Cambridge Assessment International Education

Cambridge Primary Checkpoint

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

9411009470

SCIENCE **0097/01**

Paper 1

35 minutes

You must answer on the question paper.

No additional materials are needed.

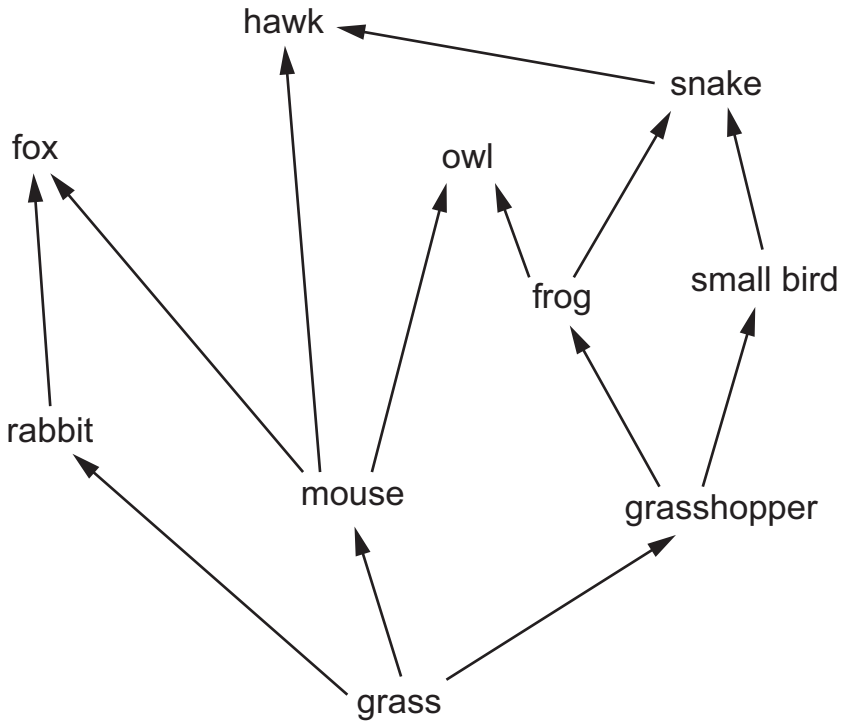
INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You should show all your working in the booklet.
- You may use a calculator.

INFORMATION

- The total mark for this paper is 40.
- The number of marks for each question or part question is shown in brackets [ ].

1 Look at the living things in this food web.



(a) What do the arrows in the food web represent?

.....

[1]

(b) Write down **one** food chain in this food web which contains five living things.

[2]

(c) A gardener sprays the grass with a toxic substance to kill weeds growing in the grass.

Some of the hawks die.

Use the food web to explain why.

.....

.....

.....

[2]

2 Boiling and evaporation are physical changes that are reversible.

(a) The same change of state happens in both boiling and evaporation.

Complete the sentence that describes this change of state.

In boiling and evaporation a ..... changes into a

.....

[1]

(b) Describe **two** differences between boiling and evaporation.

1 .....

.....

2 .....

.....

[2]

(c) What is the name of the process that is the reverse of boiling and evaporation?

..... [1]

(d) Tick (✓) the boxes that show a physical change.

