Cambridge Assessment International Education

Cambridge Primary Checkpoint

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

SCIENCE **0097/01**

Paper 1 **April 2023**

35 minutes

You must answer on the question paper.

No additional materials are needed.

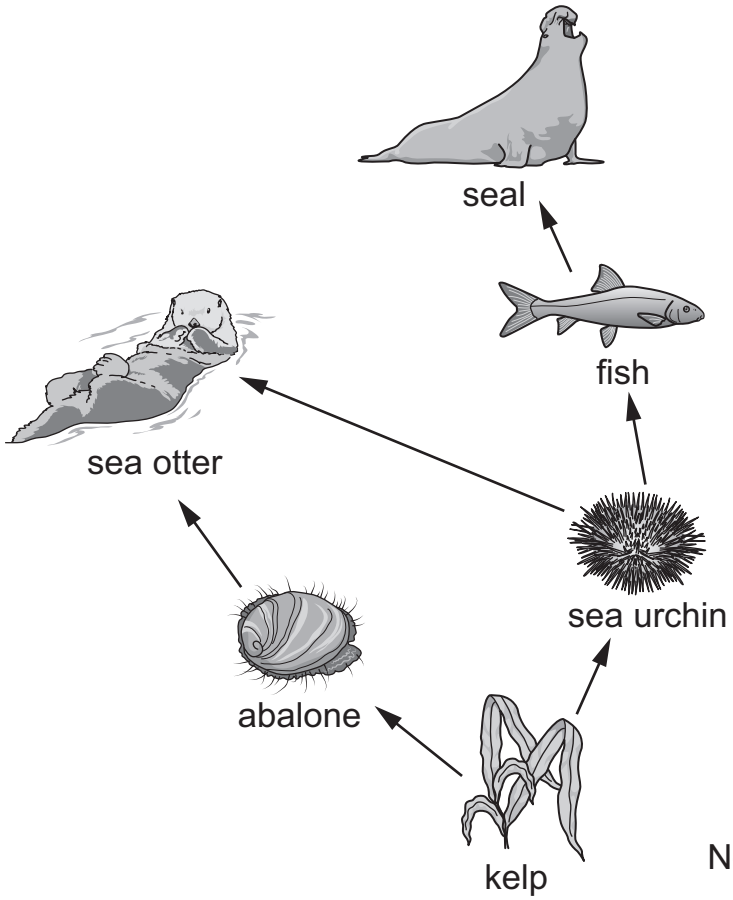
INSTRUCTIONS

- 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 The diagram shows an ocean food web.



(a) Write down a food chain from the food web that includes the fish.

.....

[1]

(b) Write down the name of **one herbivore** in the food web.

.....

[1]

(c) A toxic substance enters the ocean.

The kelp absorbs this toxic substance.

Explain how this toxic substance moves from the kelp to the sea otter.

.....

.....

.....

[2]

(d) Write down the name of the energy source for the food web.

.....

[1]

2 Rajiv adds a piece of iron to copper sulfate solution.

A chemical reaction takes place and the mixture becomes warmer.

Iron is a grey solid and copper sulfate is a blue solution.

After five minutes the iron is covered by a pink solid because copper is made.

The solution changes colour to green because iron sulfate is made.

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

.....

[1]

(b) Write down **one observation** that shows this chemical reaction takes place.

.....

[1]

(c) Describe **one measurement** Rajiv makes that shows a chemical reaction takes place.

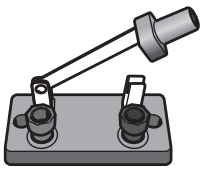
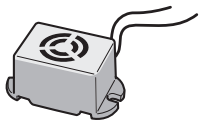
.....

[1]

3 There are different types of electrical circuits.

(a) Symbols are used to draw electrical circuits.

Complete the table by writing **one name** and drawing **three symbols**.

name	**diagram**	**symbol**
cell		
.....		
lamp		
buzzer		

[2]

(b) Chen makes two different electrical circuits.

He uses:

- two identical lamps in each circuit
- one cell in each circuit.

Complete the table by drawing **two** circuit diagrams.

type of circuit	circuit diagram
series	
parallel	

[2]

(c) Complete the conclusion.

The lamps are the brightest in the ..... circuit

because ..... [1]

4 Planet Earth has rocks and soil.

(a) The three rock types are metamorphic, igneous and sedimentary.

