Cambridge Assessment International Education

Cambridge Primary Checkpoint

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

0254405375

SCIENCE **0097/02**

Paper 2 **April 2025**

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

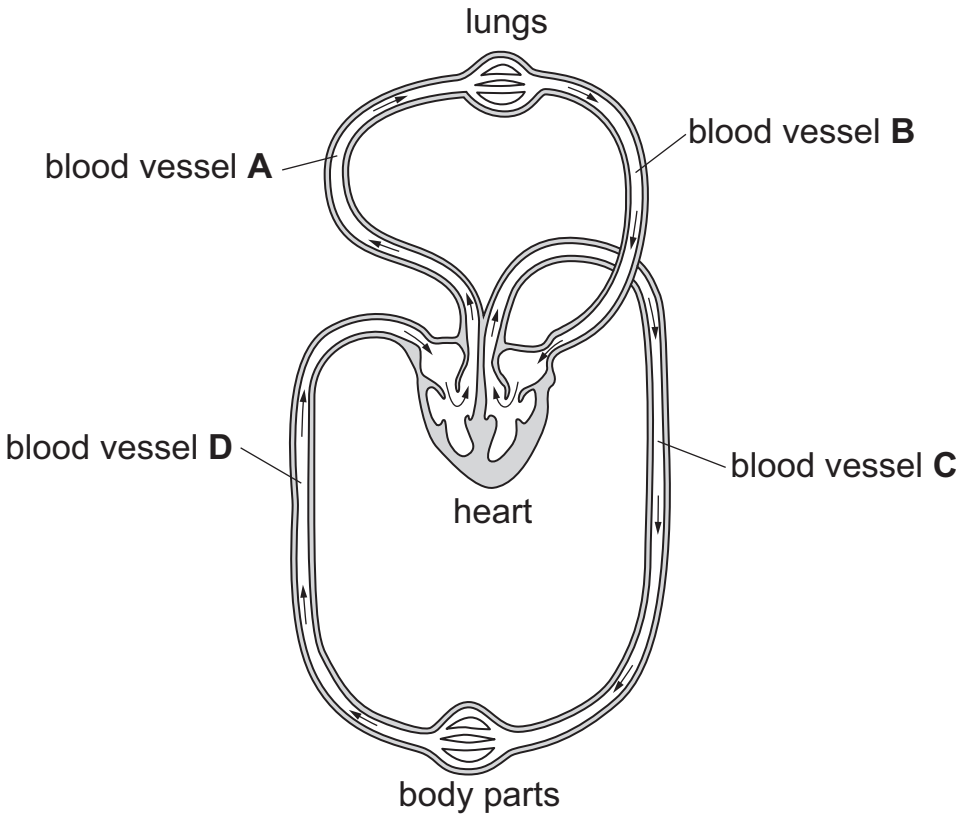
- The total mark for this paper is 40.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **20** pages. Any blank pages are indicated.

[Turn over

1 Look at the model of the human circulatory system.

The arrows show the direction the blood flows.



(a) Arteries transport blood away from the heart.

Which **two** blood vessels **A**, **B**, **C** or **D** are arteries?

..... and ..... [1]

(b) Arteries are one type of blood vessel.

Write down the **two other** types of blood vessel.

1 .....

2 .....

[2]

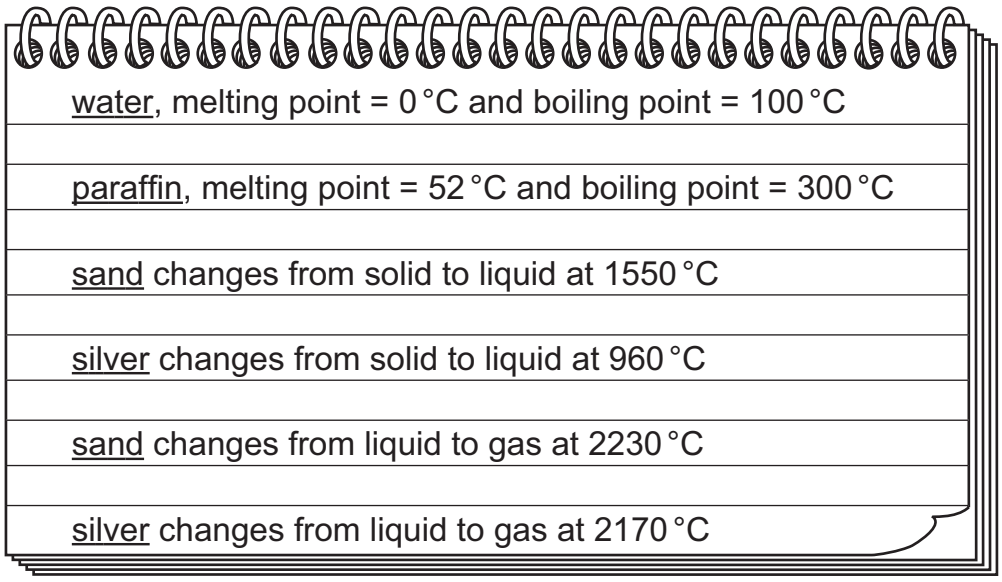
(c) Write down **two** substances blood transports.

