Cambridge Assessment International Education

Cambridge Primary Checkpoint

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

0955294413

SCIENCE **0097/02**

Paper 2 **April 2024**

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.

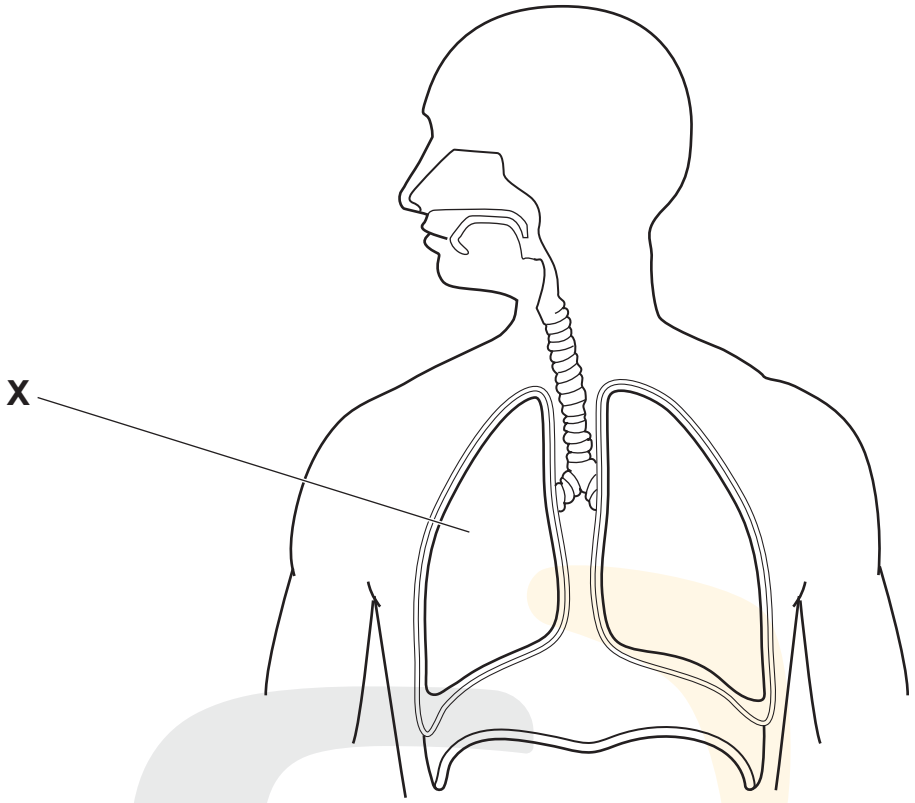
INFORMATION

- 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.

1 The human body contains different organ systems.

The diagram shows **one** organ system inside the human body.



(a) Circle the name of this organ system.

circulatory

digestive

respiratory

reproductive

[1]

(b) Complete the sentence to describe what happens inside organ **X**.

Inside organ **X** ..... moves from the air into the .....

[1]

2 Carlos puts a piece of magnesium into vinegar.

The mixture fizzes and bubbles because hydrogen gas is made.

A substance called magnesium ethanoate is also made in this reaction.

(a) Write down the name of **one** reactant and **one** product in this reaction.

reactant .....

product .....

[2]

(b) Carlos observes that the mixture fizzes and bubbles.

This shows a chemical reaction takes place.

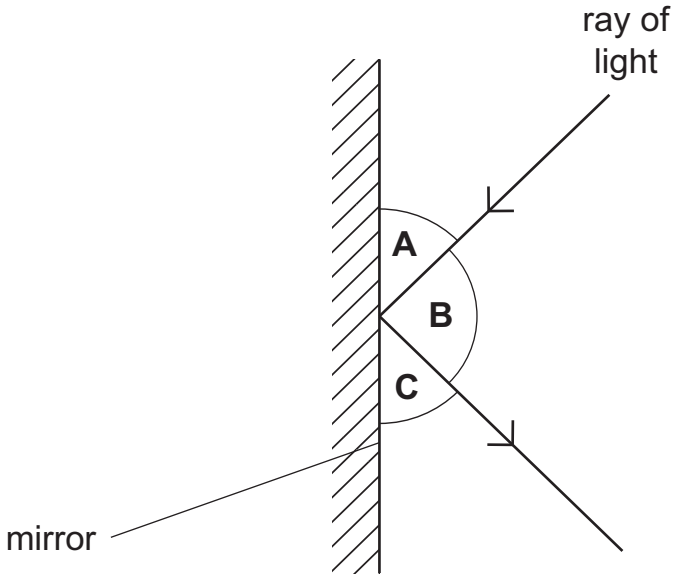
Suggest **two other** observations Carlos makes which show a chemical reaction takes place.

