Sc

KEY STAGE
2

LEVELS
3–5

2007

Science test

Test B

First name _____

Last name _____

School _____

For marker's use only

Page	Marks
5	
7	
9	
11	
13	
15	
17	
19	
TOTAL	
Borderline check	

INSTRUCTIONS

Read this carefully.

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

Answers

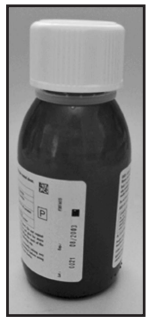
This pencil shows where you will need to put your answer.

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 Medicines and drugs

(a) Medicine bottles used to be made of glass. Now they are often made of plastic.



Why is plastic a better material to use for a medicine bottle?

.....

.....

1a

1 mark

(b) Some children had these ideas about medicines.
Some of their ideas are not true.

Write **true** or **false** under each idea about medicines.

Medicines are not drugs because all drugs are harmful.

.....

Medicines can have bad effects on humans.

.....

If you eat a balanced diet, you will never need to take medicine.

.....

1b

1 mark

2 Water cycle

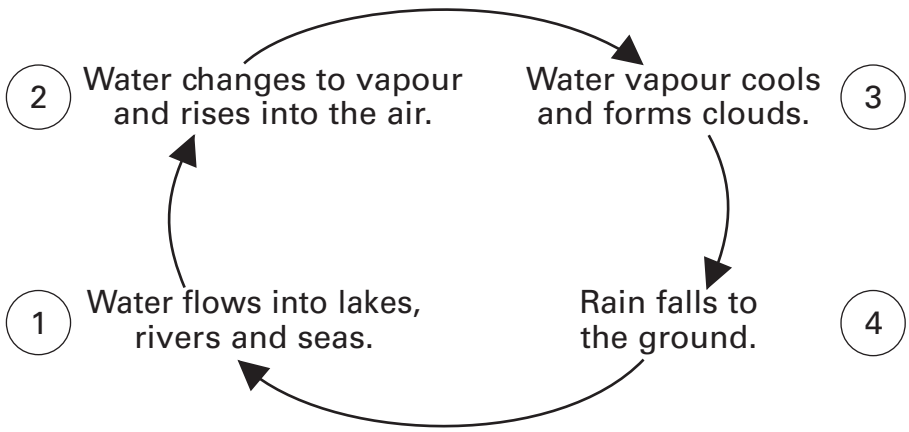
(a) Evaporation and condensation are changes that happen in the water cycle.

Are evaporation and condensation reversible? Write **yes** or **no** on each row.

Change	Is the change reversible?
evaporation	
condensation	

2a
1 mark

(b) This diagram shows the water cycle.



In which stage of the water cycle above does condensation occur? Tick **ONE** box.

1 ☐ 2 ☐ 3 ☐ 4 ☐

2b
1 mark

(c) If the temperature is very cold, the rain cools down and changes.

What change will happen to the rain if it gets very cold?

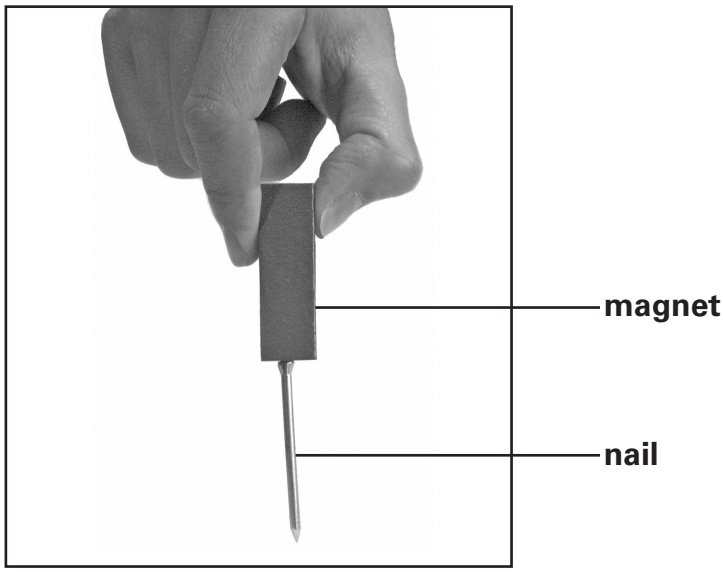
.....