baking a cake ☐

burning wood ☐

compressing (squeezing) a gas ☐

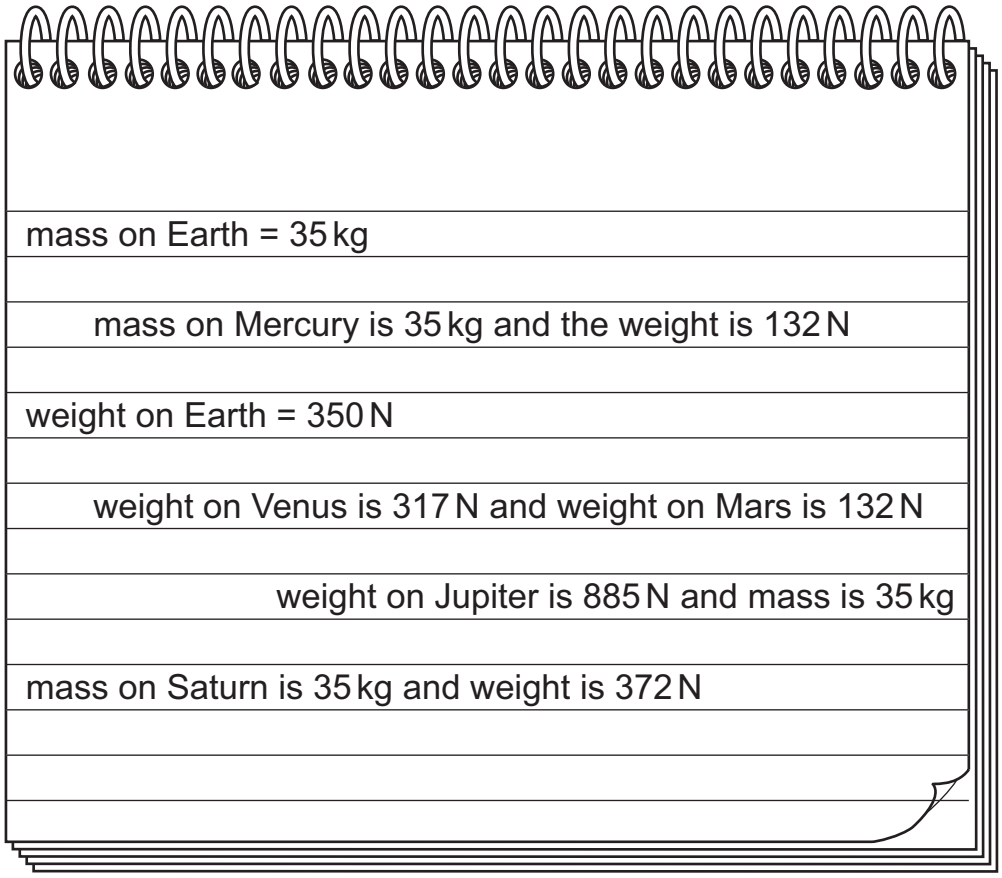
dissolving salt in water ☐

[1]

3 Blessy has a mass of 35 kg on Earth.

She uses the internet to find her mass and weight on different planets.

Blessy writes her notes in a notebook.



(a) Complete the table of results using her notes.

planet	**mass in kg**	**weight in N**
Mercury	35	132
Venus		.....
Earth	35	350
Mars		.....
Jupiter	.....	.....
Saturn	35	372

[1]

(b) The mass on Venus and the mass on Mars are missing from her notes.

Complete the sentences.

The mass on Venus is ..... kg and the mass on Mars is ..... kg.

Gravity is different on different planets.

When gravity changes, the mass of Blessy .....

When gravity changes, the weight of Blessy .....

[2]

(c) Mass is measured in kg and weight is measured in N.

Write down **one other** way mass on Earth is different to weight on Earth.

.....

..... [1]

4 Most fossils form in rock.

(a) The statements show the stages in fossil formation.

Put the statements in order from stage **1** to stage **6**.

Two have been done for you.

