Key Stage 2 2006

SCIENCE

Modified Large Print

Levels 3-5
Test A

First name _____

Last name _____

School _____

Note to markers:
This paper should be marked using the MODIFIED LARGE PRINT mark scheme amendments – MLP.

302900-371

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TIME ALLOWED

You have 45 minutes for this test plus your additional time allowance.

INSTRUCTIONS

Write all your answers on this question paper.

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.

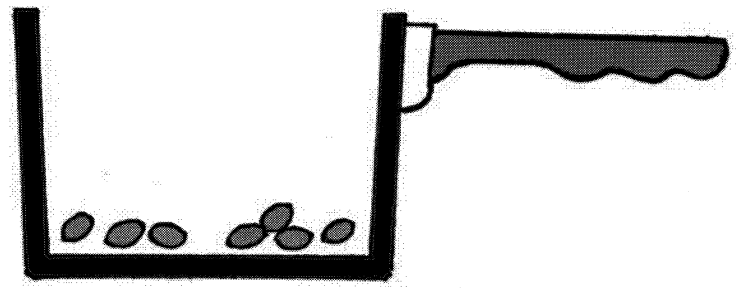
My idea

1. Popcorn

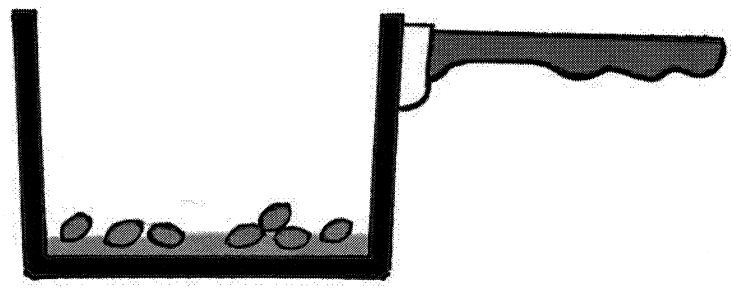
(a) Sasha watches her father make some popcorn.

These pictures show what he does.

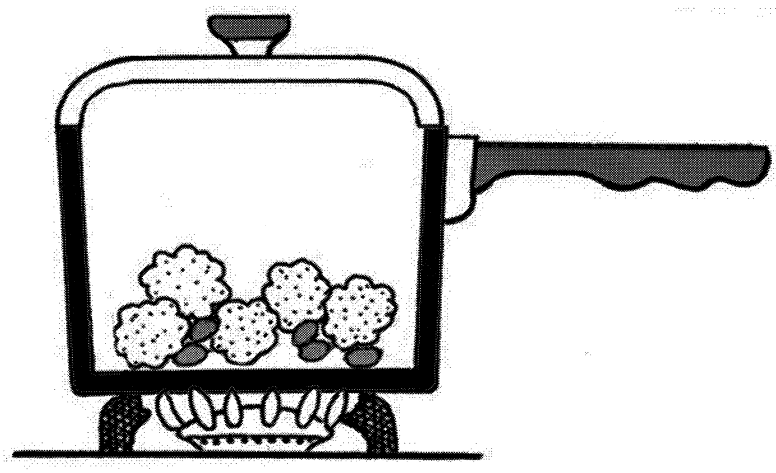
1. Put the corn in a saucepan.



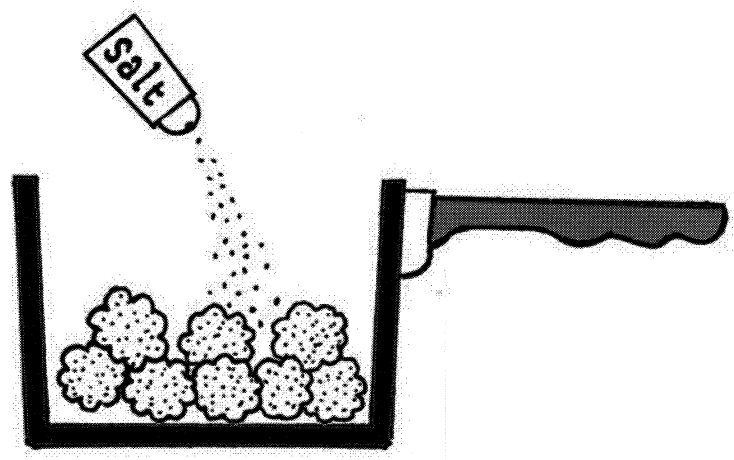
2. Add some oil.



3. Put a lid on and heat the corn.



4. Add some salt.



Use the pictures.

Tick one box after each sentence to show if it is true or false. [2 marks]

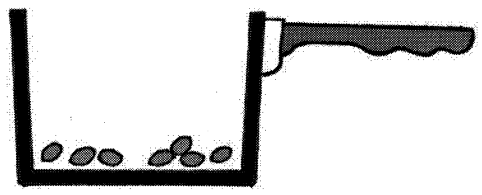
The pictures show that as the corn pops, it . . .

	True	False
gets bigger.	☐	☐
changes to a darker colour.	☐	☐
changes shape.	☐	☐
gets smoother.	☐	☐

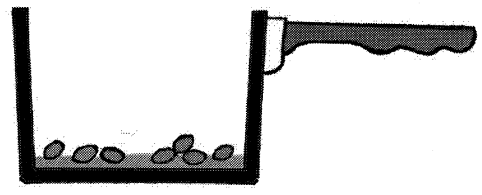
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Here are the pictures again.

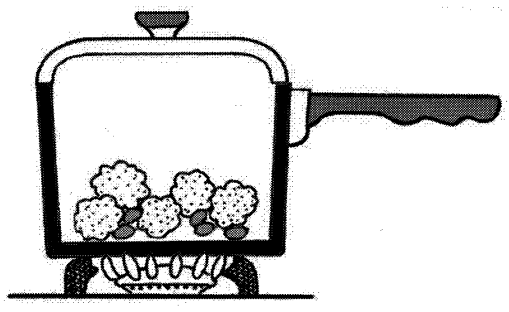
1. Put the corn in a saucepan.



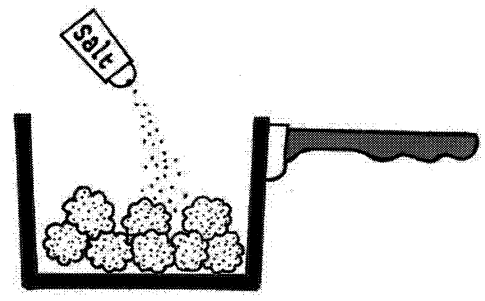
2. Add some oil.



3. Put a lid on and heat the corn.



4. Add some salt.



(b) After the corn is cooked it is hot.

What should Sasha measure to find out how hot the popcorn is? [1 mark]

Tick one box.