1 .....

2 .....

[2]

3 Lily investigates what happens to a ray of light when it touches a mirror.



(a) Write down the name of the process Lily investigates.

.....

[1]

(b) Lily changes the size of angle **A** and then measures angles **A**, **B** and **C**.

She writes her results in a table.

angle A in degrees	angle B in degrees	angle C in degrees
10	160	10
20	140	20
30	120	30
40	100	40
50	80	50

Describe **two** things that happen as angle **A** increases in size.

1 .....

.....

2 .....

.....

[2]

4 Disease may be spread by swallowing food or water that contains harmful organisms such as bacteria.

(a) Write down the name of **one other** type of organism that spreads disease.

.....[1]

(b) Describe **two** ways good hygiene controls the spread of diseases carried in food and water.

1 .....

2 .....

[2]

5 Nitrogen and oxygen are two gases found in air.

They are both odourless gases.

Suggest **two other** properties of both nitrogen and oxygen.

1 .....

2 .....

[2]

6 There are different types of soil.

(a) Complete the sentence.

Soils are classified based on their:

- clay content
- ..... content and
- organic content.

[1]

(b) Aiko collects information about two different plants.

Lavender grows best in well-draining soil.

Honeysuckle grows best in well-draining soil with lots of minerals.

A well-draining soil lets water leave the soil quickly.

Aiko makes some predictions.

Tick (✓) the correct prediction.

Clay soil is best for growing lavender because clay soil stops water leaving the soil. ☐

Clay soil is best for growing honeysuckle because clay soil contains only a few minerals. ☐

Soil with lots of organic material is best for growing lavender because this soil has a dark colour. ☐

Soil with lots of organic material is best for growing honeysuckle because this soil allows water to pass through. ☐

[1]

(c) Aiko investigates how sunflower plants grow in different soils.

She:

- uses four identical pots
- puts one sunflower seed in each pot
- adds different types of soil to each pot
- adds the same volume of water to each pot
- measures the height of the sunflower plants after 80 days.

Circle **all** the **control variables** in this investigation.

type of pot

number of seeds

volume of water

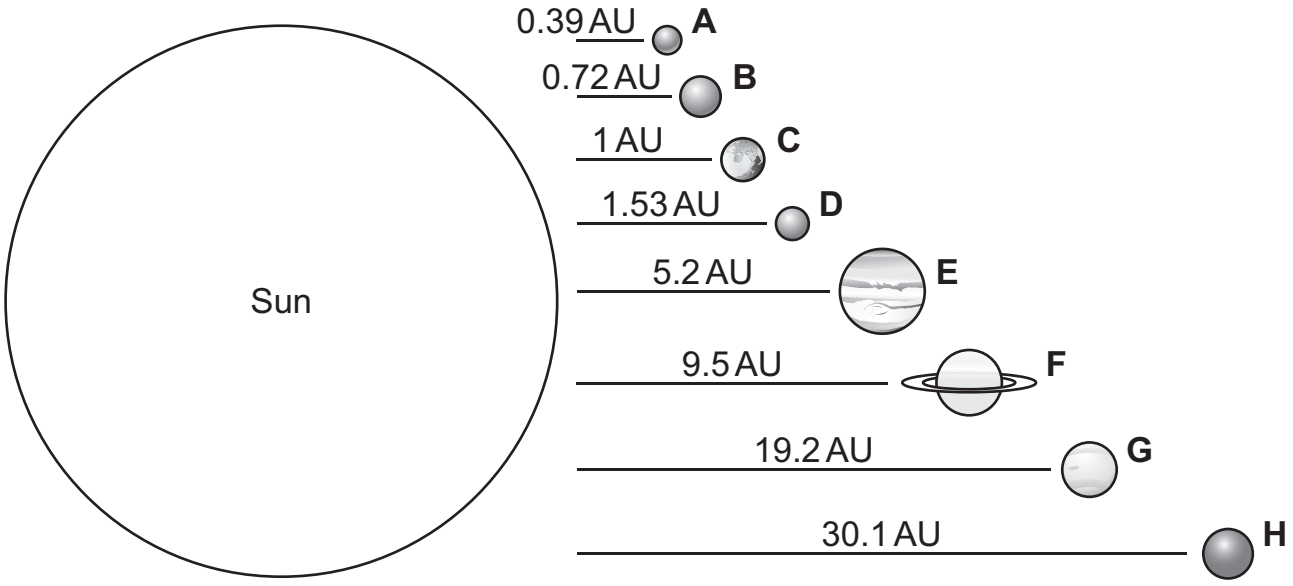
height of sunflower

[1]

7 Yuri draws a picture of the Sun and the eight planets.

The picture shows the distance between the Sun and each planet.

