Last Name	
School	

INSTRUCTIONS

Read this carefully.

You have **45 minutes** for this test.

Answers

This shows where you will need to put your answer.

For some questions you may need to draw an answer instead of writing one.

Some questions may have a box like this for you to write down your thoughts and ideas.

1 Pond dipping

(a) Abdi is collecting some living things from a pond. He pulls a net through the water.

Describe how the net separates the water and pond life.

.....

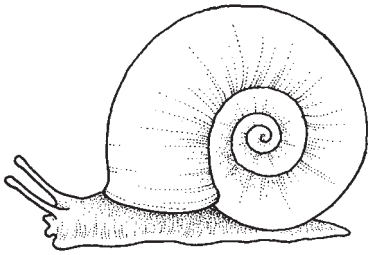
.....

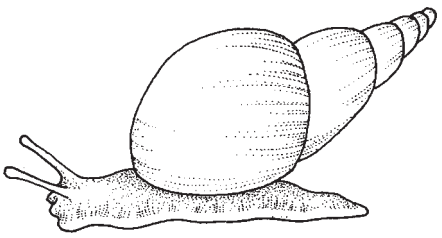
1a

1 mark

(b) Abdi empties the net into a container of water. He decides to sort the animals he collected into groups.

Abdi puts these two animals into the same group.





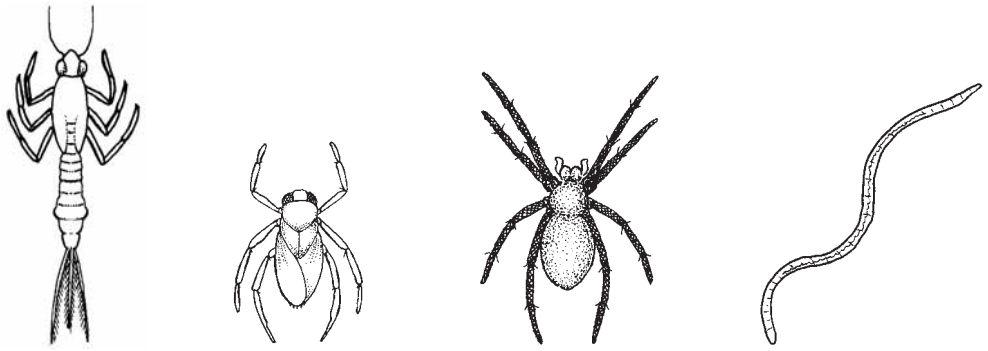
Describe **ONE** feature that both these animals have.

.....