Sasha should measure the . . .

mass. ☐

temperature. ☐

volume. ☐

time to cook. ☐

(c) **Look at the pictures on page 6.**

Tick one box to show what is most likely to cause the corn to change. [1 mark]

salt ☐

oil ☐

heat ☐

saucepan ☐

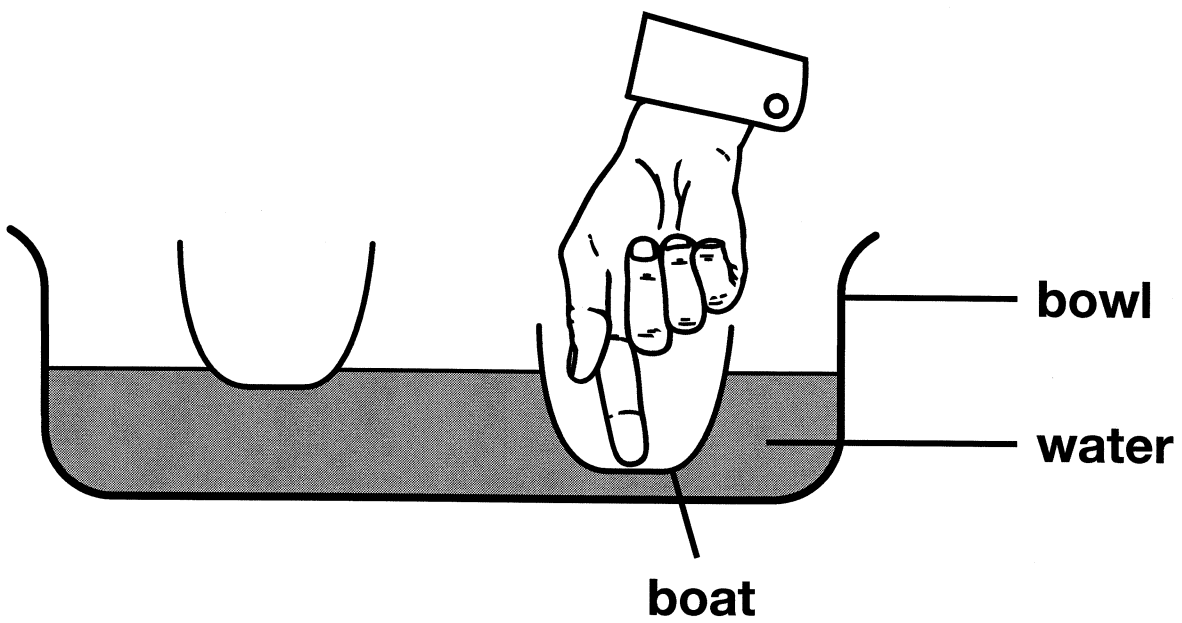
(d) **When corn is popped, a new material is formed. This change is not reversible.**

Describe a different non-reversible change where another new material is formed. [1 mark]

2. Boats

(a) Mike puts two boats in a bowl of water.
They float on the water.

Mike pushes down on one of the boats with his finger.



Tick one box to show what Mike can feel as he pushes down. [1 mark]

The force from the water pushing the boat up. ☐

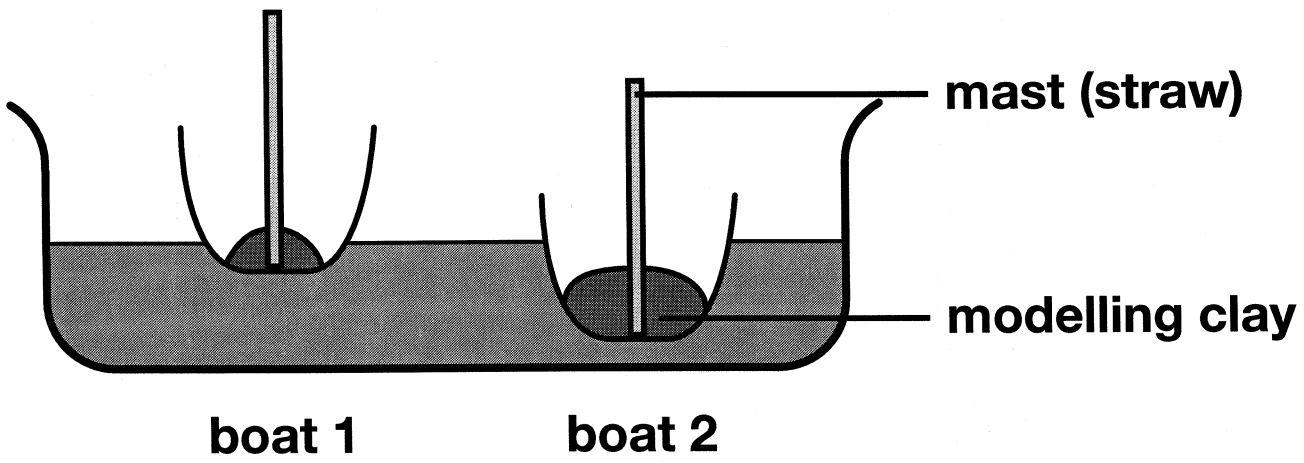
The force from the water pushing the boat down. ☐

The force from the air pushing the boat up. ☐

The force from the air pushing the boat down. ☐

(b) **Mike makes masts for the boats with straws.**

He attaches the masts to the boats using modelling clay.



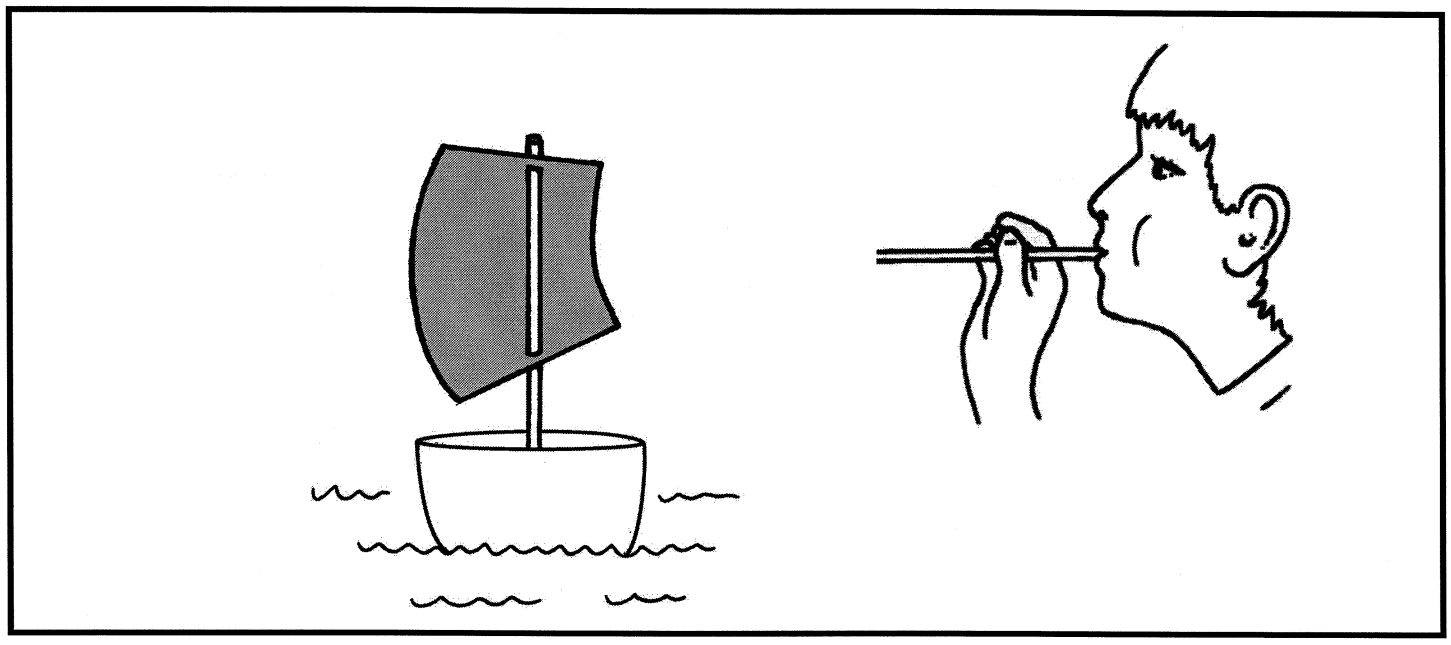
Explain why boat 2 floats lower in the water than boat 1.
[1 mark]