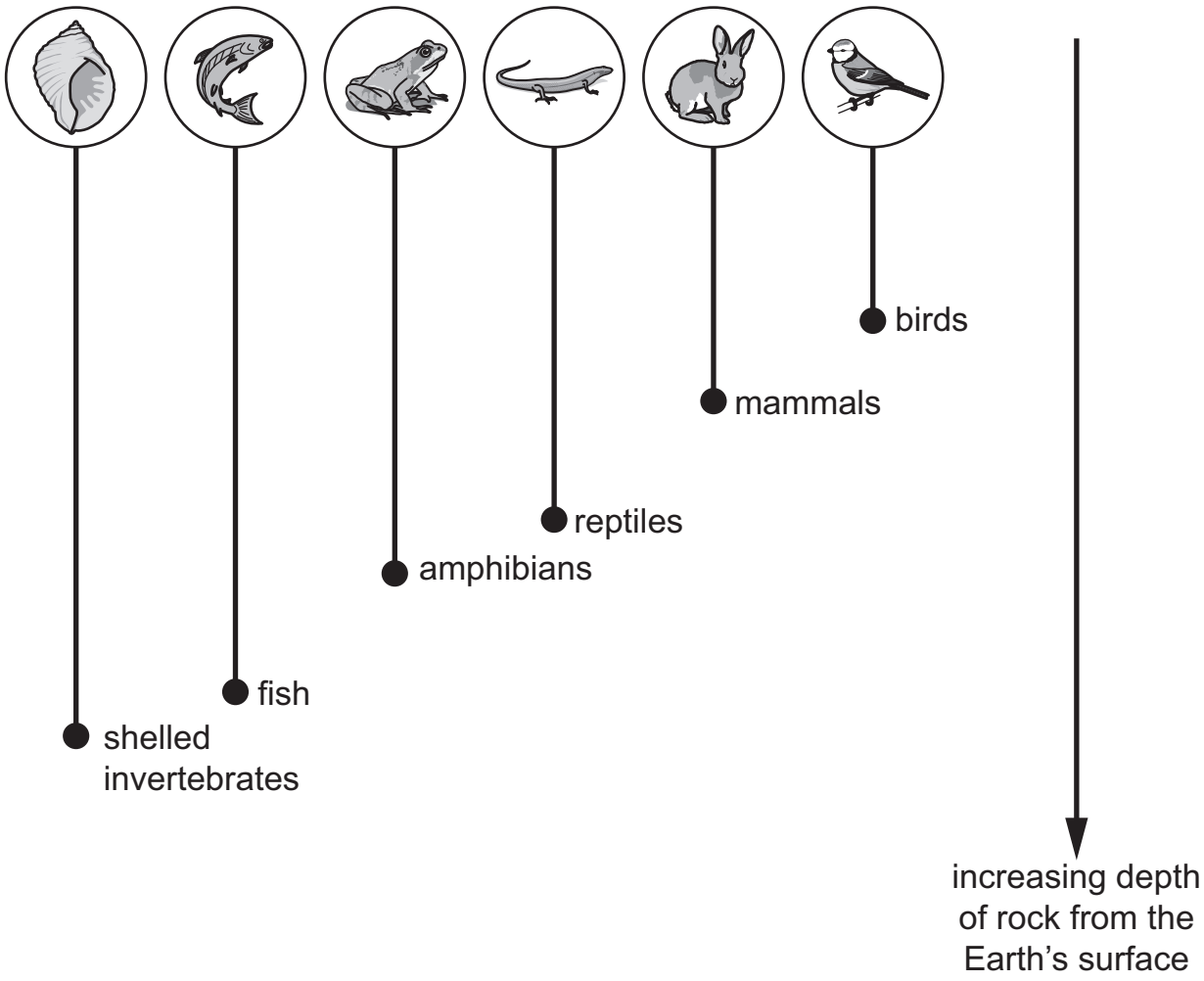
statement	stage
more sand and clay build up and harden	**4**
animal dies	
soft tissues decompose leaving hard bones	**3**
animal quickly buried by sand and clay	
erosion of rocks so fossils are seen	
gradually the bones are replaced by minerals	

[2]

(b) Fossils are as old as the rocks surrounding them.

The deeper the rocks below the surface of the Earth, the older the rocks.

Look at the diagram showing the depth of different fossils.



Complete the sentences about the information in the diagram.

The oldest fossils are of .....

The youngest fossils are of .....