1b

1 mark

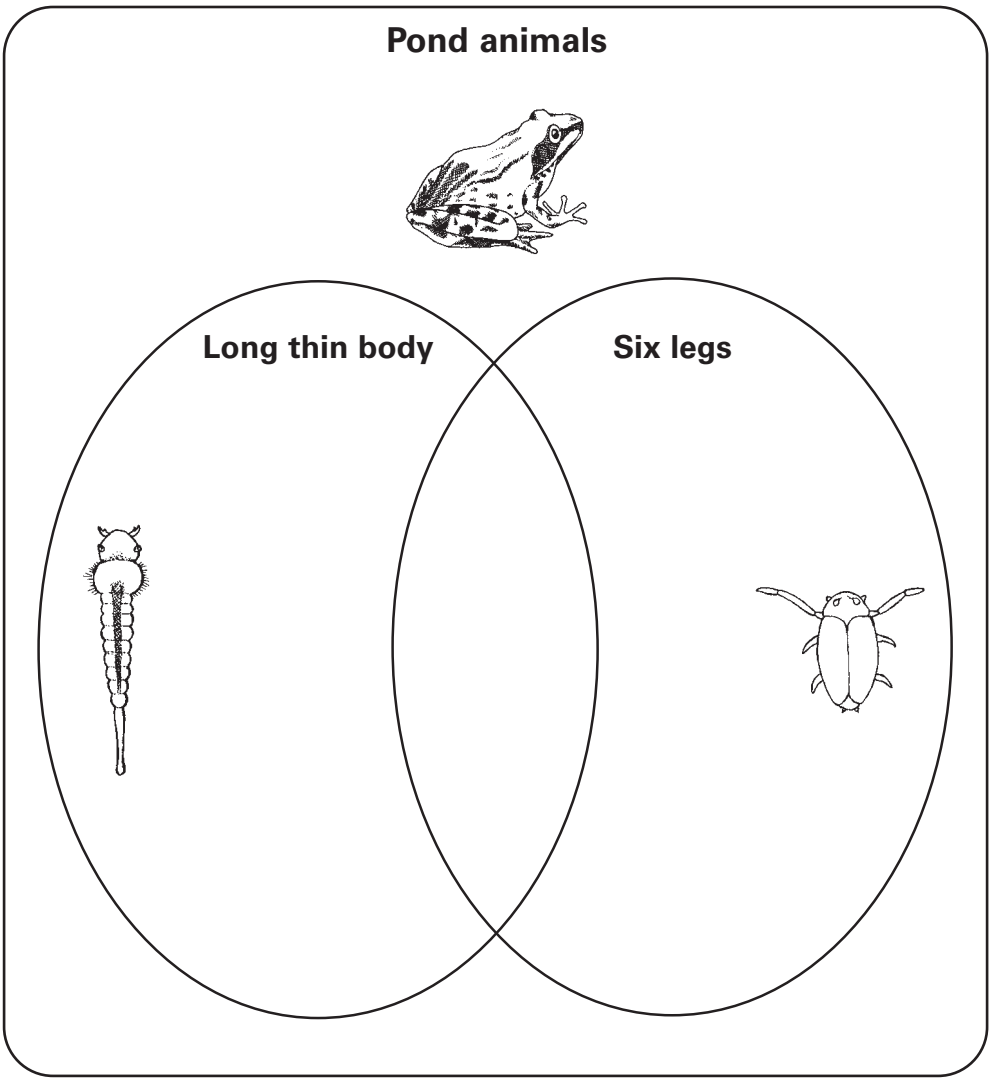
(c) Abdi sorts four more of the pond animals into groups.



A **B** **C** **D**

Write **A**, **B**, **C** and **D** to show which group each animal belongs to in the diagram below.

Some different animals have already been sorted.



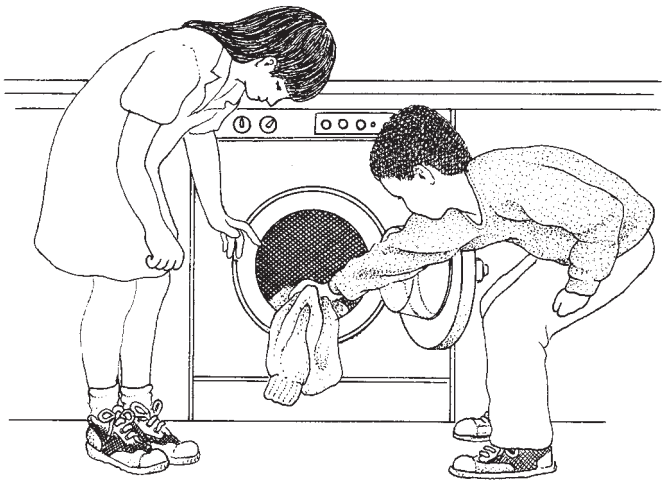
1ci
1 mark

1cii
1 mark

Total

2 Washing day

(a) Some children have washed a jumper.

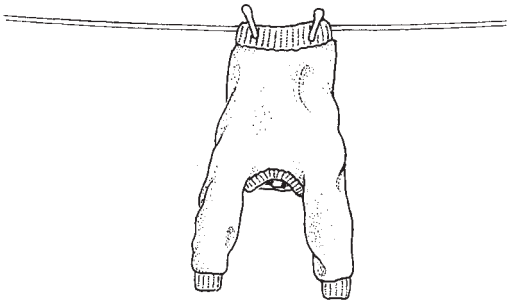


Why does the jumper feel heavier after it is washed?