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(c) **Mike makes sails for the boats out of paper.**

He uses a straw to blow one of the boats along.

Draw an arrow on the picture to show the direction of the force pushing the boat along. [1 mark]



(d) **What is the name of the force that slows the boat down? [1 mark]**

(e) **Mike blows the boat when it has a big sail.**

Then he puts a small sail on the boat and blows with the same force.



Big sail **Small sail**

The big sail makes the boat go faster.

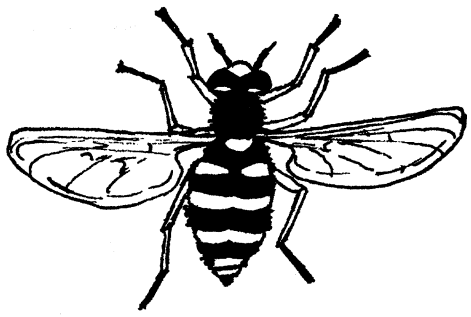
Explain why the bigger sail makes the boat go faster. Write about the forces on the sail in your answer. [1 mark]

3. Mini-beasts

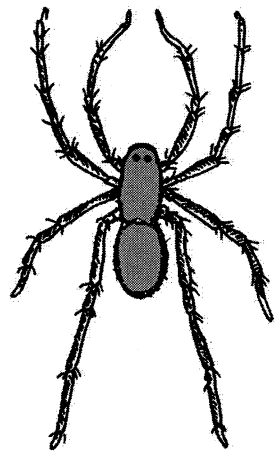
(a) Some children find four mini-beasts.

They make a table about their observations.

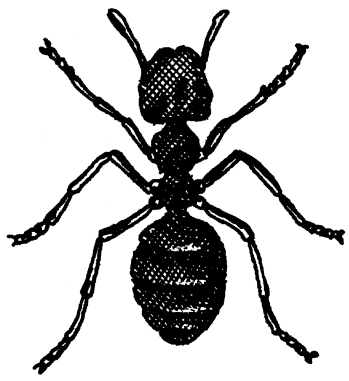
Complete Table 1 opposite by adding the names of these four mini-beasts. [2 marks]



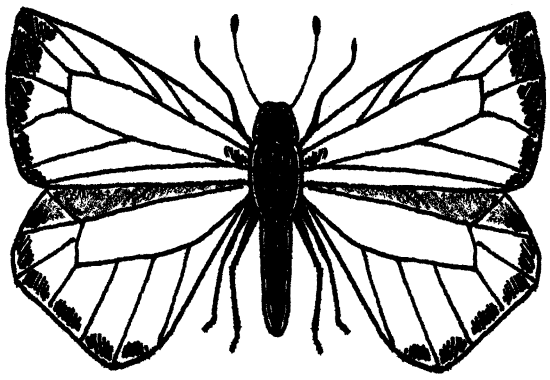
hoverfly



spider



ant



butterfly

Table 1

Name	Legs	Wings	Antennae
_____	6	4	2
_____	6	2	2
_____	6	0	2
_____	8	0	0

(b) The children have some ideas about where to put the mini-beasts when they have finished studying them.

Tick one box to show where the children should put the mini-beasts. [1 mark]

in a safe place away from the road ☐

in a pot with food and water ☐

in the place where they were found ☐

in a dark place under a log ☐

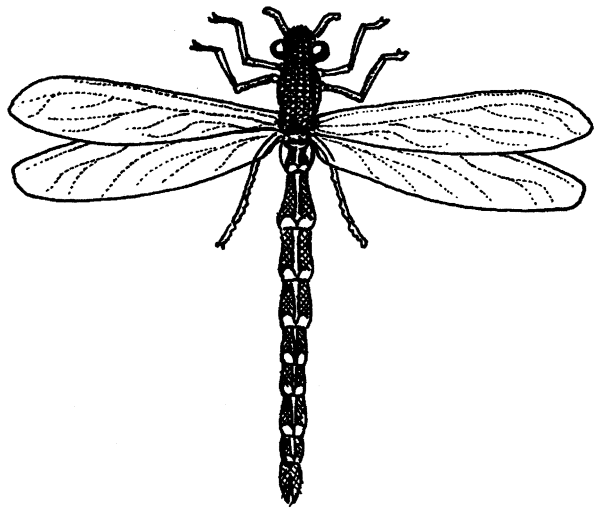
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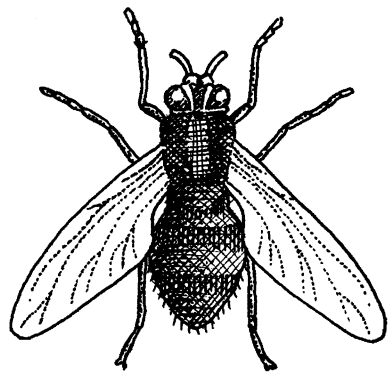
(c) The children find more mini-beasts and make a new table.

Table 2

Name	Legs	Wings	Antennae	Notes
cranefly	6	2	2	long thin tail
dragonfly	6	4	2	long thin tail
housefly	6	2	2	none
tiger moth	6	4	2	hairy body

Use Table 2 to help you name these two mini-beasts.
[1 mark]





(i) _____ (ii) _____

(d) **It would be easier to name the mini-beasts if the children made a key.**

Tick two boxes to show which features would be useful in a key to separate the four mini-beasts in Table 2. [1 mark]

Tick two boxes.

has 6 legs ☐

has a long thin tail ☐

has 4 wings ☐

has 2 antennae ☐

4. Isaac Newton

(a) Isaac Newton was a famous scientist who was born in 1642.