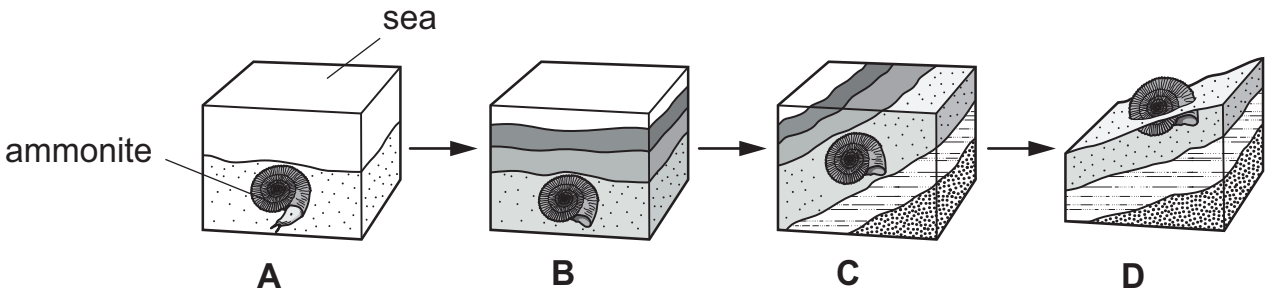
Draw a line to match each **rock type** to its correct **description**.

rock type	description
metamorphic	a very hard rock formed when lava from volcanoes cools
igneous	a very hard rock formed from other rocks using heat and pressure
sedimentary	formed when tiny pieces of rock are pressed together

[1]

(b) Fossils form in sedimentary rocks.

The pictures show how a fossil of an ammonite is formed and found.



Write descriptions for pictures **B** and **D**.

A Ammonite dies and falls to the bottom of the sea.

B .....

C Over millions of years the sedimentary rock moves.

D .....

[2]

(c) Mike compares two soils.

soil **A**

soil **B**

Soils are made from a mixture of:

- clay
- sand
- organic matter

Complete the sentences.

Soil **A** is mostly made from ..... because

.....

Soil **B** is mostly made from ..... because

.....

[2]

5 Increase in height is one physical change that happens to females during puberty.

Describe **two other** physical changes that happen to females during puberty.

1 .....

2 .....

[2]

6 Safia investigates how the temperature of water affects the time taken for a salt tablet to dissolve completely.

In her first experiment Safia:

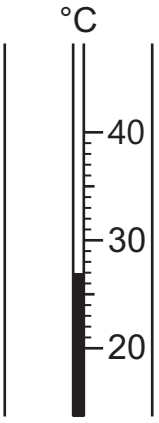
- puts 25 cm^3 of water into a beaker
- measures the temperature of the water
- adds a salt tablet to the water
- stirs the salt tablet and water until the salt tablet dissolves
- records the time taken for the salt tablet to dissolve completely.

Safia repeats the experiment four more times using water at different temperatures.

(a) Look at the table of results.

experiment number	temperature of water in °C	time taken to dissolve in seconds
1	.....	82
2	37	41
3	45	24
4	54	12
5	64	6

Look at the diagram of part of a thermometer showing the temperature reading for experiment **1**.



Record this temperature reading in the table of results.

[1]

(b) Safia uses equipment to accurately measure 25 cm^3 of water and the time taken.

Complete the sentences.

To accurately measure 25 cm^3 of water, Safia uses a .....

To accurately measure the time taken, Safia uses a .....

[2]

(c) Safia wants to make her results more reliable.

Describe what she does to make her results more reliable.

.....

..... [1]

(d) The rate of dissolving increases as the temperature of water increases.

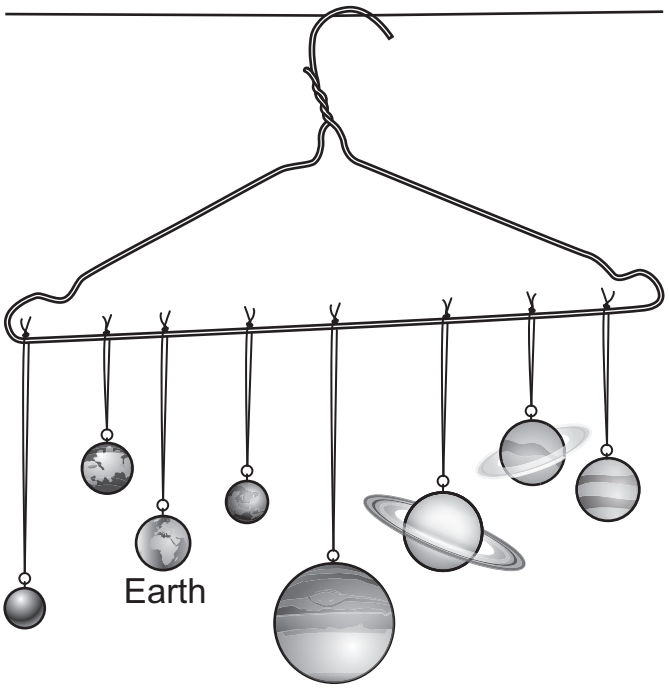
Explain why.

Use ideas about the particle model.

.....

..... [1]

7 Blessy makes a model of the Solar System.



(a) Write down **two** ways this model helps Blessy understand the Solar System.

1 .....

.....

2 .....

.....