2a
1 mark

.....

(b) The children want to find out how long the jumper takes to dry.
They hang the jumper up to dry.

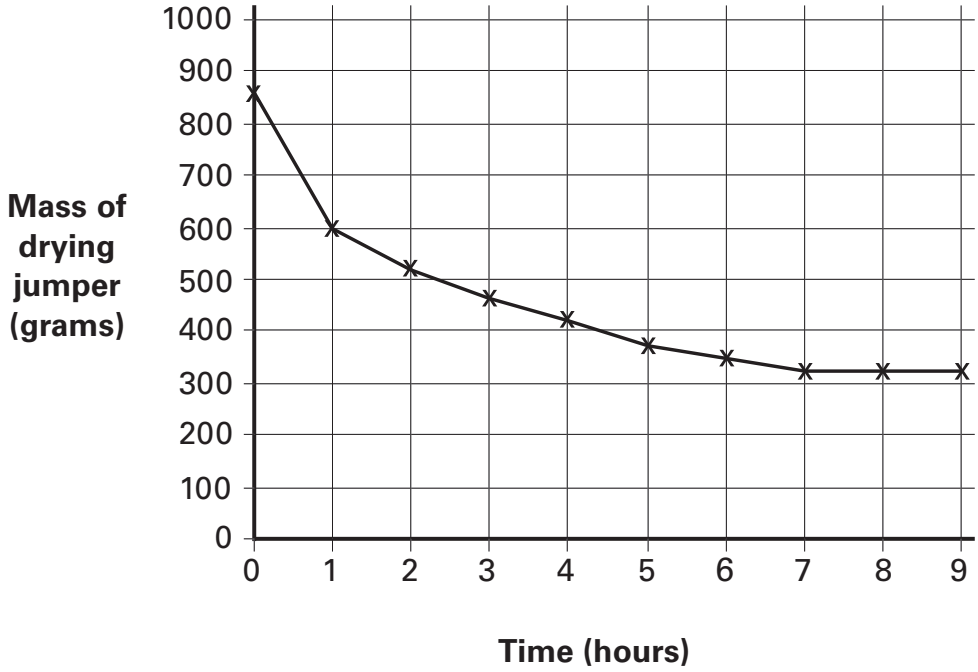


Name the process that completely dries the jumper.

2b
1 mark

.....

(c) The children weigh the jumper every hour.
They make a graph of their results.



How many hours did the jumper take to dry?

.....hours

2c
1 mark

(d) The children repeat their test the next day. They wash and dry the same jumper in the same way. The jumper dries more quickly.

Give **ONE** possible reason why the jumper dries **more quickly** when they repeat their test.

.....

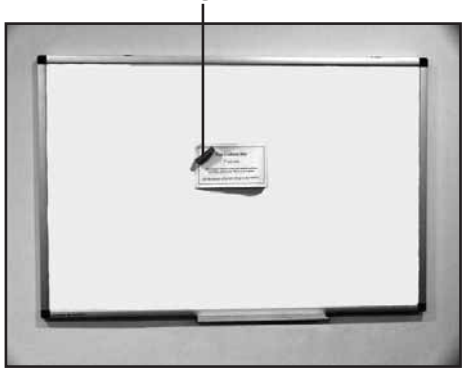
2d
1 mark

Total

3 Magnetic noticeboard

(a) Miya uses a magnet to hold a notice on the noticeboard in her classroom.

The board is coated in white plastic.



Tick **ONE** box to show which material may be under the plastic coating for the magnet to stick to the board.

steel	☐	paper	☐
wood	☐	cork	☐

☐ 3a
1 mark

(b) Miya has four magnets. She wants to measure how much force is needed to pull each magnet away from the board.
The picture below shows how she carries out her test.