There is a famous story about Newton watching an apple fall from a tree.

Newton thought a force must cause the apple to fall.

Tick one box to show which force on the apple causes it to fall down from the tree. [1 mark]

a pulling force towards the tree ☐

a pushing force from the apple ☐

a pulling force towards the Earth ☐

a pushing force from the air ☐

(b) Newton did different investigations to test his ideas.

Why was it important for Newton to test his ideas using investigations? [1 mark]

(c) Newton realised that the force which made the apple fall to the ground also causes the Earth to orbit the Sun.

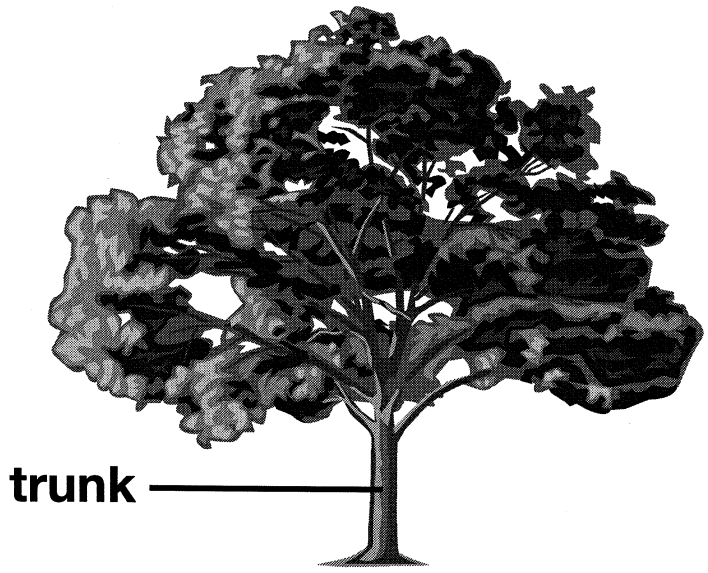
Name the force that causes the Earth to orbit the Sun.
[1 mark]

(d) How long does the Earth take to orbit the Sun once?
[1 mark]

(e) How does the Earth move to cause day and night?
[1 mark]

5. Trees

(a) The thick woody stem of a tree is called a trunk.



Give one function of the trunk for the tree. [1 mark]

_____

(b) Trees make food for growth.

Which part of the tree makes food for growth? [1 mark]

_____

(c) **Trees do not grow quickly during the winter. One reason trees do not grow quickly in the winter is because it is cold.**

Give a different reason to explain why trees do not grow quickly in the winter. [1 mark]

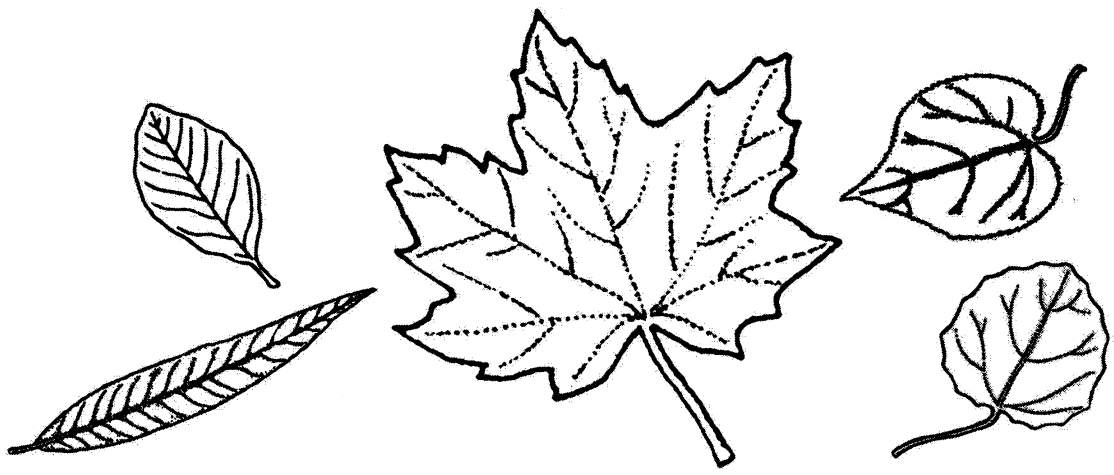
_____

_____

_____

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(d) Class 6 collects leaves that have fallen from some trees.



They write a key which identifies the leaves they collected.

Key to identify leaves

1.	Leaf has a smooth edge . . . . . go to 2 Leaf has a bumpy or jagged edge . . . . . go to 3
2.	Leaf is long and thin . . . . . Weeping willow Leaf is not long and thin . . . . . Alder buckthorn
3.	Leaf is heart shaped . . . . . Silver lime Leaf is not heart shaped . . . . . go to 4
4.	Leaf is round . . . . . Aspen Leaf is not round . . . . . Norway maple

Use the key to identify the two leaves below. [2 marks]