1 .....

2 .....

[2]

2 Mia collects information about different substances.



(a) Complete the table.

substance	**melting point in °C**	**……**
water	0	100
paraffin	52	……
sand	1550	……
silver	……	……

[2]

(b) Complete the sentence.

Choose from the list:

chemical reaction

product

property

reactant

The temperature at which a substance changes state is a

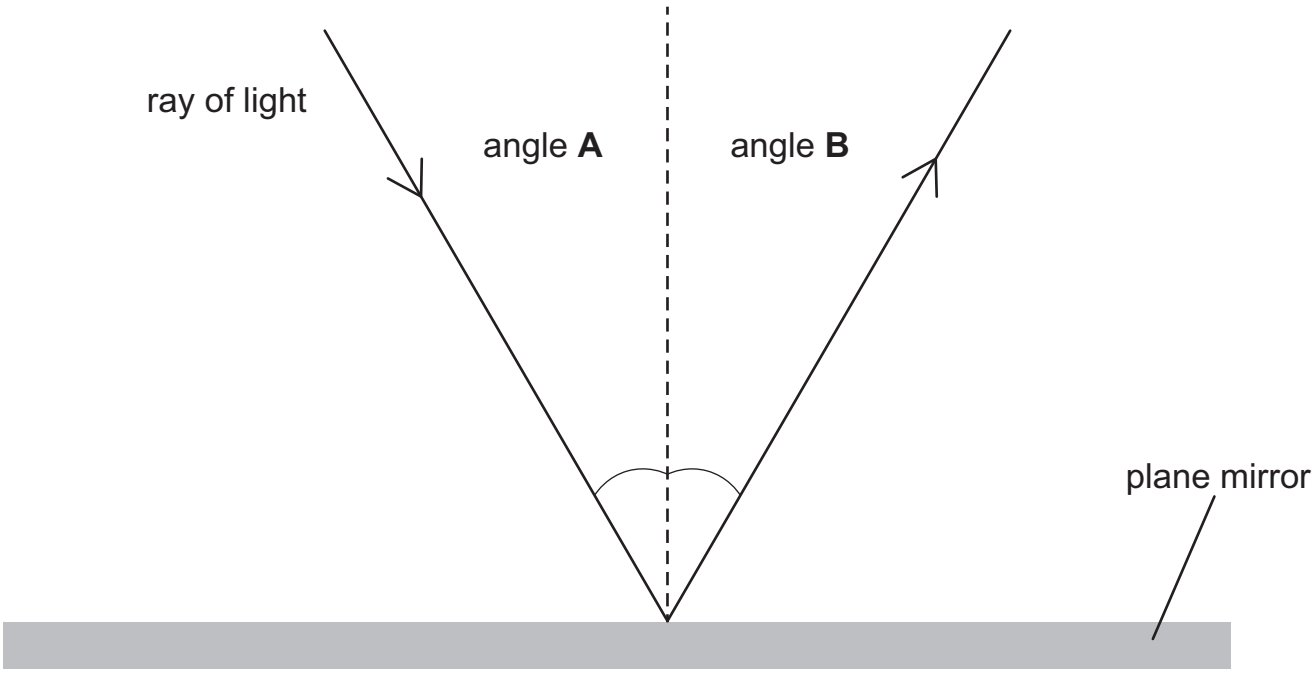
…… of the substance.