Write the label on the picture to name the equipment she uses to measure the force.

☐ 3b
1 mark

.....

(c) Miya measured the force for each magnet three times to calculate the average force.

The table below shows her results.

Magnet	Average force needed to pull the magnet away (N)
A	2
B	10
C	5
D	6

Which magnet is the strongest?

.....

3c
1 mark

(d) Miya observes that as she pulls on the magnet the force reading increases until the magnet comes away from the board.

Tick **ONE** box to show **when** Miya should take the force reading.

before she starts pulling on the magnet	☐	just after she starts pulling on the magnet	☐
just before the magnet pulls away from the board	☐	after the magnet is pulled away from the board	☐

3d
1 mark

(e) Give **ONE** reason why it is better to measure the force for each magnet three times instead of just once.

.....

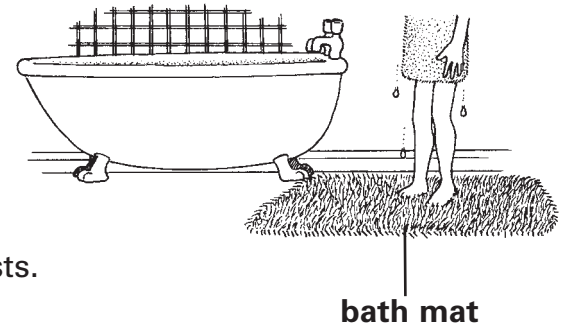
.....

3e
1 mark

Total

4 Bath mat

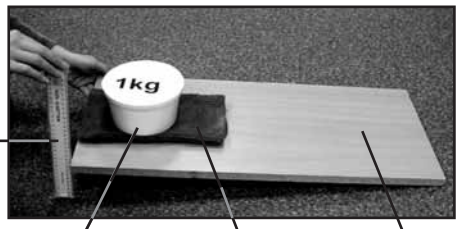
(a) Some children want to find the best fabric for making a bath mat.



They set up two different tests.

TEST 1 - Does the fabric slip easily on a smooth surface?

Lifting the ramp



The fabric starts to slide

They slowly lift the ramp until the fabric starts to slide.

Here are the results of **Test 1**:

Fabric	Height of ramp when fabric starts to slide (cm)
A	11
B	8
C	13
D	16

Look at the table.

Put the fabrics in order to show how easily each fabric slipped.

Write **A**, **B**, **C**, or **D** in each box.

Slipped easily ☐ ☐ ☐ ☐ **Did not slip easily**

☐ 4a
1 mark

(b) What is the name of the force that makes it hard for the fabric to start moving?

.....

4b
1 mark

(c) **TEST 2 - Does the fabric absorb water?**

The children pour the same amount of water onto each fabric.
They hold up the fabric to let the water drip off.

Here are the results of **Test 2**:

Fabric	Observations
A	Almost no water drips off.
B	Nearly all the water drips off.
C	Some of the water drips off.
D	No water drips off.

Look at the table.

Put the fabrics in order to show how absorbent each fabric was.

Write **A**, **B**, **C**, or **D** in each box.

Most absorbent ☐ ☐ ☐ ☐ **Least absorbent**

4c
1 mark

(d) Look at the results of **Test 1** and **Test 2**.

(i) Which fabric will make the best bath mat?

.....

4di
1 mark

(ii) Give **TWO** reasons why the fabric you chose is better than the other fabrics.

1. .....

4dii1
1 mark

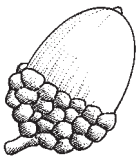
2. .....

4dii2
1 mark

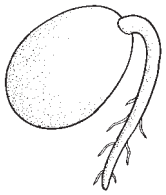
Total

5 Oak tree

(a) Oak trees produce acorns. New oak trees grow from the acorn seeds.



acorn



acorn seed is germinating

Look at the picture of the acorn seed germinating.