[1]

5 Chen investigates the boiling point of different salt solutions.

In his first experiment he:

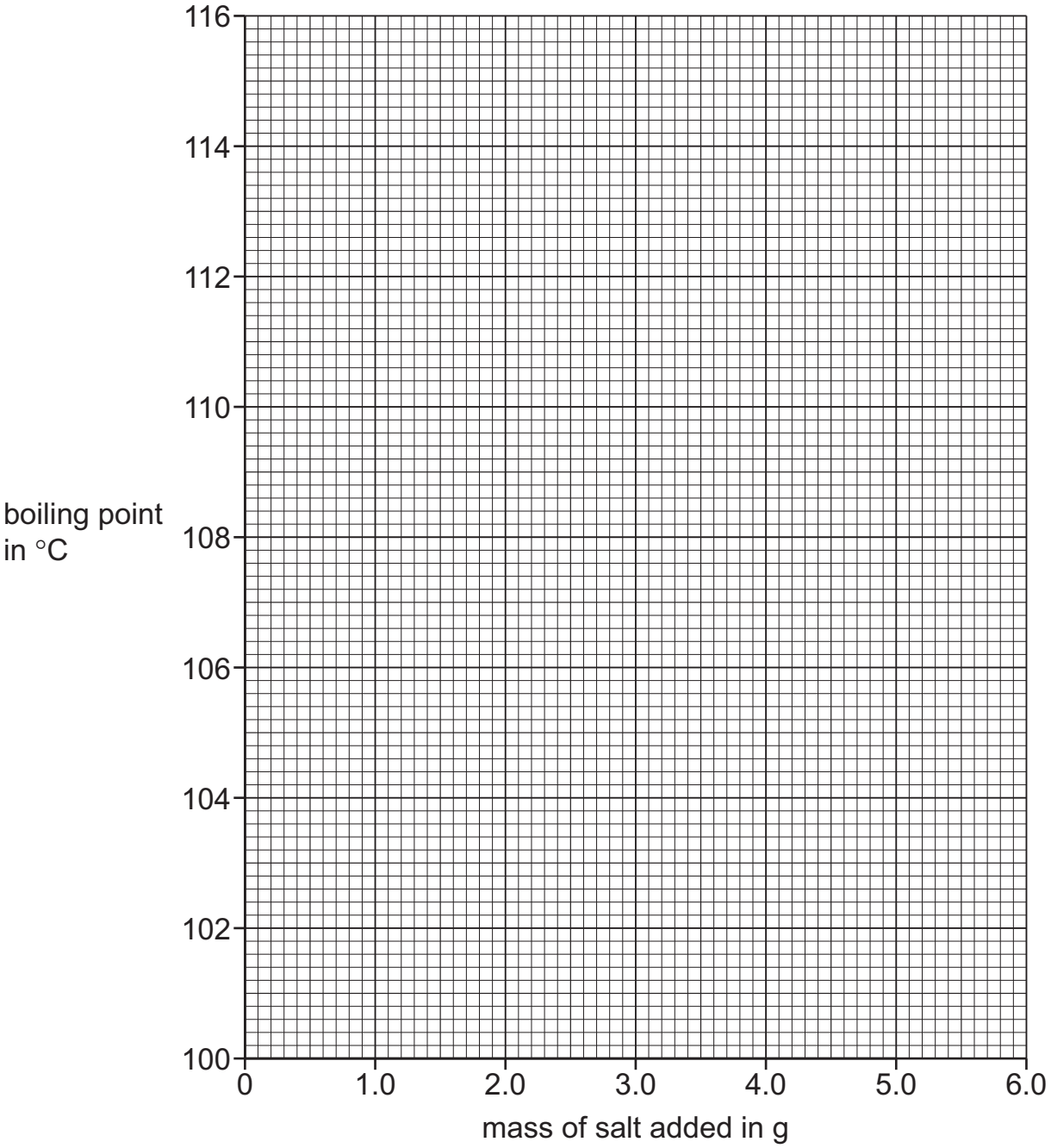
- adds 1.0 g of salt to 100 cm^3 of water
- stirs the mixture until the salt dissolves
- heats the salt solution until it boils
- measures the boiling point of the salt solution.

Chen repeats the experiment using different masses of salt.

Look at the table of his results.

mass of salt added in g	**boiling point in °C**
1.0	102
2.0	104
3.0	106
4.0	108
5.0	110

(a) Plot a graph of the results on the grid.