2c
1 mark

Total out of 5 ☐

3 Magnets

(a) Rob holds a magnet near a nail. The magnet attracts the nail.



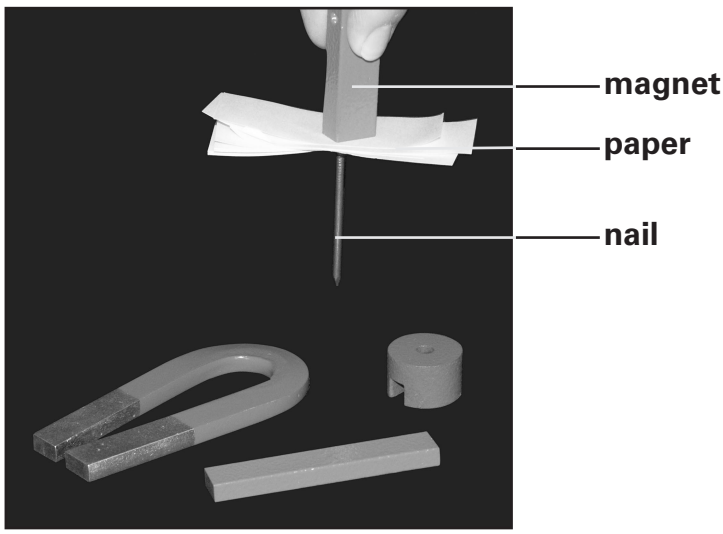
Name **ONE** metal the nail could be made from.

3a

1 mark

.....

(b) Rob gets some more magnets.
He finds out which magnet is strongest by putting pieces of paper between each magnet and the nail.

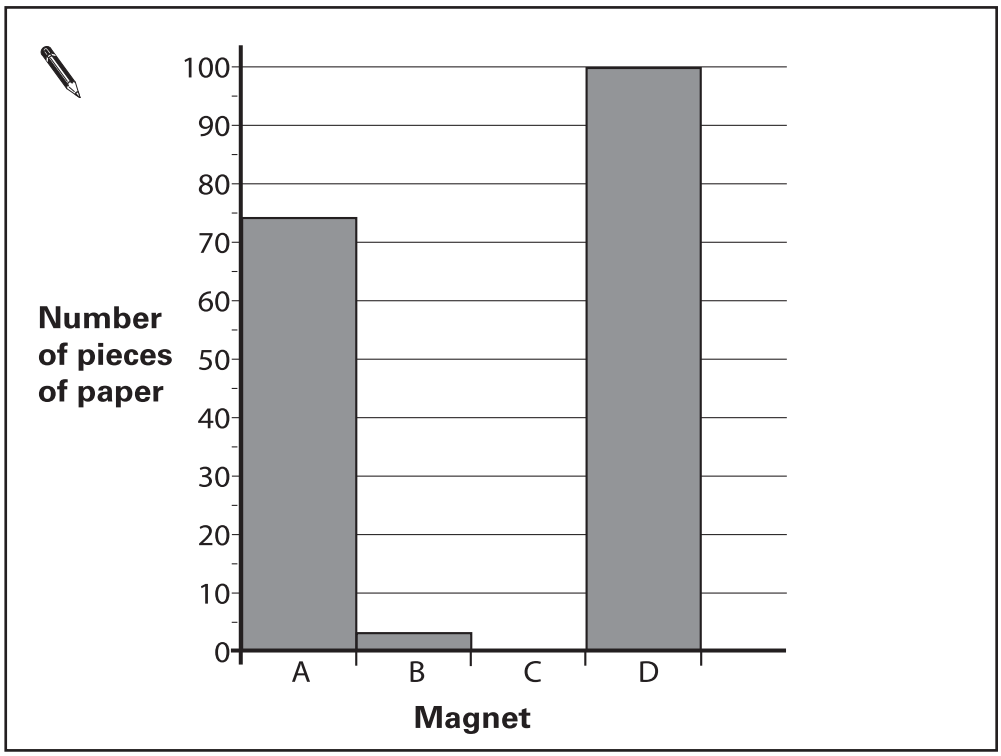


The table below shows how many pieces of paper Rob puts between each magnet and the nail before the nail falls off.