Tick **ONE** box to show which part of the plant comes out of the acorn seed first as it germinates.

leaf ☐ stem ☐

root ☐ petal ☐

☐ 5a
1 mark

(b) The jay is a bird. It collects acorns from oak trees and buries them in the ground to eat later. Sometimes the jay does not go back for the acorns.

The jay helps part of the oak tree's life cycle.

Which part of the oak tree's life cycle does the jay help?

Tick **ONE** box.

pollination ☐ seed dispersal ☐

growth ☐ seed production ☐

☐ 5b
1 mark

(c) The blue tit is a small bird.

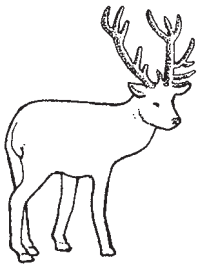
blue tit

The blue tit eats **one** of the four **animals** below.

caterpillar

squirrel

pigeon

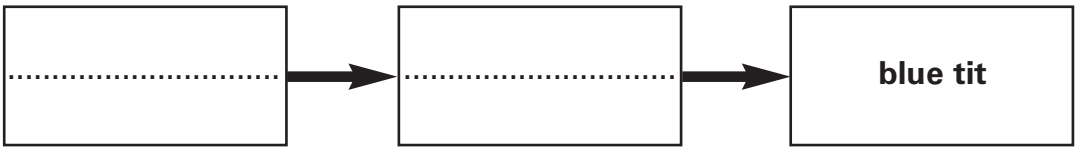


deer

These four animals eat parts of the oak tree.

oak tree

Use the information given above to help you complete the food chain for the blue tit.



5c
1 mark

(d) The oak tree needs to take in light for healthy growth.

Name **ONE** other thing the oak tree needs to take in for healthy growth.

.....

5d
1 mark

Total

6 Light sensor

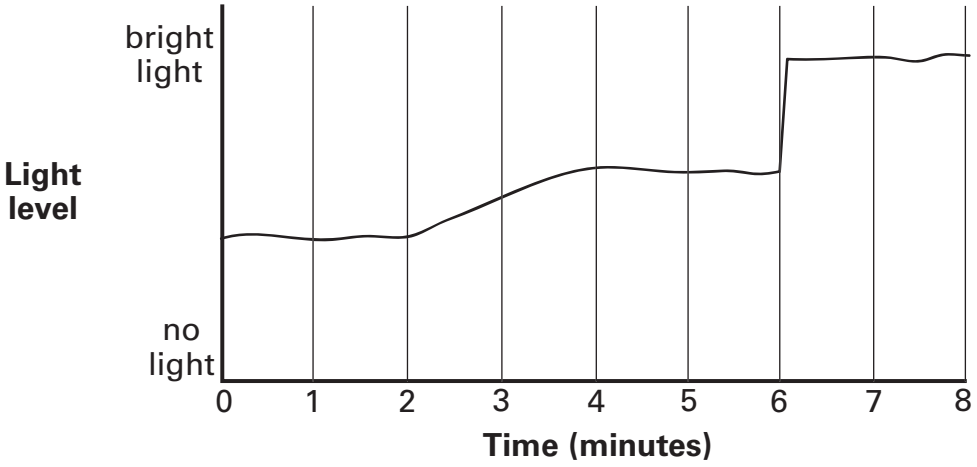
(a) The light in a classroom comes from different sources.

Tick **ONE** box below to show one possible source of light in a classroom.

plant	☐	mirror	☐
radiator	☐	computer screen	☐

☐ 6a
1 mark

(b) Some children place a light sensor in the middle of the classroom. The graph below shows how the light level changed over time.



Describe what happened to the light level between two and four minutes on the graph.

.....