[1]

(b) Draw a straight line through the points. [1]

(c) Chen does another experiment.

This time he uses 6.0 g of salt.

Predict the boiling point of the salt solution.

..... °C [1]

(d) What is the boiling point of pure water?

..... °C [1]

6 Cats have a similar circulatory system to humans.

Arteries transport blood from the heart.

(a) Write down the names of **two other** blood vessels that transport blood in a cat.

1 .....

2 .....

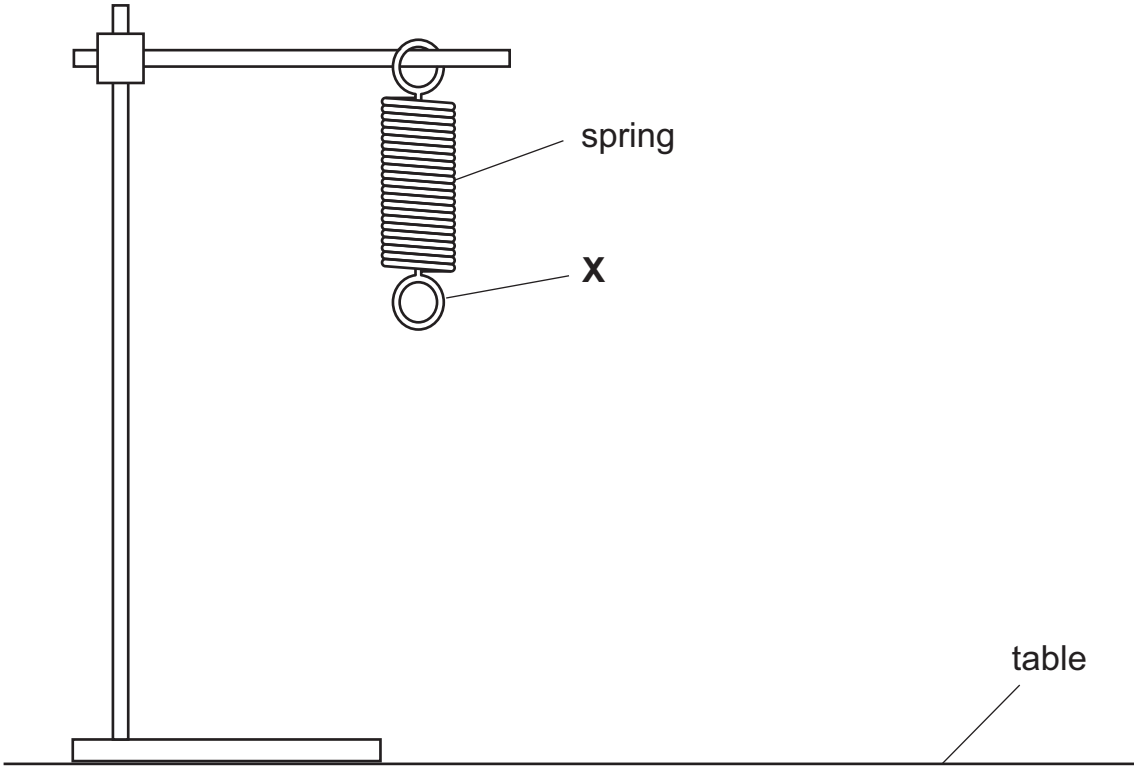
[2]

(b) What is the function of the heart?

..... [1]

7 Oliver investigates forces.

He uses this equipment.



(a) Oliver puts a large mass on the spring at **X**.

Write down **one** thing Oliver does to make his investigation safe.

.....

..... [1]

(b) Complete the sentences.

When Oliver puts a large mass on the spring at **X**, the spring .....