[1]

3 Anastasia investigates light.

She:

- shines a ray of light towards a plane mirror
- records the values of angle **A** and angle **B**.

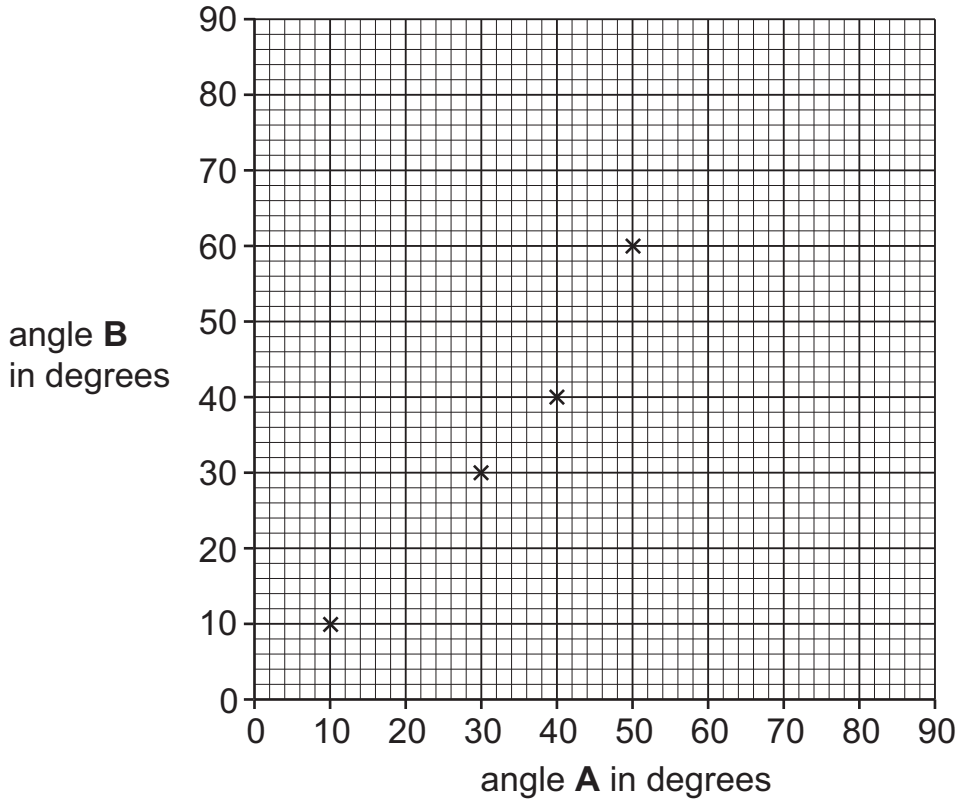


Anastasia repeats her investigation for different angles.

These are her results.

angle A in degrees	**angle B in degrees**
10	10
30	30
40	40
50	50
70	70
80	80

Anastasia starts to plot a graph of her results.



(a) Anastasia has plotted **one** of the points incorrectly.

Draw a circle on the graph around the incorrectly plotted point. [1]

(b) Complete the graph by:

- plotting the **two** last points
- drawing a line of best fit.

[2]

(c) Anastasia changes angle **A** to 63 degrees.

What is the value of angle **B**?

.....° [1]

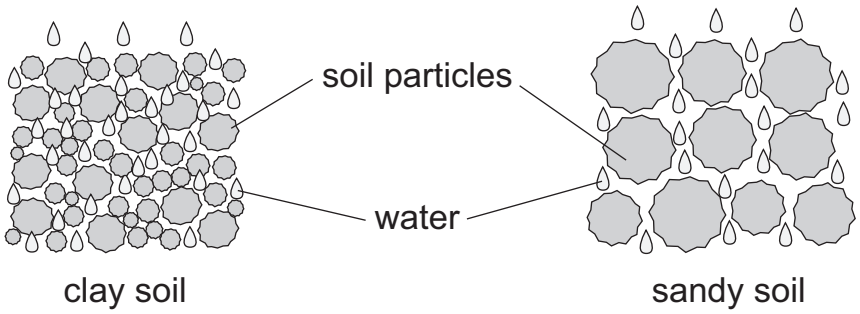
(d) Complete the conclusion.

As angle **A** increases by 10 degrees, angle **B** .....