The distance between the Sun and Earth is 1 AU (astronomical unit).



Not drawn to scale

(a) Write down the names of the planets labelled **A**, **D** and **G**.

A .....

D .....

G .....

[1]

(b) Complete the sentences by writing the correct **letter** of the planet.

The planet with a distance of 5.2 AU from the Sun is .....

The distance from the Sun to Earth is 1 AU.

The planet with the most similar distance from the Sun to Earth is

.....

The planet almost 20 times further from the Sun than the Earth is

.....

[2]

(c) Complete the sentences.

A planet ..... on its own axis.

A planet ..... the Sun.

[1]

8 Mia investigates how different activities affect heart rate.

In her first experiment Mia:

- measures her resting heart rate by counting the number of beats in 1 minute
- walks for 5 minutes and then measures her heart rate again
- waits for her heart rate to return to resting heart rate.

She repeats the experiment using different activities.

Here are her results.

activity	**heart rate in number of beats in 1 minute**
resting	90
walking	125
jogging	140
running	150
fast running	170

(a) Mia does each activity for 5 minutes.

Explain why.

.....

..... [1]

(b) Write down the independent variable and the dependent variable in her investigation.

independent variable .....

dependent variable .....

[2]

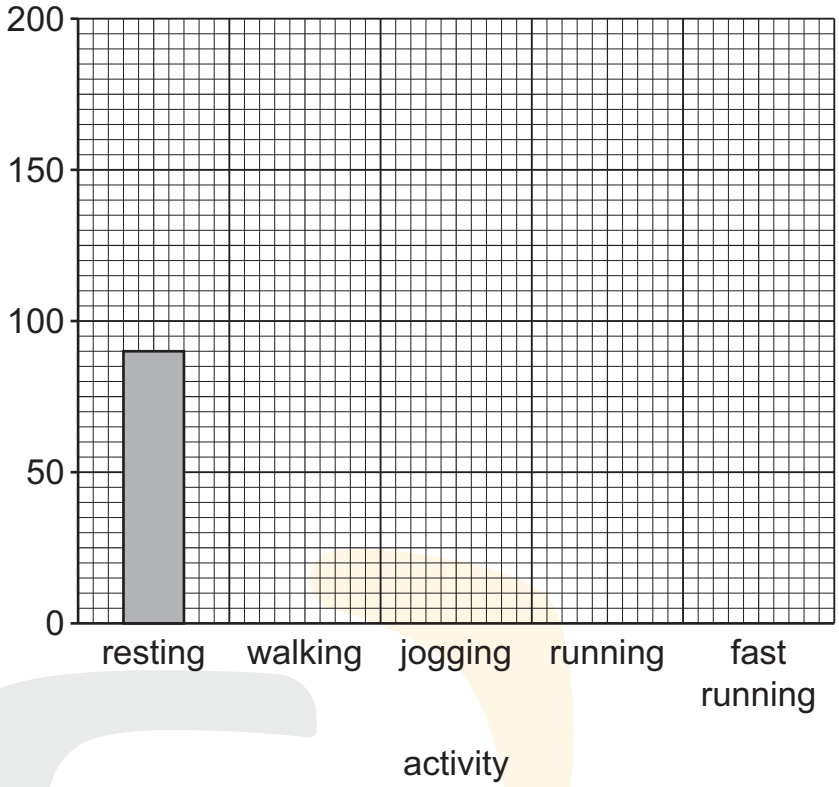
(c) Mia starts to draw a bar chart of her results.

Complete the bar chart.

.....

.....

.....



[2]

(d) Mia wants to improve her investigation.