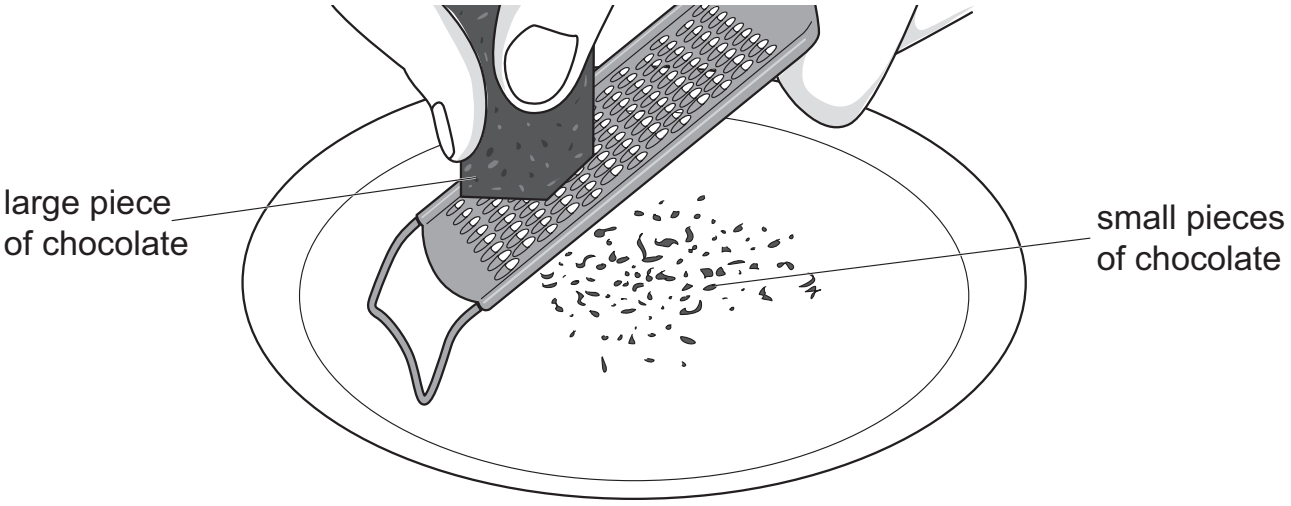
..... .

This happens because the large mass causes a ..... .

[2]

8 Jamila investigates the rock cycle using chocolate.

(a) She grates chocolate to show how one type of rock is formed.



Jamila:

- grates large pieces of dark chocolate, milk chocolate and then white chocolate
- adds layers of the small pieces of the different types of chocolate to a beaker
- presses the layers of small pieces of chocolate together.

Which word describes the process when Jamila layers the different types of chocolate?

Circle the correct answer.

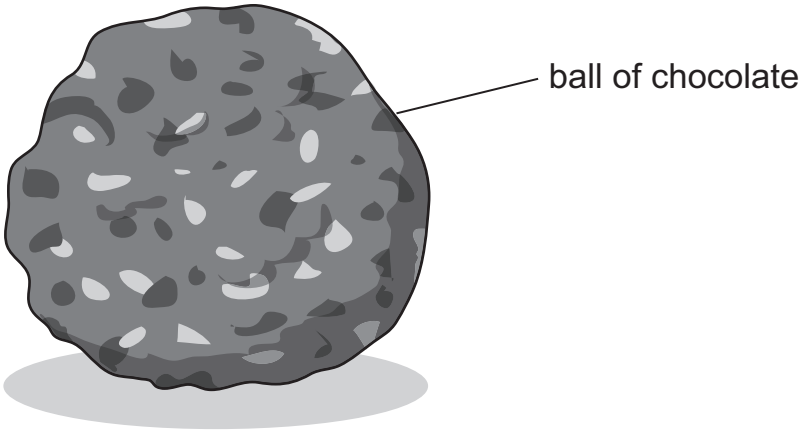
burial **erosion** **metamorphism** **sedimentation**

[1]

(b) Jamila now shows how a different type of rock is formed.

She takes the layers of chocolate out of the beaker.

Jamila rolls the chocolate in her warm hands and makes it into a ball.



Which word describes this process?

Circle the correct answer.

burial **erosion** **metamorphism** **sedimentation**

[1]

(c) Jamila wants to show how igneous rock is formed.