Magnet	A	B	C	D
Number of pieces of paper	74	3	60	100

Rob has not drawn the result for magnet C on the graph.

Use the results in the table to complete the graph for magnet **C**.



3b
1 mark

(c) (i) Tick **ONE** box to show which magnet is strongest.

A ☐ B ☐ C ☐ D ☐

3ci
1 mark

(ii) Explain how the results show which magnet is strongest.

.....

.....

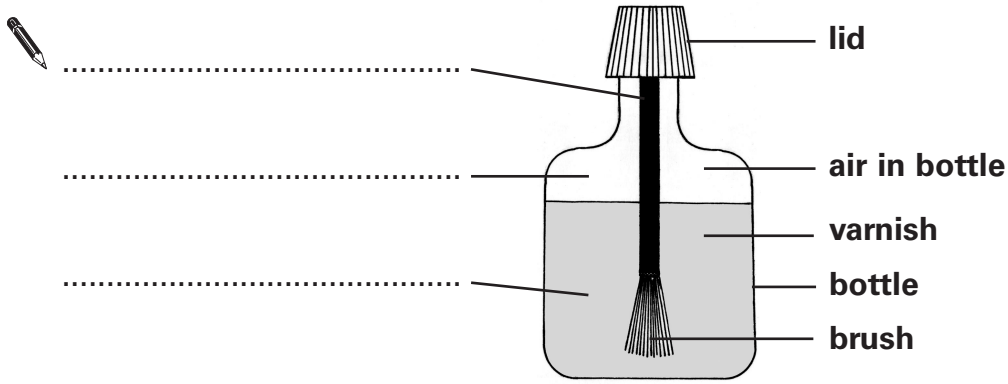
3cii
1 mark

Total out of 4 ☐

4 Solids, liquids and gases

(a) Lorna has a bottle of nail varnish.

Write solid, liquid or gas to label each part of the diagram.



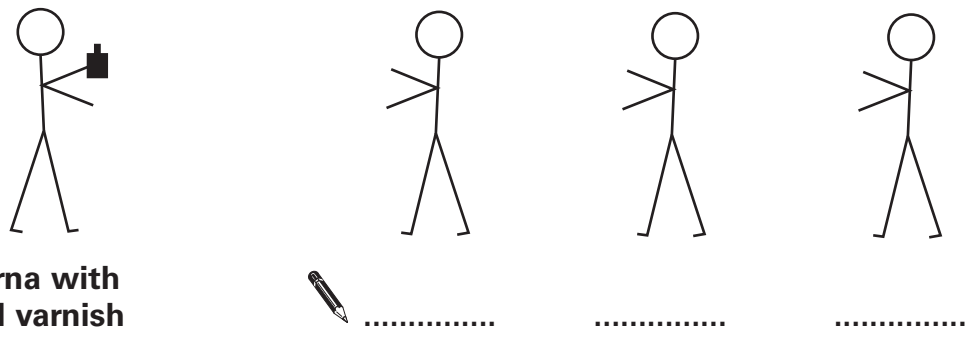
4a
1 mark

(b) Lorna stands at the front of the classroom.
She takes the lid off the nail varnish bottle.

The table below shows the time it took for the smell of the varnish to reach different children.

Child	Time taken to smell varnish (seconds)
A	20
B	5
C	12

Complete the diagram below by writing A, B or C on each line to show the position of each child.



4b
1 mark

(c) Water can be a solid, a liquid or a gas.