..... . [1]

4 This question is about types of soil.

Look at the diagram of clay soil and sandy soil.



(a) Vegetables grow best in clay soil.

Clay soil has a high water content.

Describe how the **structure** of clay soil allows it to have a high water content.

.....

..... [1]

(b) Fruit trees grow well in a soil that has a lower water content than clay soil.

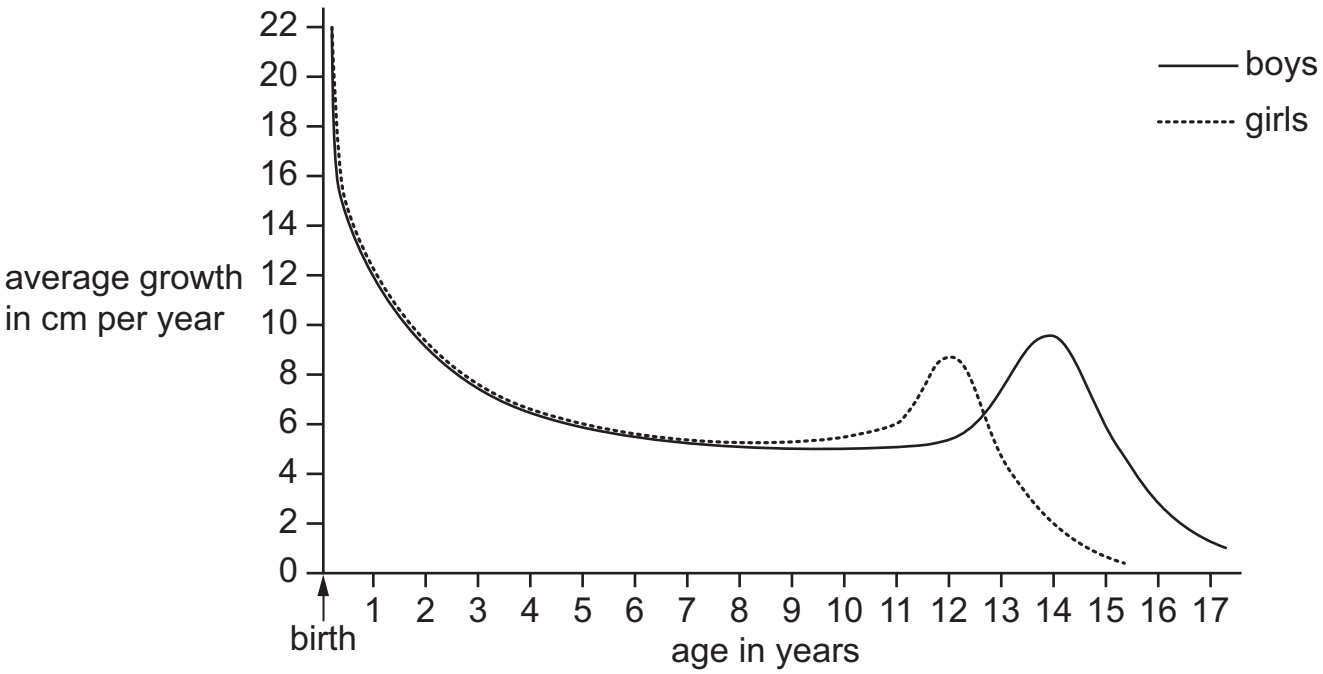
A farmer adds sandy soil to the clay soil.

Explain how this changes the **structure** of the clay soil to have a lower water content.

.....

..... [1]

5 The graph shows the average growth of girls and boys every year between birth and age 17.



(a) Boys and girls both have a sudden increase in growth.

Use the graph to complete the sentence.

Boys have a sudden increase in growth between age ..... years

and age ..... years.

[1]

(b) The graph shows boys and girls both have a sudden increase in growth.

Use the graph to write down **one other** similarity about their growth.

.....