(i) _____ **(ii)** _____

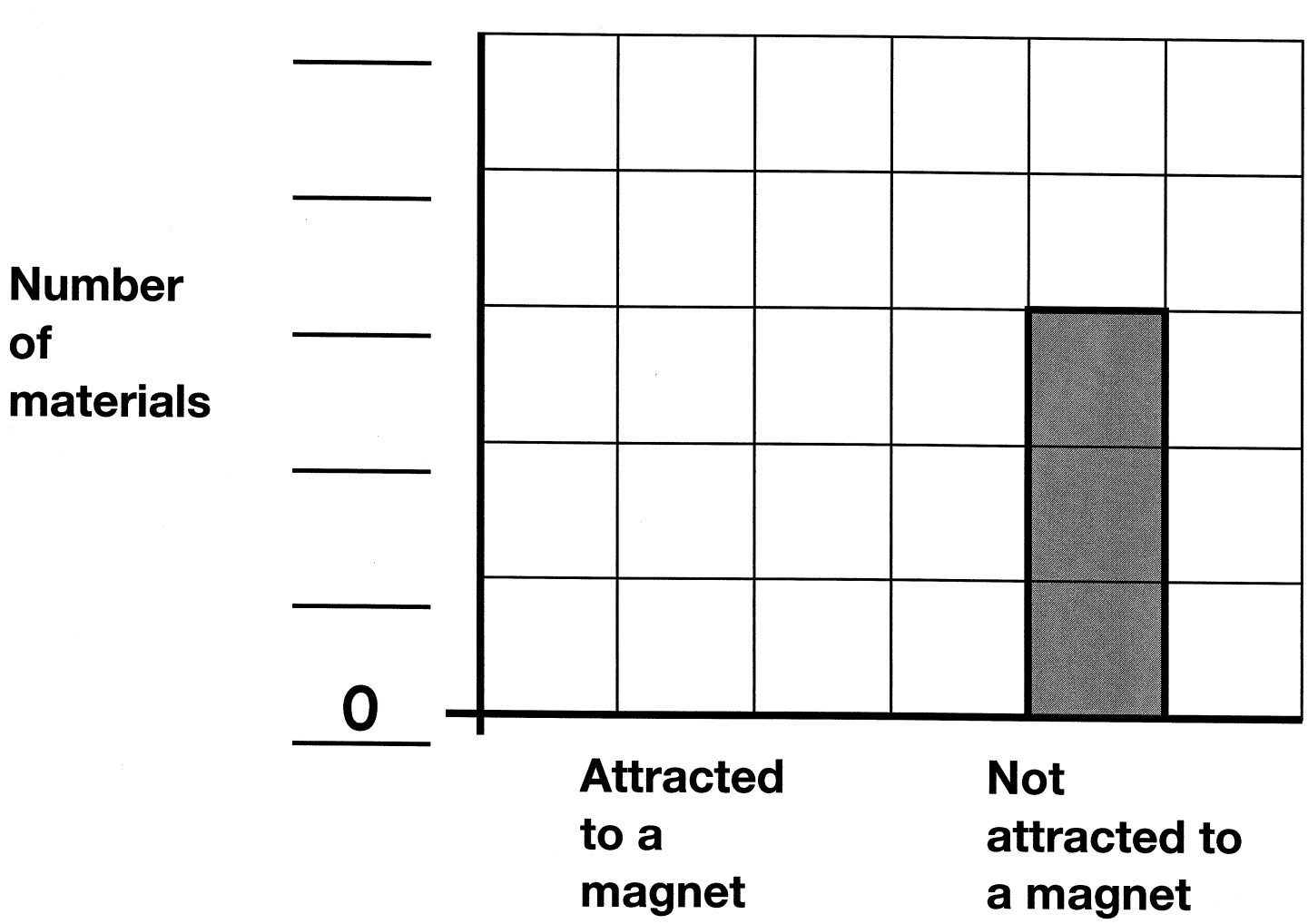
6. Magnets

(a) Some children investigated whether or not some materials are attracted to a magnet.

They made notes of their results.

Attracted to a magnet	Not attracted to a magnet
Iron nail, Steel clip.	Metal coin, Chocolate, Modelling clay.

(i) Write the numbers to show the scale on the chart below. A number has been done for you. [1 mark]



(ii) Draw a bar on the chart to show the number of materials attracted to a magnet. [1 mark]

(b) Jane wrote 'Our investigation was good' as her conclusion for the investigation.

Why is this not a useful scientific conclusion? [1 mark]

_____

_____

_____

THIS QUESTION CONTINUES ON THE NEXT PAGE

(c) Ali and Jane describe their ideas about metals.

Ali: All metals are magnetic.

Jane: Only some metals are magnetic.

Jane recorded some observations from their investigation in a table.

Does each observation support their ideas?

Tick one box on each row of the table. [2 marks]

Observations	Supports Ali's and Jane's ideas	Supports only Jane's idea	Does not support either idea
The iron nail is attracted to the magnet.			
The steel clip is attracted to the magnet.			
The metal coin is not attracted to the magnet.			
The modelling clay is not attracted to the magnet.			
The chocolate is not attracted to the magnet.			

(d) **Ali said 'To improve our test we should have measured how far each material moved when it was attracted to the magnet'.**

Jane said 'This would not improve our test'.

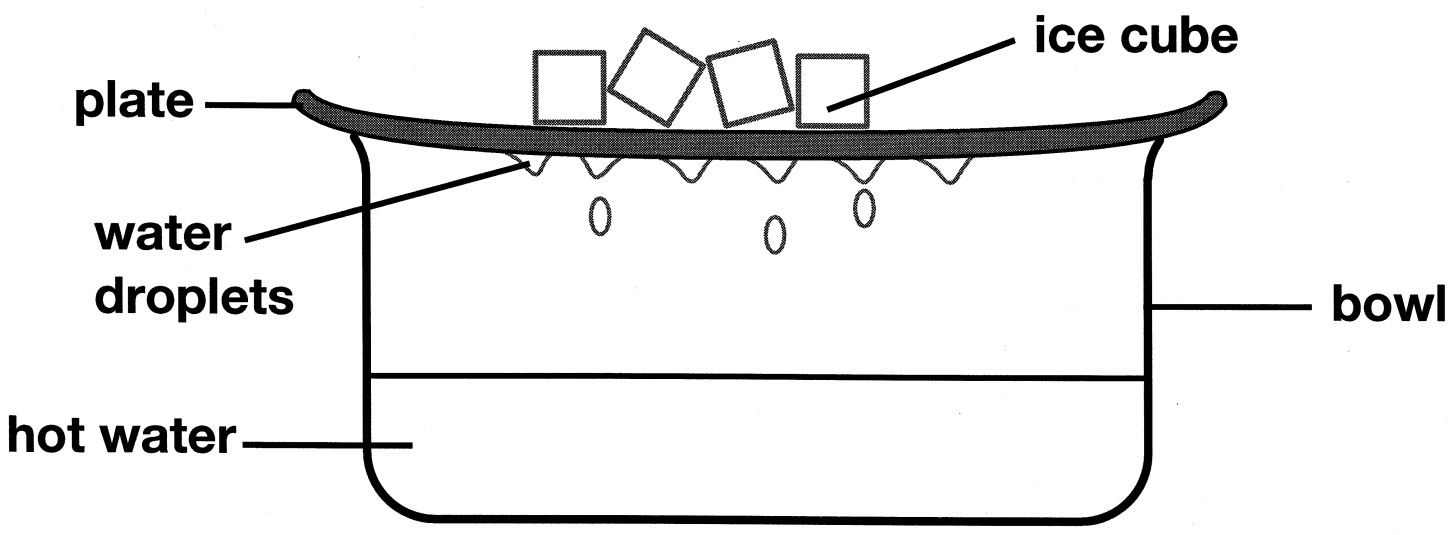
Why was Jane right to think this would not improve their test? [1 mark]

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7. Ice experiments

(a) Safia and Josh are doing experiments with ice cubes.

First Safia puts ice cubes on a plate over a bowl of hot water.