Describe **two** things she does to the ball of chocolate to show how igneous rock is formed.

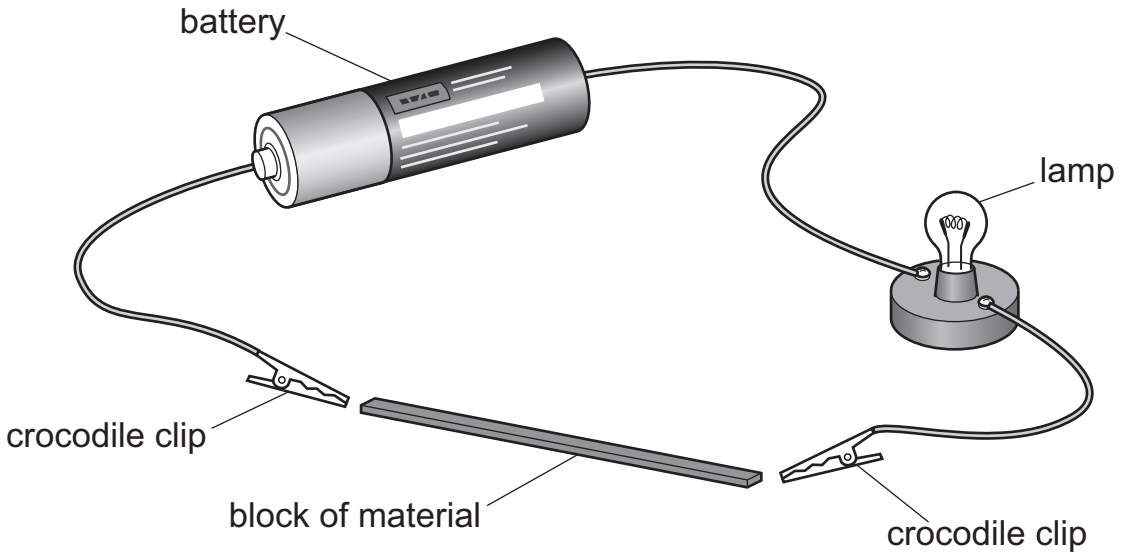
1 .....

2 .....

[2]

9 Gabriella investigates the electrical conductivity of some materials.

The diagram shows the equipment she uses.



Gabriella:

- completes the circuit by touching the crocodile clips to the block of material
- records if the lamp is on or off
- repeats the investigation with different blocks of material.

Gabriella predicts **all** the materials conduct electricity.

(a) Look at her results.

material	lamp on or off
copper	on
iron	on
plastic	off
sulfur	off

Tick (✓) to show if Gabriella's prediction is correct.

yes ☐

no ☐

Explain your answer.

.....

.....

..... [1]

(b) Electrical conductivity is one property of a material.

Name the property that describes how well heat is transferred through a material.

..... [1]

10 The human body has defence mechanisms which prevent infection by bacteria.

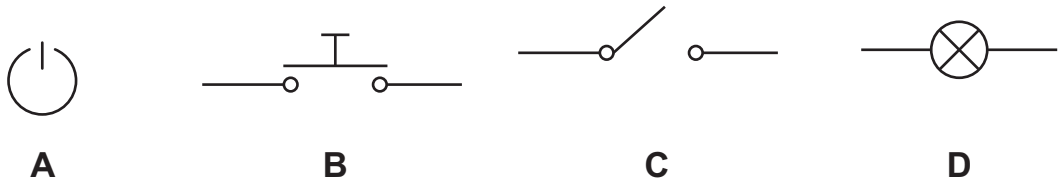
Write down **two** of these defence mechanisms.

1 .....

2 .....

[2]

11 Mike uses secondary sources to find out about symbols in electrical circuits.



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

E **F** **G** **H**

Which symbols are conventional electrical symbols?

Circle the correct answer.

A and **B** **C** and **D** **E** and **F** **G** and **H**

[1]

12 Look at the table showing the amount of minerals, air and water in different soils.

soil	minerals	air	water
A	low	high	medium
B	low	low	high
C	high	high	medium
D	high	low	low

Organic content helps soils hold water and allows air to the roots of plants.