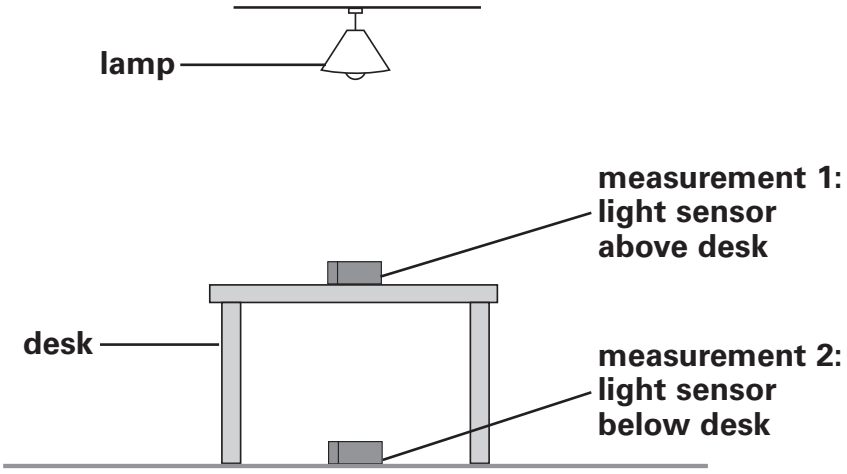
☐ 6b
1 mark

(c) Describe **ONE** thing that could have happened in the classroom at six minutes to make the light level suddenly change.

.....

☐ 6c
1 mark

(d) The children measure the light above a desk and below a desk.



George says: 'When the light sensor is under the desk, the reading on the sensor goes down.'

Write **true** or **false** next to each sentence below.

	True or **false?**
The light source is above the desk.	.....
The light cannot pass through the desk.	.....
There is a shadow underneath the desk.	.....

6d
1 mark

(e) Complete the sentence using a word from the box below.

impermeable	opaque	transparent	solid

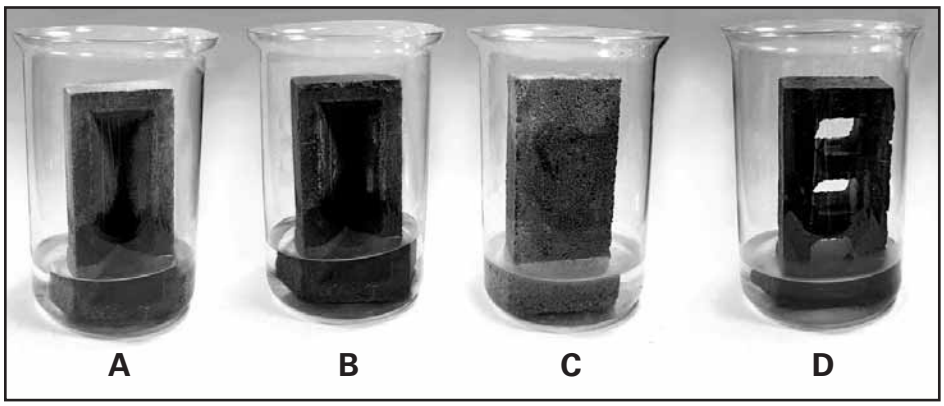
The sensor reading is lower when it is below the desk because the desk is .....

6e
1 mark

Total

7 Building materials

(a) Some children put 4 bricks made of different materials into 1000 cm^3 of water and left them overnight.



They removed each brick and measured the amount of water left in each container.

Here is a table of their results.

	Amount of water in each container (cm^3)	Amount of water left in the container (cm^3)	Amount of water absorbed (cm^3)
Brick A	1000	900	100
Brick B	1000	810	190
Brick C	1000	750	250
Brick D	1000	770	230

What question were the children investigating?

.....

.....

7a

1 mark

(b) What was the factor they changed as they carried out their investigation?

.....

.....

7b
1 mark

(c) Write **TWO** factors they should keep the same at the start to make their test fair.

1. .....

2. .....

7ci
1 mark

7cii
1 mark

(d) Suggest **another** set of data they could collect to compare these bricks.

.....

.....