Draw **THREE** lines to match the name given to water when it is a solid, a liquid and a gas.

ice	solid
water	liquid
water vapour	gas

4c
1 mark

(d) Answer the questions in the table by ticking the correct box in each row.

Question	Solid	Liquid	Gas
Which forms during evaporation?			
Which keeps its own shape?			
Which forms during condensation?			
Which spreads out to fill any sized container?			

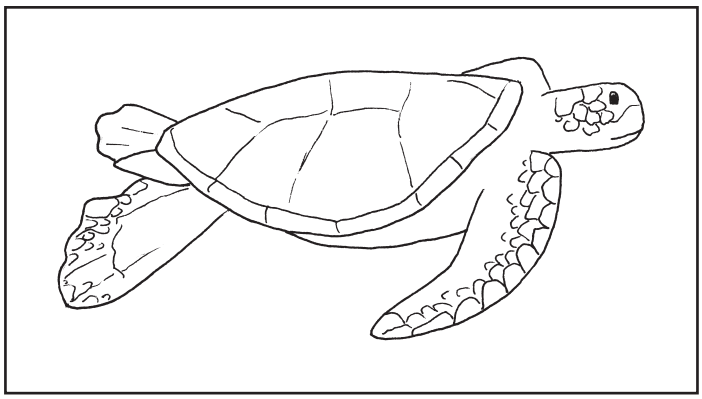
4di
1 mark

4dii
1 mark

Total out of 5

5 Sea turtles

(a) Turtles live in the sea. They lay their eggs on sandy beaches.



Sea turtle

Tick **ONE** box to show which life process laying eggs is part of.

reproduction	☐	growth	☐
nutrition	☐	movement	☐

☐ 5a
1 mark

(b) Baby turtles hatch from the eggs at night to avoid being eaten by predators.

How could hatching at night help baby turtles to avoid predators?

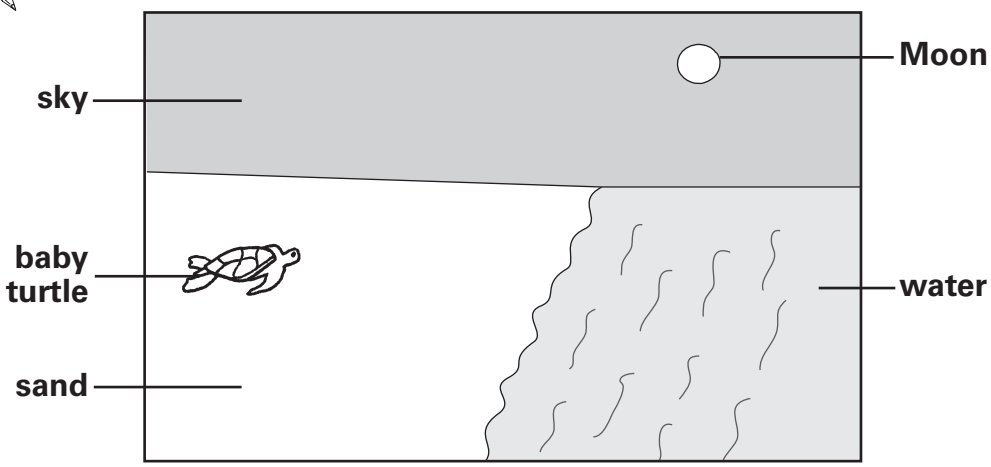
.....

.....

☐ 5b
1 mark

(c) After the baby turtles hatch they go towards the sea. They know which way to go because they can see moonlight reflecting on the water.

Draw **TWO** arrows on the diagram below to show the **direction light travels** for the turtle to see the moonlight reflecting on the water.



5ci
1 mark

5cii
1 mark

(d) Light sources in nearby towns can confuse baby turtles.
They go in the wrong direction towards the town.

If they do not find the sea, the baby turtles may die.

What could people do at night to help the baby turtles to find the sea?