..... [1]

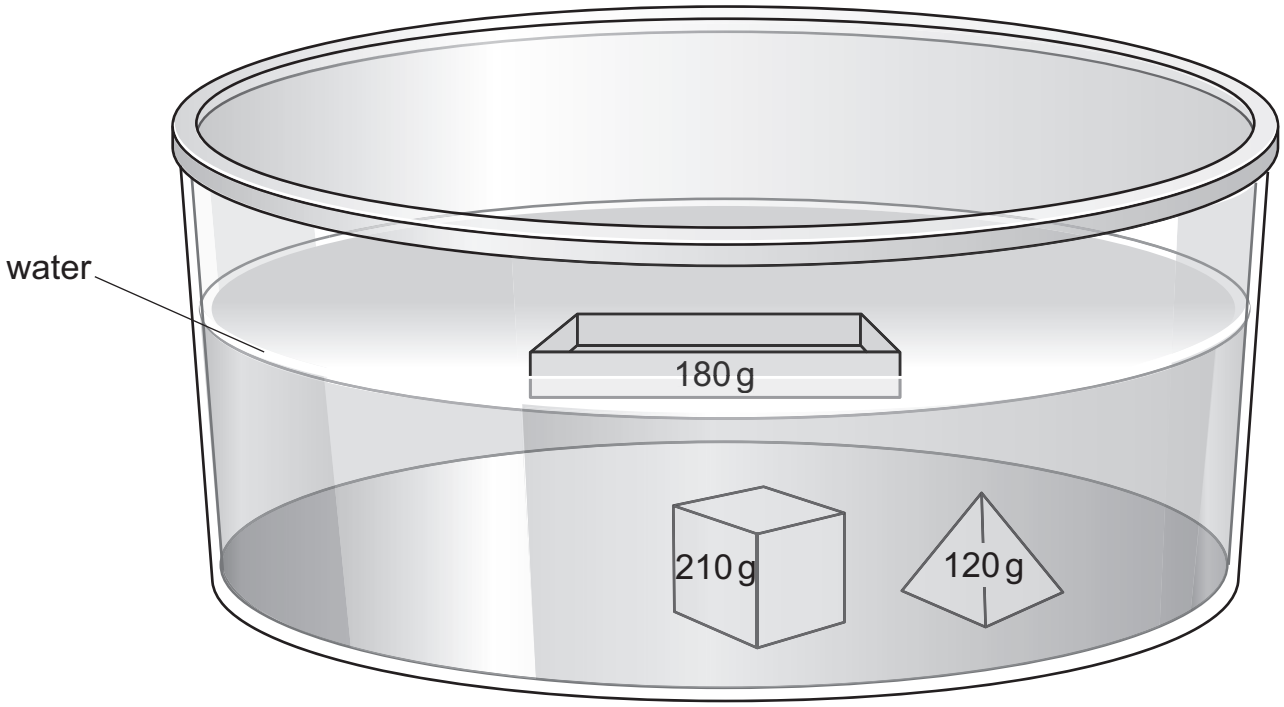
(c) What causes the sudden increase in growth in boys and girls?

..... [1]

6 Aiko puts three metal objects onto the surface of water.

The objects are made from the same metal.

The mass of each object is shown.



Two of the objects sink and one object floats.

Explain why this object floats.

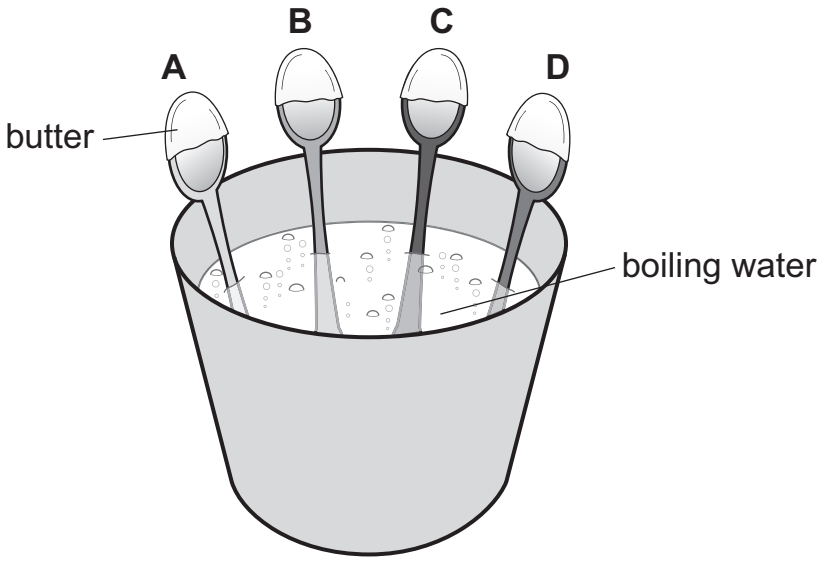
.....