Organic content also provides important minerals to help plants grow.

Which soil has the **highest** organic content?

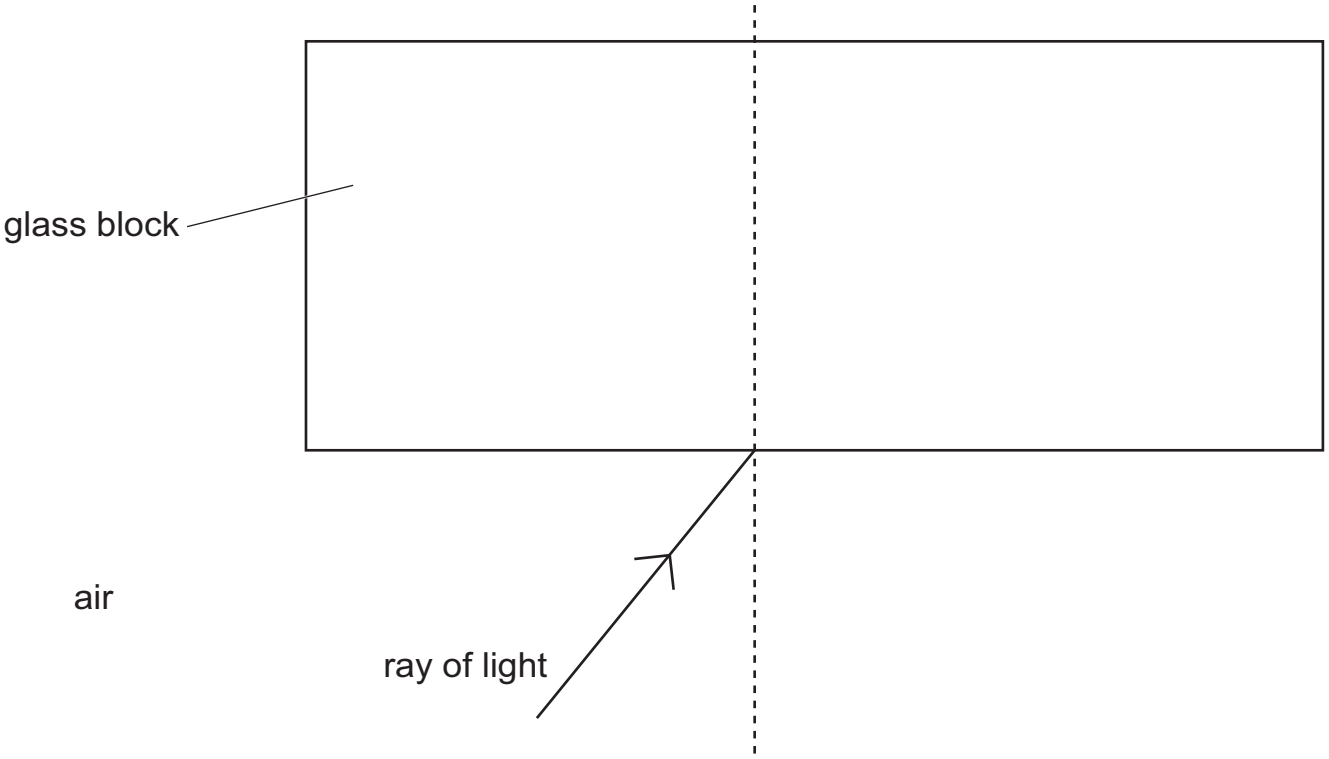
..... [1]

13 Many physical changes take place in the human body during puberty.

Write down **one** physical change that takes place in **both** males and females during puberty.

..... [1]

14 The diagram shows a ray of light just about to enter a glass block.



(a) The ray of light enters the glass block.

Draw the ray of light inside the glass block. [1]

(b) Describe what happens to the ray of light as it moves from the air into the glass block.

.....

..... [1]

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