Tick **TWO** boxes.

turn off street lights in towns	☐	turn off lights on ships	☐
stop cars driving near the beach	☐	open curtains	☐

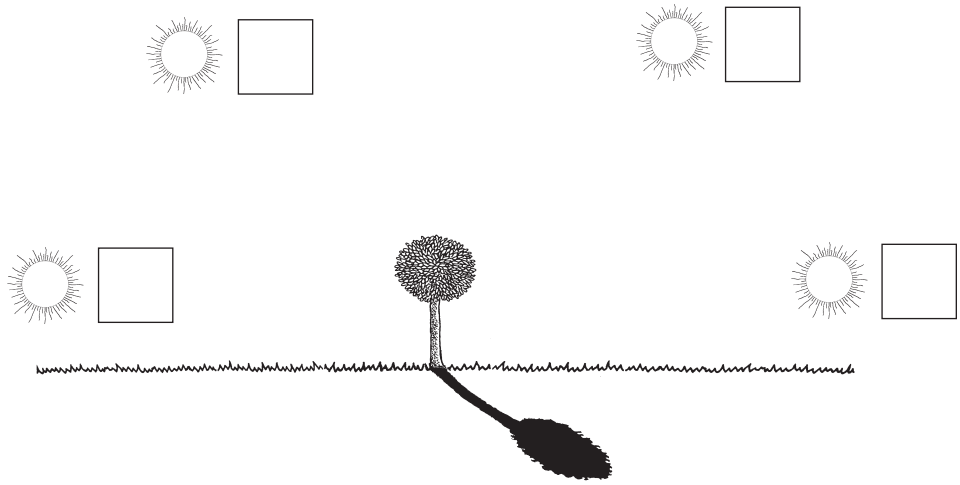
5d
1 mark

Total out of 5 ☐

6 Tree shadow

(a) Alex looks at a tree on a sunny day.

Tick **ONE** box to show where the Sun was when it caused this shadow of the tree.



6a
1 mark

(b) Explain why a shadow forms behind the tree.

6b
1 mark

.....

(c) Alex looks at the shadow of the tree at different times of the day. He observes that the shadow is in a different position each time.

The position of the shadow changes because the Sun appears to move across the sky.

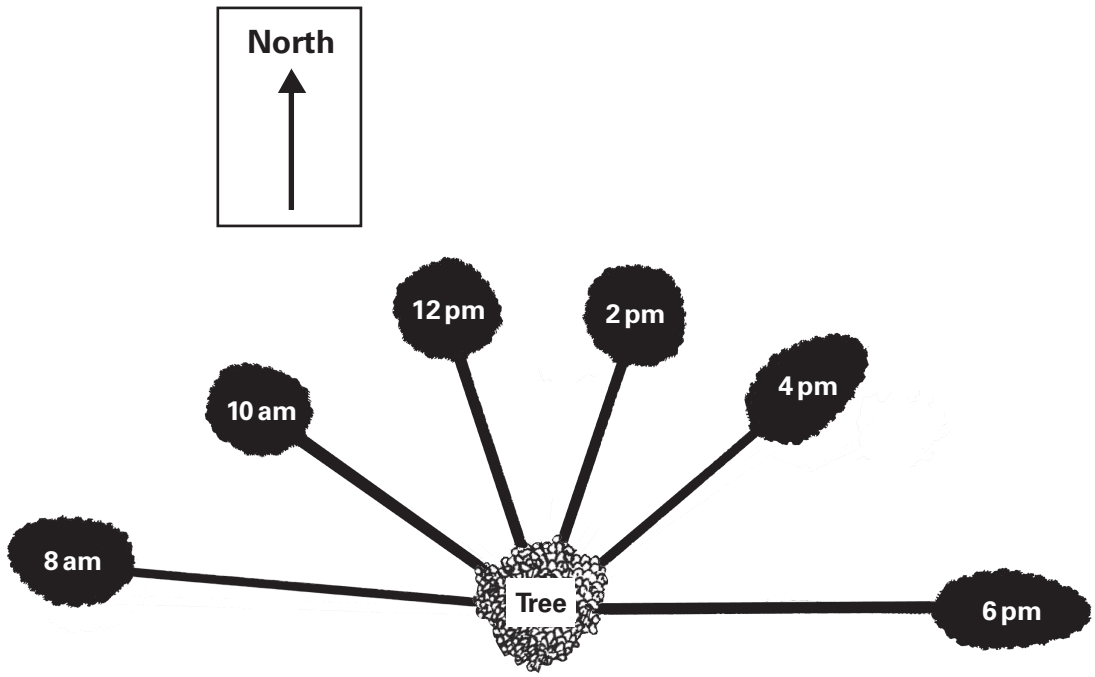
Tick **ONE** box to explain why the Sun appears to move across the sky each day.