..... [1]

7 Blessy investigates a property of spoons made of different materials.

She:

- covers the top of four different spoons with butter
- puts the four different spoons in boiling water.



Each spoon **A**, **B**, **C** and **D** is made of a different material.

For each spoon, Blessy measures the time it takes for the butter to melt and drip into the water.

(a) This is a fair test investigation.

Complete the sentences.

A **control variable** is the size of the spoons.

The **independent variable** is .....

The **dependent variable** is .....

[1]

(b) Which property of the spoons is Blessy investigating?

Circle the correct answer.

electrical conductivity

hardness

melting point

thermal conductivity

[1]

(c) Look at her results.

spoon	time for butter to melt and drip into the water in seconds
A	20
B	62
C	47
D	98

Explain what her results show.

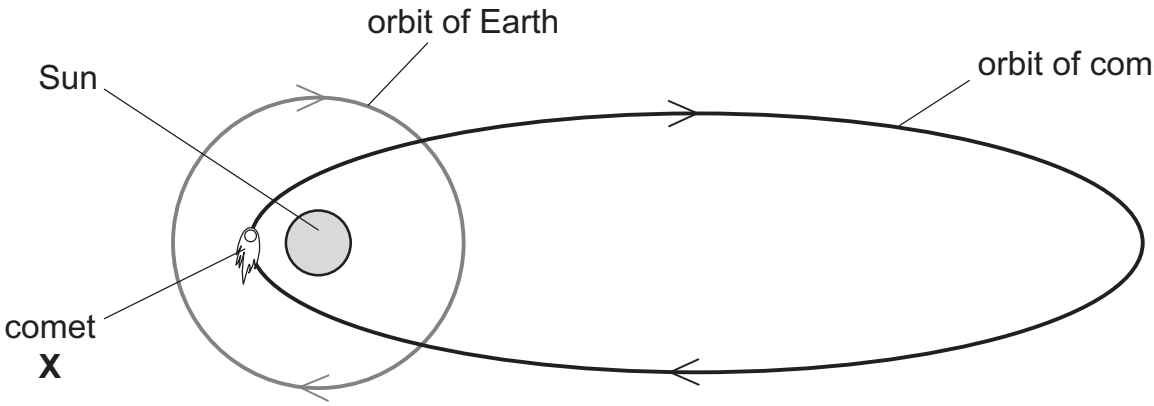
.....

.....

..... [2]

8 Comets in our Solar System orbit the Sun.

Look at the diagram.



Not drawn to scale

(a) A comet is visible from Earth when it is close to the Sun.

Comet **X** was visible from Earth during these years.

1759 1835 1910 1986

Predict when comet **X** will next be visible from Earth.

Show your working.

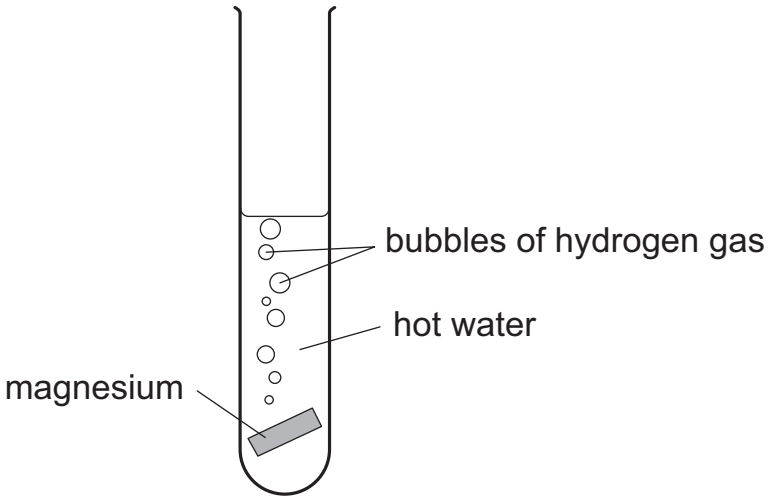
comet **X** will next be visible from Earth in the year ..... [2]

(b) A comet is one type of body that orbits the Sun.

Write down **one other** type of body that orbits the Sun.