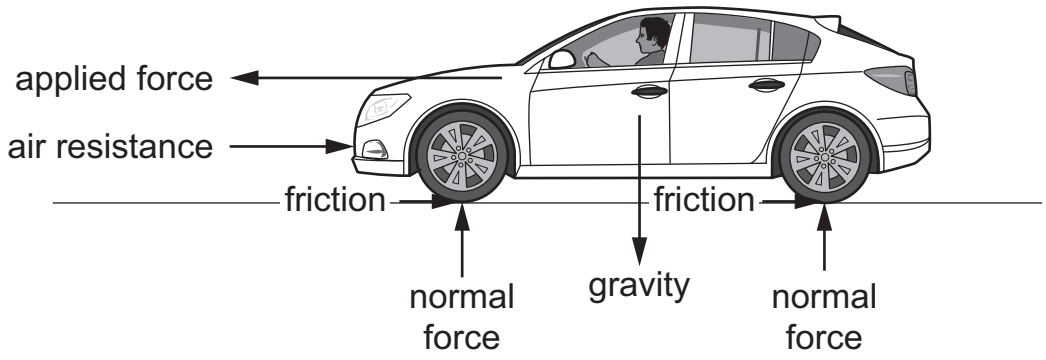
Describe and explain **one** way she improves her investigation.

description .....

explanation .....

[1]

9 This force diagram is a model.



Describe **two** ways this model is useful when describing the forces on a car.

1 .....

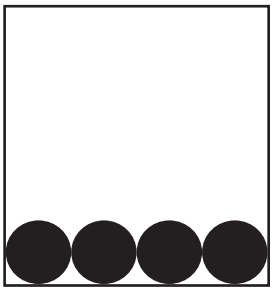
.....

2 .....

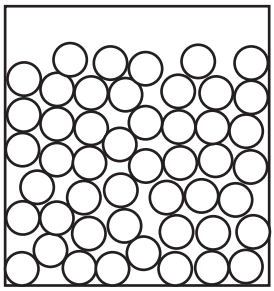
.....

[2]

10 Look at the diagrams that show particle models of solid citric acid and liquid water.



solid citric acid



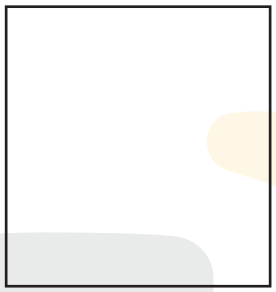
liquid water

● = citric acid particle

○ = water particle

(a) Citric acid dissolves in water to make a solution.

Draw the particle model of citric acid solution in the box.



citric acid solution

[2]

(b) Describe how increasing the temperature of water affects the dissolving of citric acid in water.

Explain your answer using the particle model.

description .....

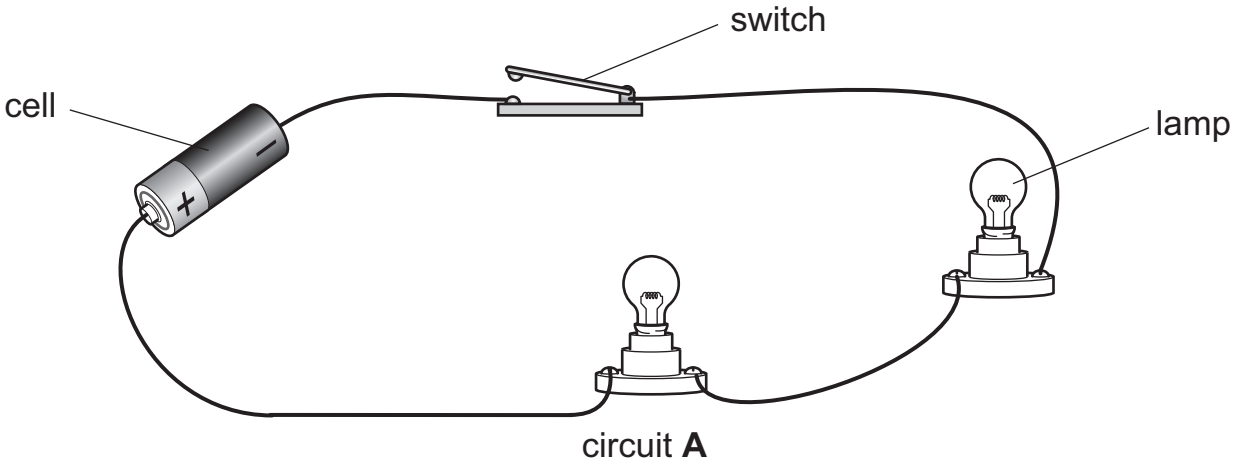
explanation .....