The Earth orbits the Sun.	☐	The Earth spins on its axis.	☐
The Sun orbits the Earth.	☐	The Sun spins on its axis.	☐

6c
1 mark

(d) Alex looks at the tree's shadow every two hours.
He draws the position of the shadows on the ground.

The diagram below shows his results.



At 8pm there is no shadow of the tree on the ground.

Why is there no shadow of the tree on the ground at 8pm?

.....

.....

6d
1 mark

(e) Use Alex's diagram to estimate what time the shadow was pointing north.

..... pm

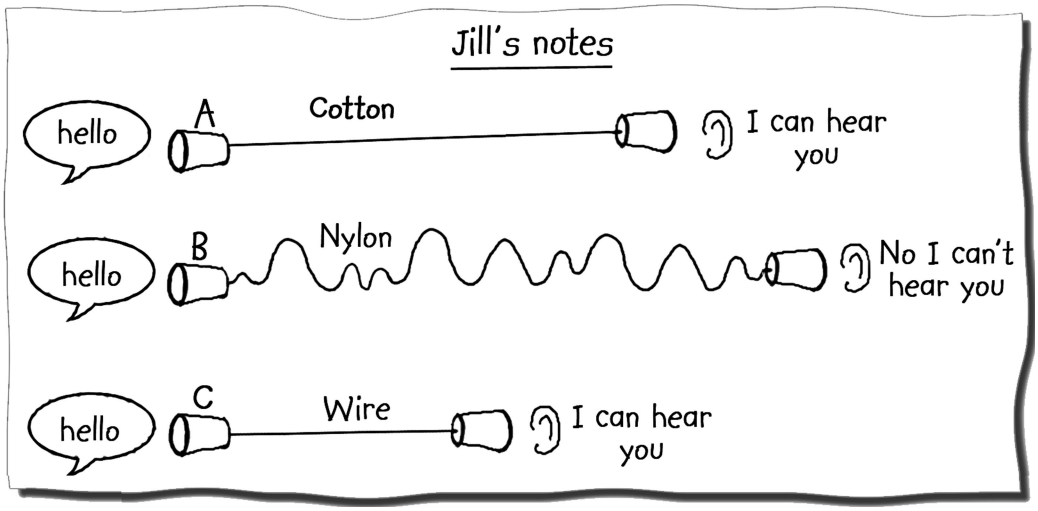
6e
1 mark

Total out of 5

7 Travelling sounds

(a) Jill investigated whether or not sound travelled through different materials.

She made three telephones using plastic cups.
She used different materials to connect the cups.
One child talked through the telephone
and Jill listened.



Look at Jill's notes of her investigation.

How many different materials did Jill test?

7a
1 mark

.....

(b) What was the factor Jill observed or measured to collect her results?

7b
1 mark

.....

(c) Jill changed three factors at the same time.

Complete the list to show the **THREE** factors Jill changed in this investigation.

The first one has been done for you.

1. The tightness of the line .....

7ci
1 mark

2. .....

3. .....

7cii
1 mark

(d) Why is it important to change only **ONE** factor at a time in an investigation?

.....

7d
1 mark

(e) Jill carried out her investigation of sound travelling through different materials again. She made sure only one factor was changed.

Jill described her conclusion.

Jill's teacher said this was **not** a useful science conclusion for her investigation.