..... [1]

9 A teacher adds magnesium to hot water.



The magnesium reacts with the hot water.

Hydrogen gas and magnesium hydroxide are made.

(a) The teacher says:

'A chemical reaction has taken place.'

Write down **one observation** that supports this statement.

..... [1]

(b) Write down the names of the **two reactants** in this chemical reaction.

..... and ..... [1]

(c) Write down the names of the **two products** in this chemical reaction.

..... and ..... [1]

10 Malaria is a disease spread by an insect called a mosquito.

(a) The table shows the number of people with malaria each year in one country.

year	number of people with malaria
2015	615
2016	742
2017	653
2018	377
2019	372
2020	102
2021	68

Write down the year when the number of people with malaria was the highest.

..... [1]

(b) Putting mosquito nets over beds reduces the number of people with malaria.

Suggest why.

.....

..... [1]

(c) Mosquitoes breed and lay their eggs in water.

A toxic chemical is sprayed on the water to kill mosquito eggs.

The water contains small plants.

Look at the food chain.

small plants ⟶ **fish** ⟶ **birds**

Use the food chain to explain why the toxic chemical kills the birds.

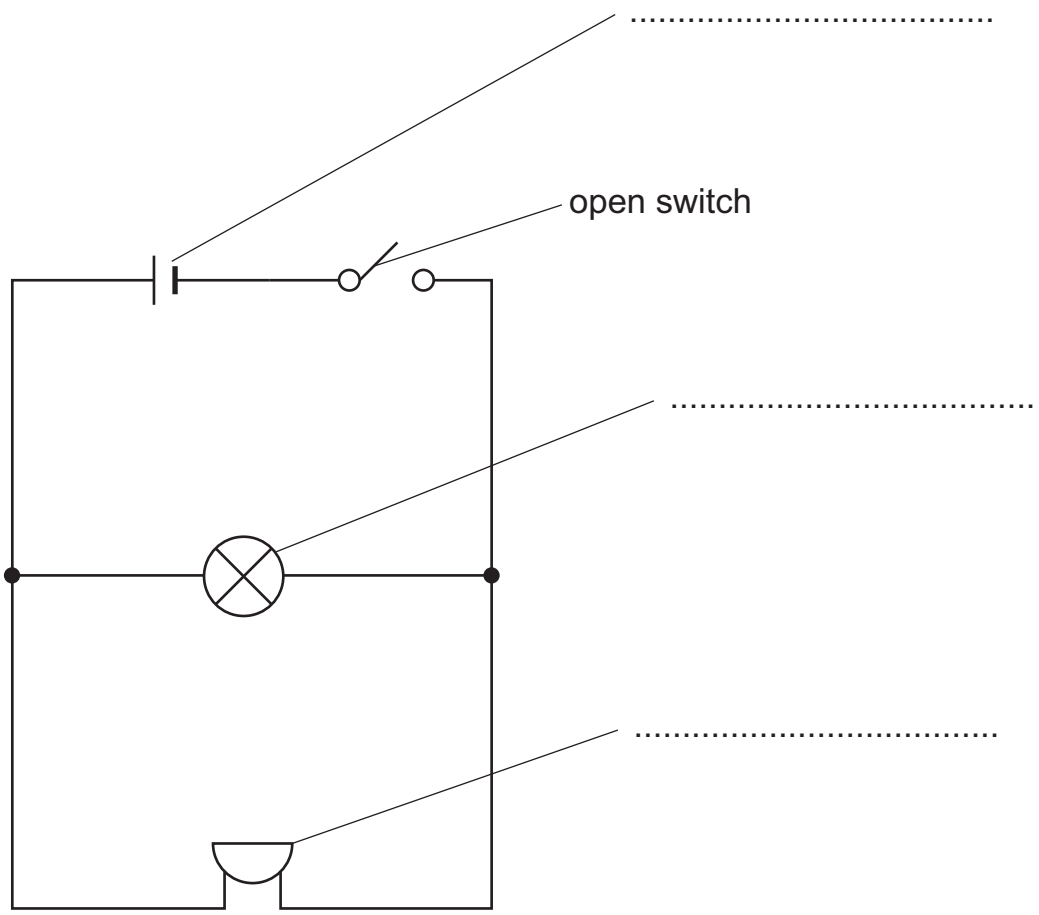
.....