.....

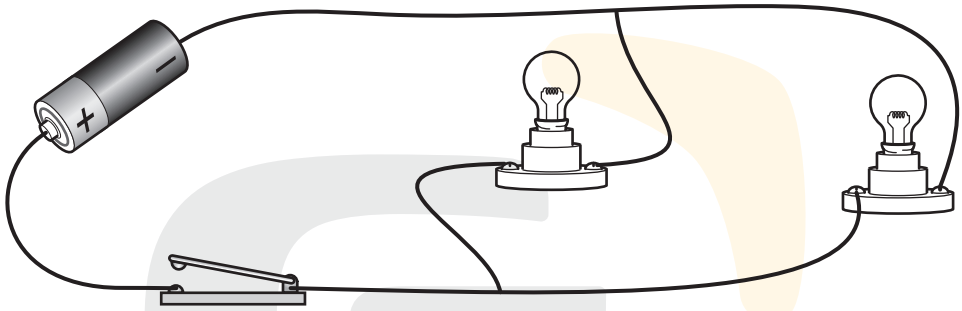
.....

[2]

11 Safia draws **two** electrical circuits.



circuit **A**



circuit **B**

(a) Draw circuit **A**, using conventional electrical symbols.

[3]

(b) The switches are in different positions in circuit **A** and circuit **B**.

Describe **one other** difference between circuit **A** and circuit **B**.

.....

..... [1]

(c) The cells in each circuit are the same.

The lamps in each circuit are the same.

Compare the brightness of the lamps in the **two** circuits.

Complete the sentences.

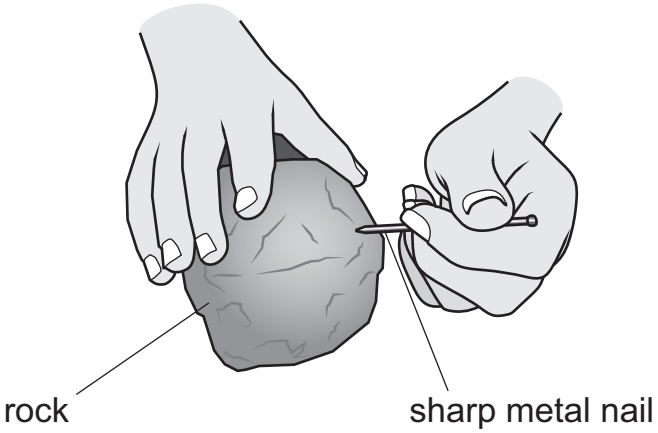
The lamps in circuit **A** are ..... than the lamps in circuit **B**.

The **two** lamps in circuit **B** are ..... brightness.

[1]

12 Ahmed wants to find out if a rock is hard or soft.

He scratches the rock with a sharp metal nail.



Ahmed writes notes to make sure he uses the sharp metal nail safely.

Ahmed:

- identifies the risk of using the sharp metal nail
- describes how to use the sharp metal nail safely.

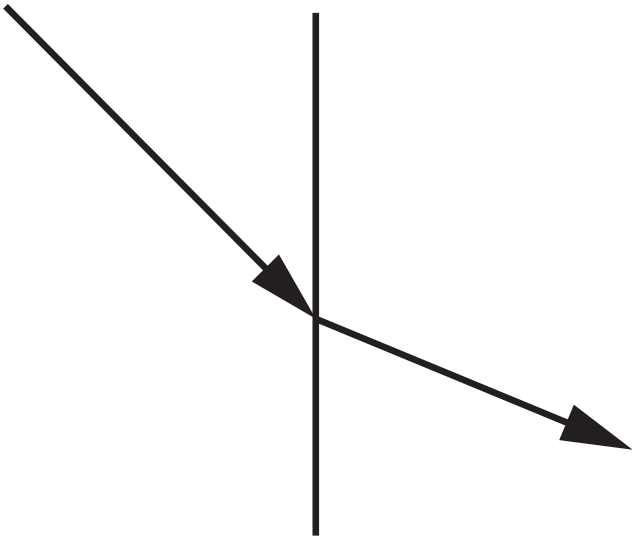
Complete the notes in his table.

risk of using the sharp metal nail	**how to use the sharp metal nail safely**
....	....

[1]

13 Pierre is learning about the properties of light.

He draws a model to show one of the properties of light.



Which property of light is Pierre modelling?

..... [1]

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