[2]

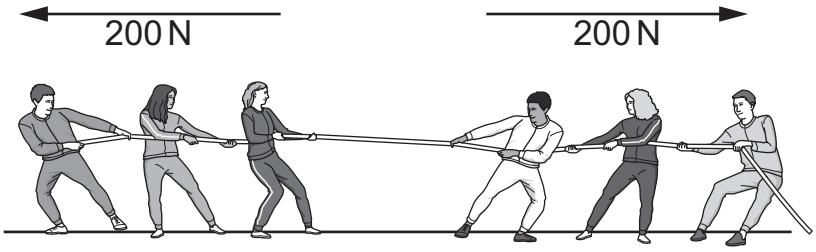
(b) Write down **one** way this model does **not** help Blessy understand the Solar System.

.....

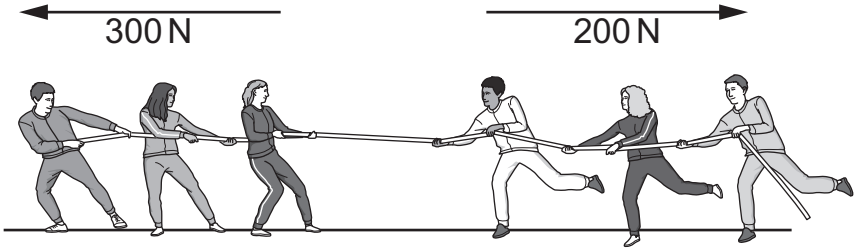
..... [1]

8 Force diagrams are used to show the size and direction of forces.

Look at the two force diagrams.



force diagram **A**



force diagram **B**

(a) One of the arrows is labelled 300 N.

Complete the sentences.

N is used because it measures .....

kg is **not** used because it measures .....

[2]

(b) Describe what happens in force diagram **A**.

.....

..... [1]

(c) Describe and explain what happens in force diagram **B**.

description .....

.....

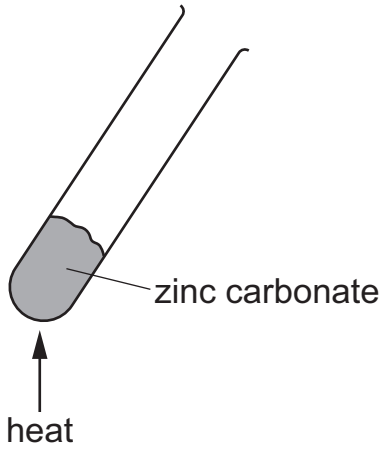
explanation .....

.....

[2]

9 Jamila heats 3.5 g of solid zinc carbonate.

Look at the diagram of the equipment Jamila uses.



Jamila heats the solid zinc carbonate in the test-tube for five minutes.

She notices that during the heating a gas is made.

After heating she lets the test-tube and its contents cool.

She finds there is only 2.6 g of solid left in the test-tube.

(a) Calculate the decrease in mass of solid after heating.

..... g [1]

(b) Explain why the mass of solid decreases during heating.

..... [1]

(c) One of the properties of a gas is that a gas has mass.

Write down **one other** property of a gas.

..... [1]

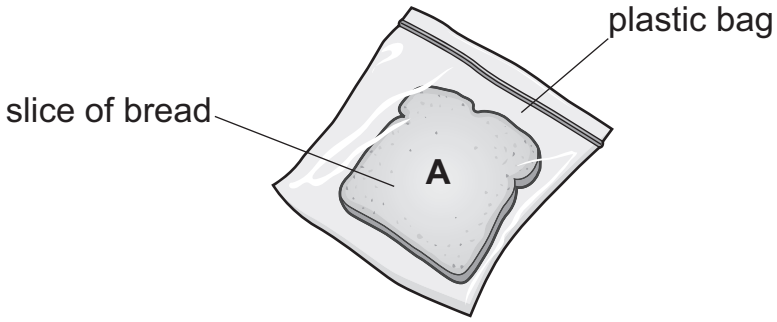
10 Priya investigates the spread of mould.

Mould is a type of fungus.

Priya:

- puts one slice of bread into four different plastic bags
- prepares each slice of bread differently
- seals each bag closed
- leaves the slices of bread for three days.

The diagram shows one of the slices of bread at the start of the investigation.



After three days Priya records the amount of mould on each slice of bread.

Look at the table.

slice of bread	**how slice of bread is prepared**	**observation after three days**
A	touched by hands inside gloves	small amount of mould
B	touched by hands washed in soap and water	no mould
C	touched by hands that have **not** been washed	mould on part of the bread
D	touched by hands washed in water but **no** soap	mould on part of the bread

(a) Which scientific question is Priya investigating?

Tick (✓) **one** box.

Is mould a type of fungus? ☐

Does temperature affect the growth of mould? ☐

Which type of mould grows on bread? ☐

Does washing hands stop the growth of mould? ☐

[1]

(b) Write down **two** variables Priya **controls** in her investigation.

1 .....

2 .....

[2]

(c) Priya does **not** open the bags at the end of the investigation.

Suggest why this is important.

.....

..... [1]

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