.....

.....

..... [2]

11 The diagram shows an electrical circuit drawn using symbols.



(a) Complete the diagram to show the names of the symbols.

One has been done for you.

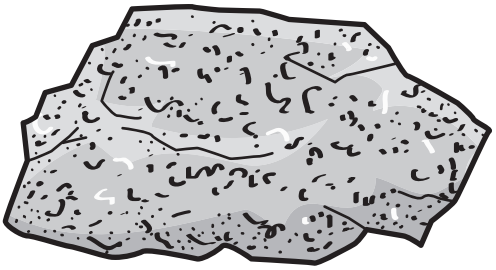
[2]

(b) The switch in the diagram is an **open** switch.

Draw the symbol for a **closed** switch.

[1]

12 (a) Granite is an igneous rock.

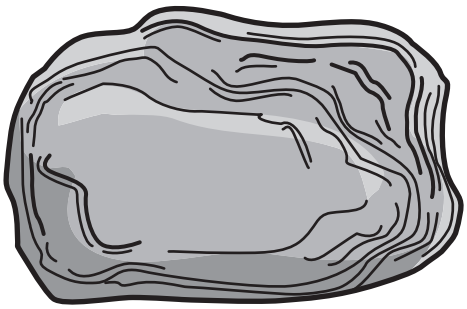


Describe how granite is formed.

.....

..... [1]

(b) Shale is a sedimentary rock.



Describe how shale is formed.

.....

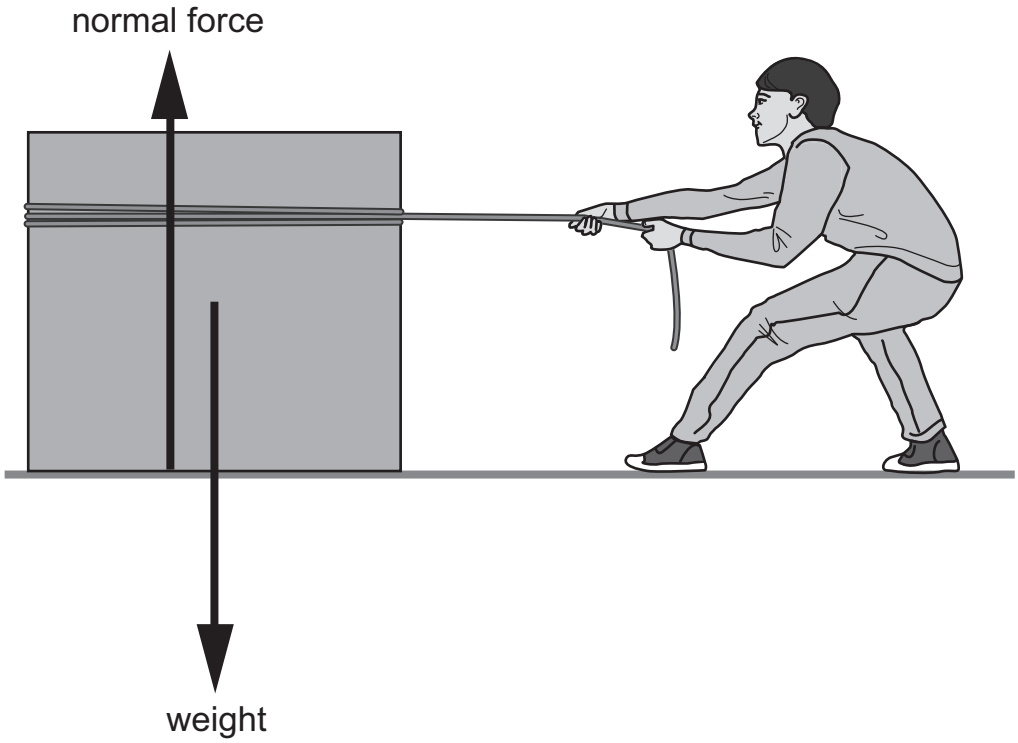
..... [1]

[Turn over

13 Rajiv tries to move a very heavy box.

The box is too heavy for him to move.

Look at the diagram.



Complete the force diagram to show why the box does **not** move.

Draw and label arrows to show:

- the force from Rajiv – label this force **P**
- the frictional force – label this force **F**.

[2]

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