7d
1 mark

Total

8 Melting ice

(a) It is cold and there is snow and ice on the pavement.

What word describes the change of water into ice?

.....

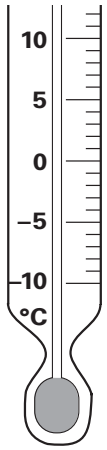
8a

1 mark

(b) Ben and Sakra want to find a way to make the ice melt quickly so the pavement is safe to walk on.

Ben measures the temperature of some ice cubes.
The temperature is –4°C.

Mark **–4°C** on the thermometer.

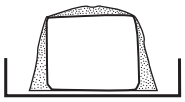
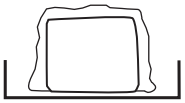


8b

1 mark

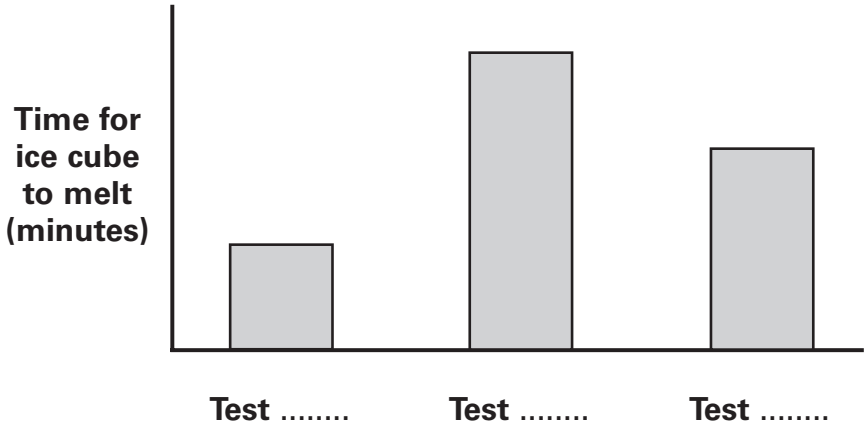
(c) Sakra puts three ice cubes on three separate dishes. She leaves one uncovered, she covers one with a tablespoon of salt and one with a tablespoon of flour.

Ben and Sakra record how long it takes each ice cube to melt.

Test	A	B	C
Description	 **uncovered** ice cube	 ice cube with **salt**	 ice cube with **flour**
Time for ice cube to melt (minutes)	100	40	130

Sakra and Ben draw a graph of their results.

Complete the labels by writing **A**, **B** or **C** under each bar on the graph below to name which test each bar shows.



8c
1 mark

(d) Ben says that flour seems to make the ice melt more slowly.

Tick **ONE** box to show a possible reason for flour making ice melt more slowly.

Flour lets heat pass through quickly. ☐

Flour dissolves ice. ☐

Flour is at a lower temperature than ice. ☐

Flour insulates ice. ☐

8d
1 mark

Total

9 At the swimming pool

(a) Ian is at the swimming pool. He notices that the floor tiles around the pool have a rough surface.

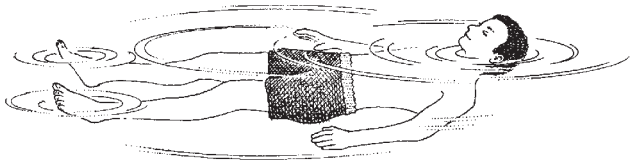
Why are tiles with a rough surface safer than tiles with a smooth surface for people with wet feet?

.....

.....

9a
1 mark

(b) Ian floats on the water.



Why does Ian float on the water even though gravity is pulling him down?

.....

9b
1 mark

(c) As part of a test, Ian swims across the pool wearing his clothes.

How are the forces different when he swims in his clothes compared with when he swims in his swimming costume?

Tick **TWO** boxes.

There is more weight. ☐ There is more friction. ☐

There is less weight. ☐ There is less friction. ☐

9c
1 mark

Total

END OF TEST

Please check your answers

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