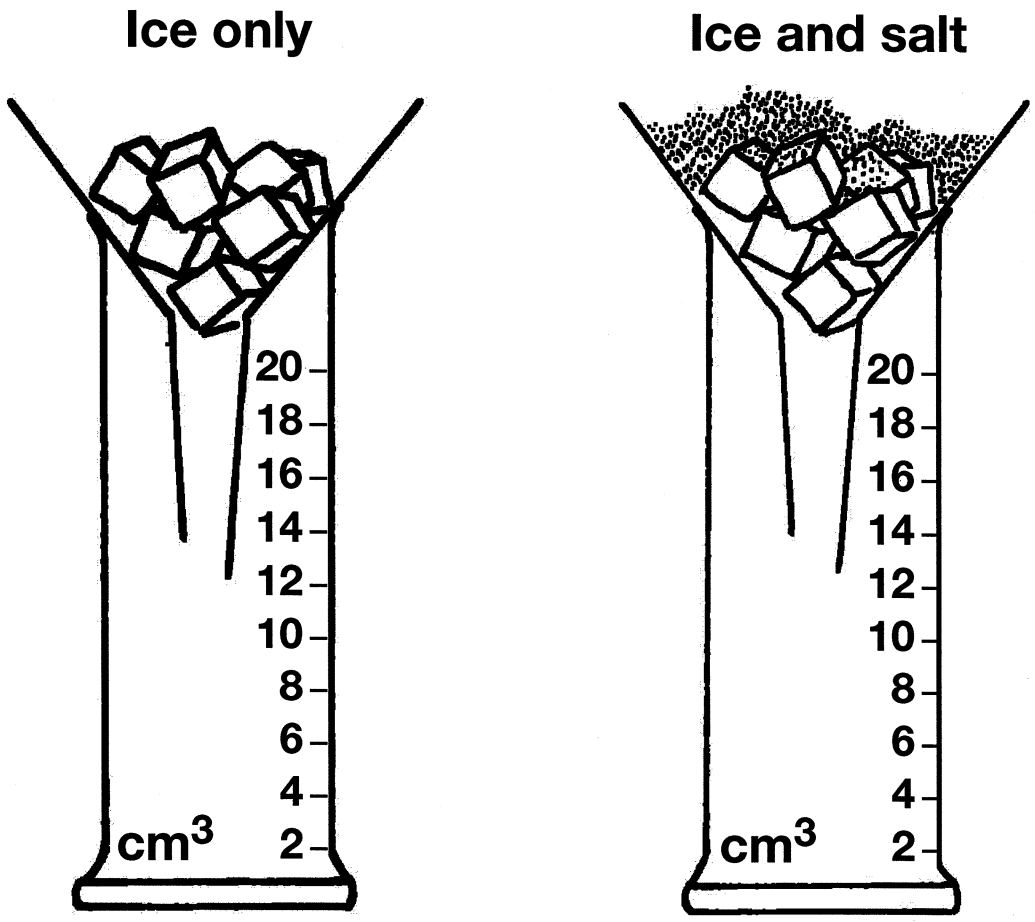
After some time, Safia sees droplets of water drip from underneath the plate. Water from the melting ice cannot pass through the plate and the bowl has not moved.

Explain how the water droplets formed in the bowl underneath the plate. [2 marks]

(b) **In winter, people put salt on the road to make the ice melt.**

Josh investigates the effect of salt on melting ice.

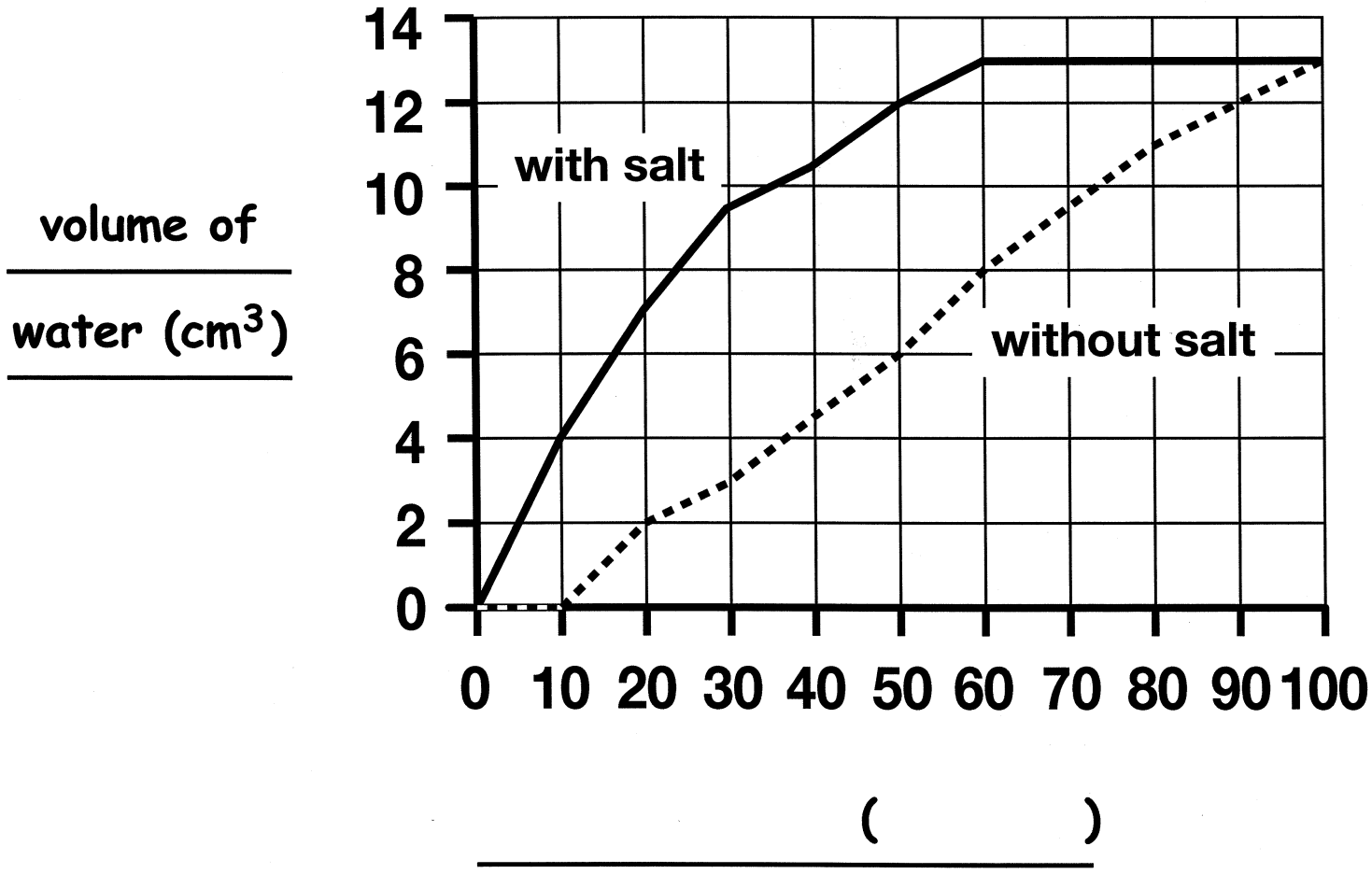
He puts the same amount of ice in two funnels. He adds salt to the ice in one funnel.