Why was Jill's conclusion **not** a useful science conclusion?

.....

.....

7e
1 mark

Total out of 6

8 Space station

(a) Class 6F has been watching a programme about the International Space Station.

Astronauts live in the space station for many months.
Each day they spend two hours on exercise machines.

Why do astronauts need to exercise while they are in the space station?

8a
1 mark

.....

(b) The astronauts are not allowed to eat bread or crackers because the crumbs float around the space station.
On Earth, crumbs fall down.

Why do crumbs fall down to the ground on Earth?

Write about a force in your answer.

.....

8b
1 mark

.....

(c) Food that astronauts take into space has been dried to remove air and water. This stops micro-organisms growing on the food.

Write **true** or **false** next to each statement about their food.

Dried food is better than fresh food to take into space because it...

True or **false?**

weighs more. .....

decays more slowly. .....

8c

1 mark

(d) The astronauts investigate plants in the space station.
The plants grow in a special jelly instead of soil.
The jelly contains the things plants need to grow.

What things from the jelly do the plants need to take in through the roots?

Tick **ONE** box.

water and light	☐	nutrients and air	☐
water and nutrients	☐	air and water	☐

8d

1 mark

(e) The roots of plants take in some things the plants need to grow.

Describe another **function** of the roots.

.....

8e

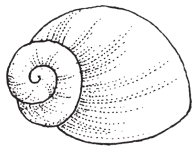
1 mark

Total out of 5

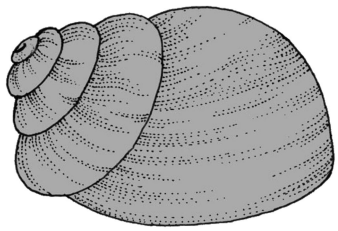
9

Periwinkles

(a) Periwinkles are animals with shells that live on rocks at the seashore.



Shell of periwinkle A



Shell of periwinkle B

The shell of periwinkle A is smaller than the shell of periwinkle B.

Describe **ONE other** way the shell of periwinkle A is different from the shell of periwinkle B.

9a

1 mark

.....

(b) Periwinkles do not have bones inside their bodies but they do have a shell. The shell does **not** help the periwinkle to move.

Describe **ONE** function of the shell.

9b

1 mark

.....

(c) A scientist wants to find out if the area the periwinkles live in affects the size of their shells. He measures a sample of 20 periwinkle shells from two different areas of the seashore.

Why does he measure 20 periwinkle shells from each area instead of just one periwinkle?

.....

.....

9c
1 mark

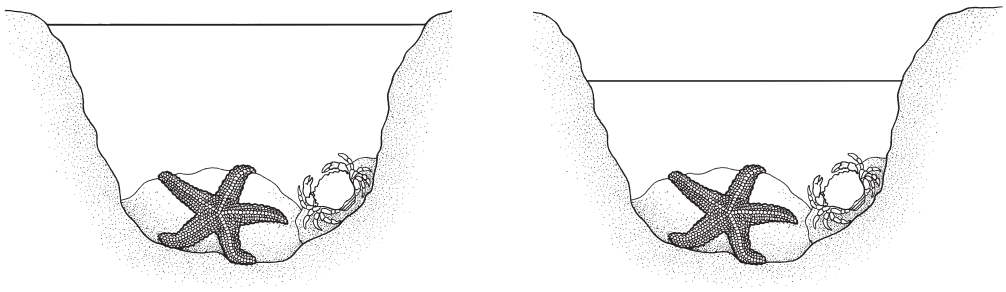
(d) Explain why it is important to return the animals to the same place they were collected from.

.....

.....

9d
1 mark

(e) The scientist measures how much water is in a rockpool. After five hours the water level in the rockpool is lower. No waves splashed into the rockpool during this time. No water could leak out.



Rockpool **Rockpool after 5 hours**

Describe what happened to the water in the rockpool during the five hours.

.....

9e
1 mark

Total out of 5

END OF TEST

Please check your answers

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QCA/06/2795 (Mark schemes pack) 275365