The ice starts to melt. Every ten minutes, Josh measures how much water is in each cylinder.

The graph opposite gives Josh's results.
One axis on the graph has been labelled.

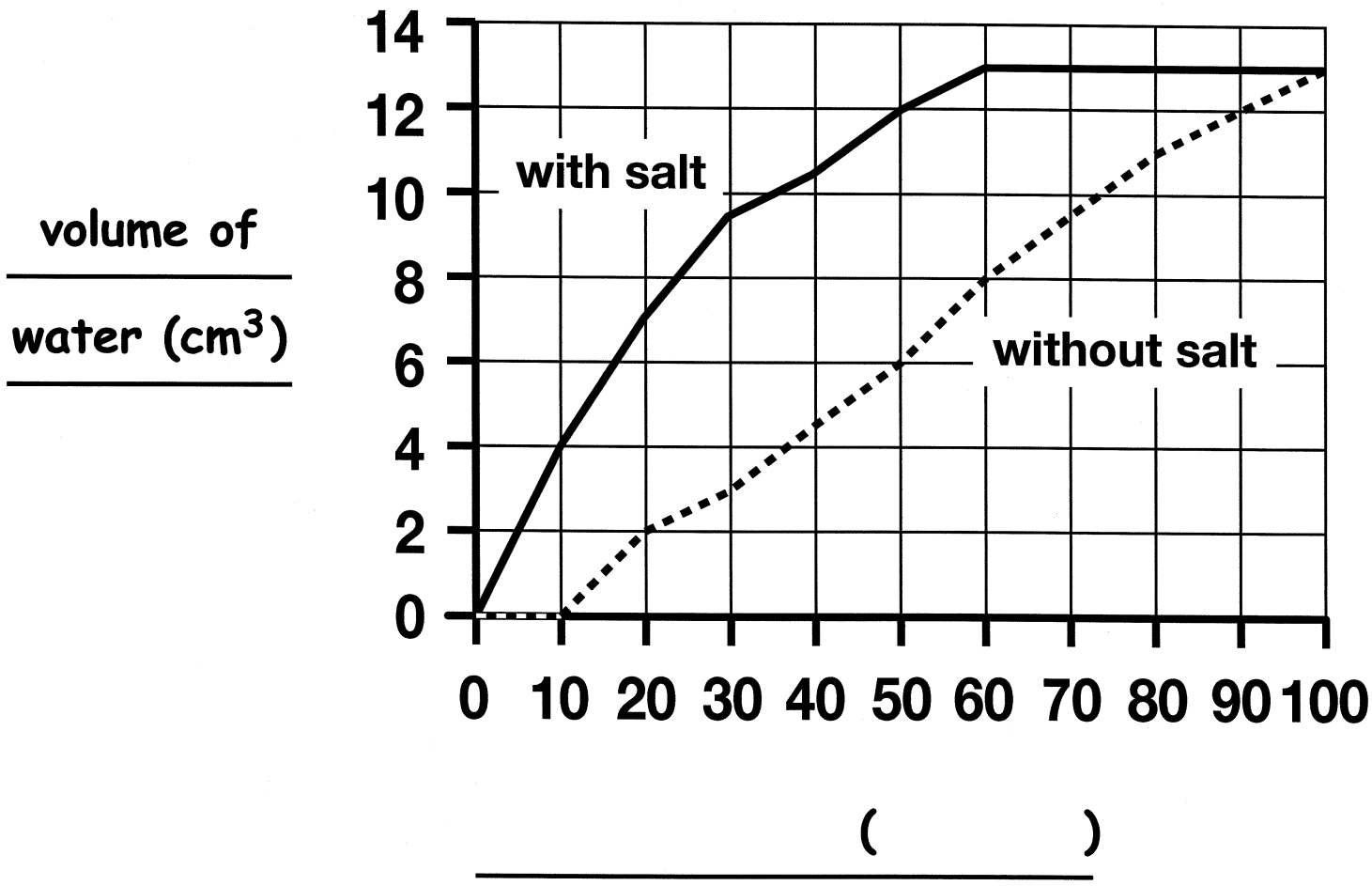
Write the label and the units for the other axis. [1 mark]



(c) What has Josh found out about the effect of salt on melting ice? [1 mark]

THIS QUESTION CONTINUES ON THE NEXT PAGE

Here is the graph again.



(d) Josh concludes 'The more salt I add, the steeper the line on the graph will be'.

Josh's results on the graph do not support his conclusion.

Tick one box to show why his results do not support his conclusion. [1 mark]

The line on the graph did not get steeper. ☐

He used the same amount of ice each time. ☐

He did not try different amounts of salt. ☐

He only measured the water every ten minutes. ☐

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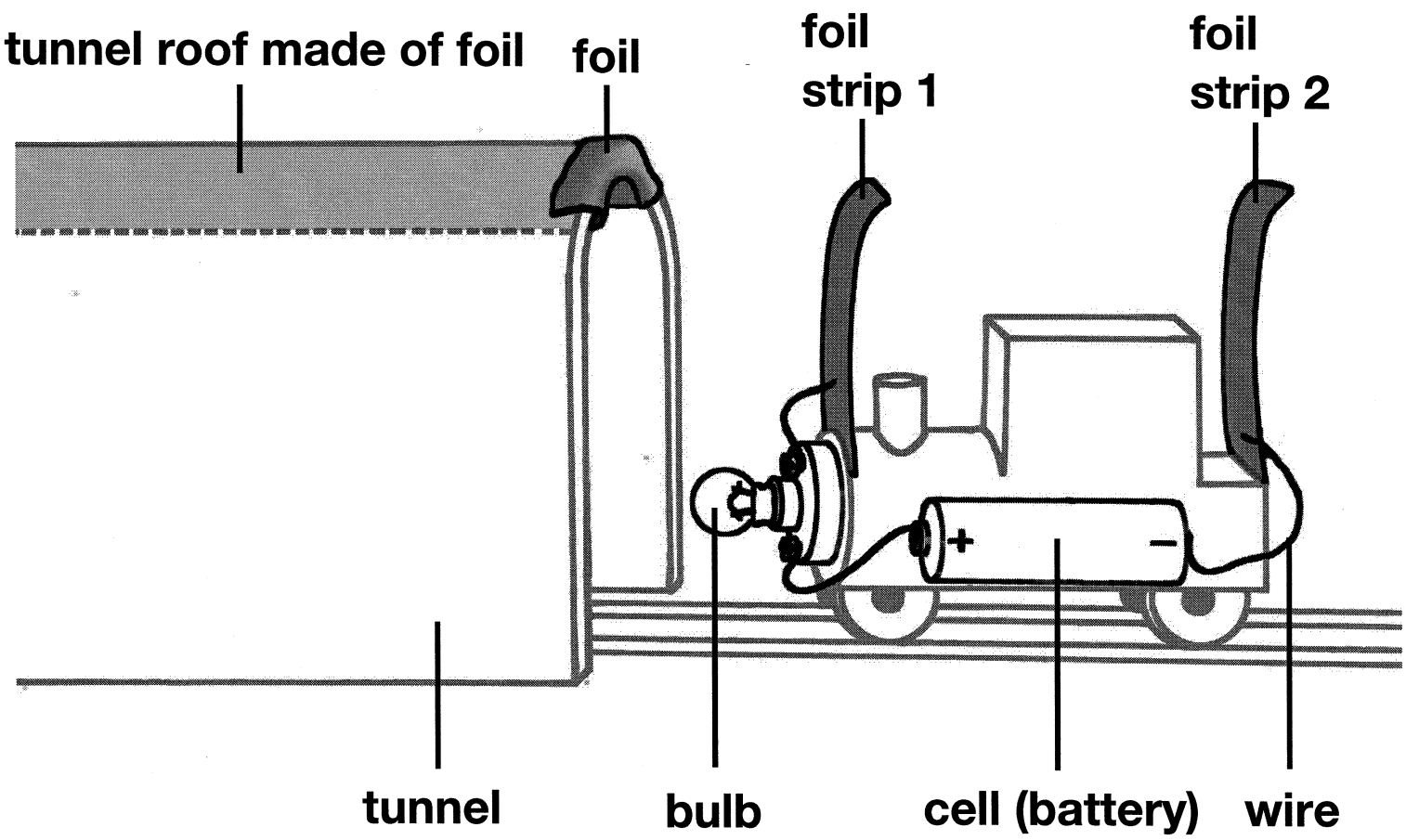
TURN OVER FOR THE NEXT QUESTION

8. Train in the tunnel

(a) Andrea wants a light bulb to light up when her toy train is pushed through a tunnel. She makes an electric circuit for her toy train.

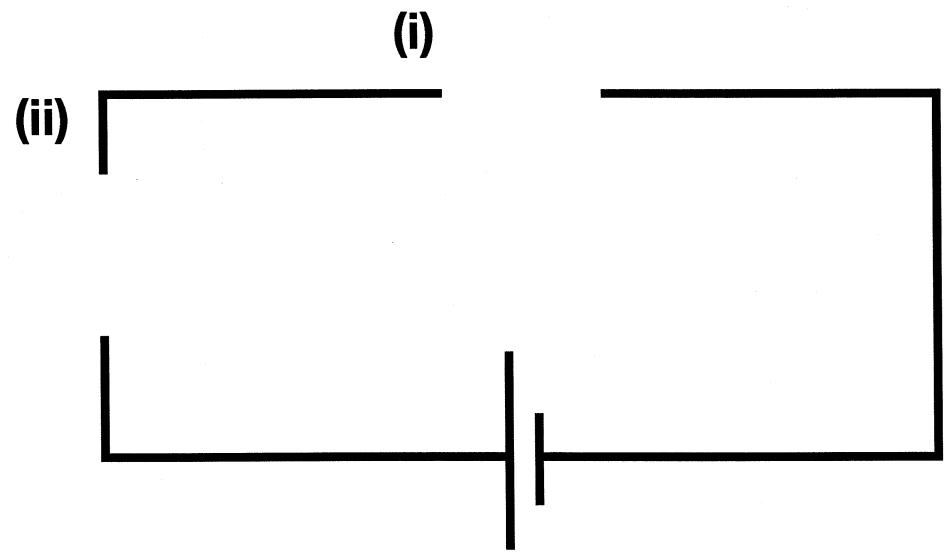
Andrea makes a tunnel with a foil roof.

The picture shows Andrea's tunnel and the wiring on her train.



The foil strips on the train act like a switch. When both foil strips on the train touch the foil inside the tunnel roof, the bulb lights up.

Complete the circuit diagram below by drawing the switch and the bulb to show the circuit on Andrea's train.
[2 marks]



(b) Give one property of metal foil which makes it a good material for Andrea to use as a switch. [1 mark]

(c) When only one foil strip on the train is touching the foil in the tunnel, the bulb does not light up.

Complete the sentence to explain why the bulb does not light up. [1 mark]

The circuit _____

_____

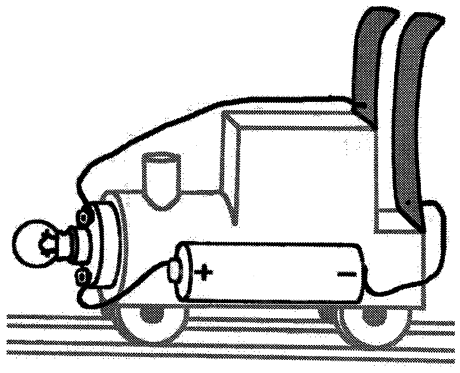
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(d) **The bulb on the train only lights up when all of the train is inside the tunnel.**

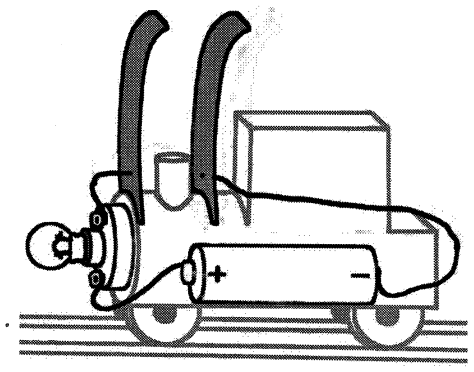
Andrea wants to improve her circuit so the bulb lights up when the train has only just entered the tunnel.

Which train has foil strips that would allow the bulb to light when the train has only just entered the tunnel?

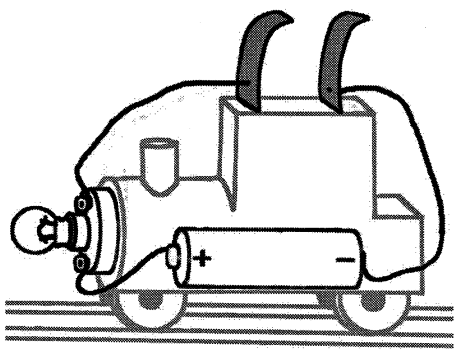
Tick one box. [1 mark]



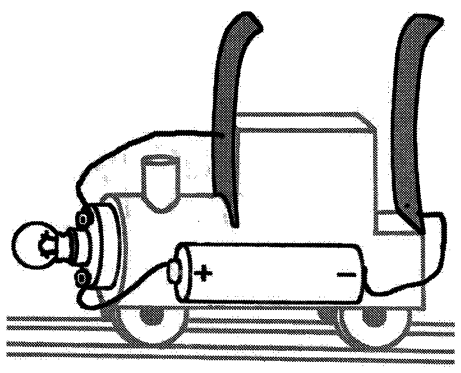
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END OF TEST

PLEASE CHECK YOUR ANSWERS

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