Cambridge Assessment International Education

Cambridge Primary Checkpoint

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

6137552356

SCIENCE **0097/01**

Paper 1 **October 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.

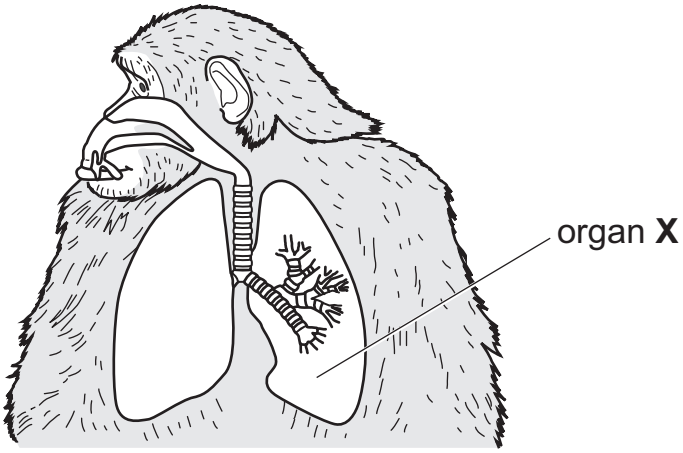
INFORMATION

- 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.

1 Chimpanzees have similar organs to humans.

Look at the respiratory system of the chimpanzee.



(a) Write down the name of organ **X**.

.....

[1]

(b) Which substance moves from organ **X** into the blood?

Tick (✓) the correct answer.

carbon dioxide ☐

nutrients ☐

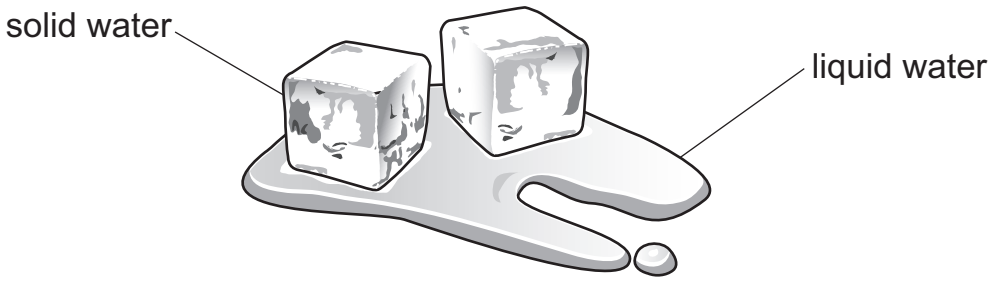
oxygen ☐

waste ☐

[1]

2 Hassan and Yuri are investigating different chemical processes.

(a) Yuri observes some solid water changing to liquid water.



Write down **one** reason why this is a physical change.

.....

..... [1]

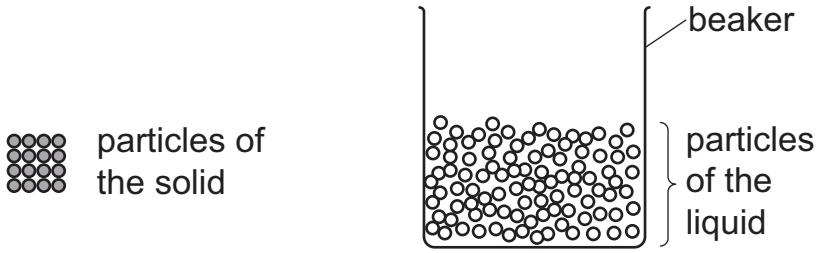
(b) Hassan heats some liquid water to exactly 100 °C.

Name the process that **only** happens at exactly 100 °C.

..... [1]

(c) Look at the diagram.

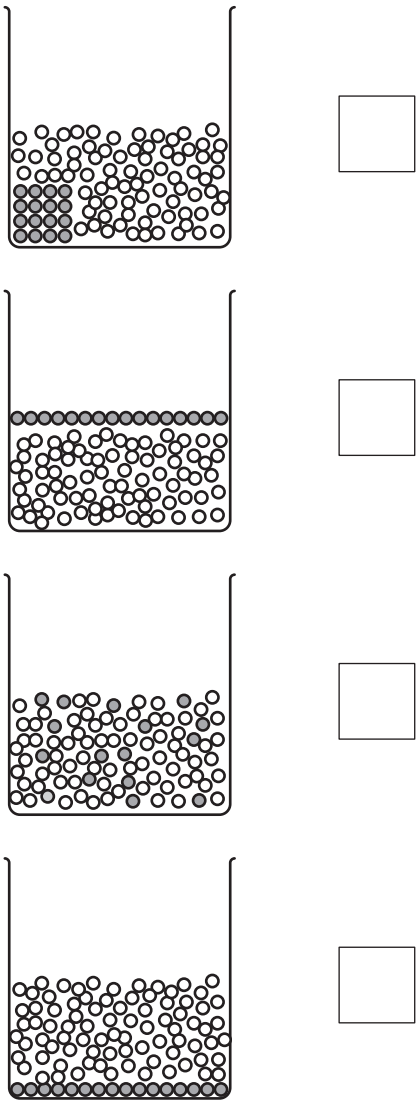
It shows a model of particles of a solid and particles of a liquid in a beaker.



Yuri puts the solid in the beaker with the liquid.

The solid dissolves in the liquid.

Tick (✓) the correct model of the particles when the solid dissolves in the liquid.



[1]

(d) Yuri adds the solid to a liquid at two different temperatures.

The two temperatures are 20 °C and 40 °C.

He records the time it takes for the solid to dissolve in the liquid at the two different temperatures.

Here are his results.

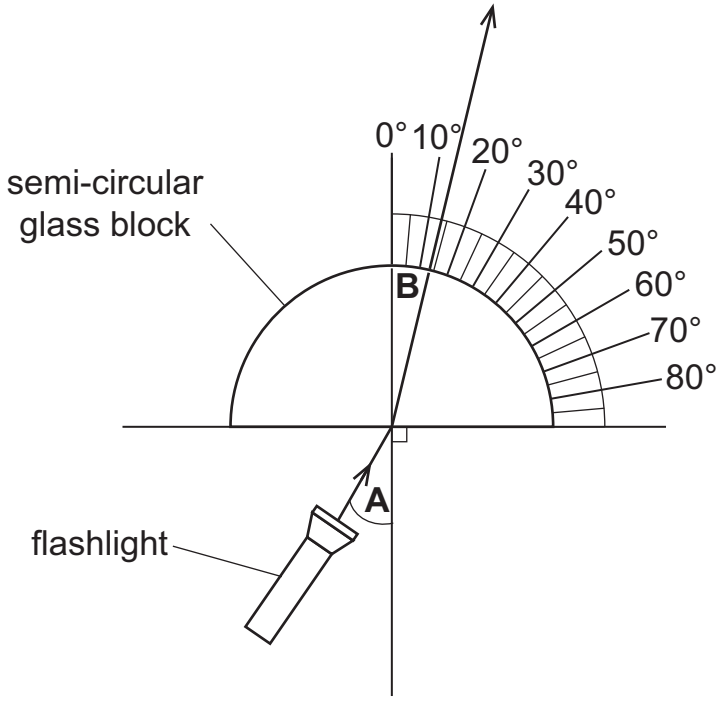
temperature in °C	time in seconds
20	38
40	.....

Complete the table to predict the time it takes for the solid to dissolve at 40 °C.

[1]

3 Ahmed uses a semi-circular glass block to investigate refraction.

Look at the diagram.



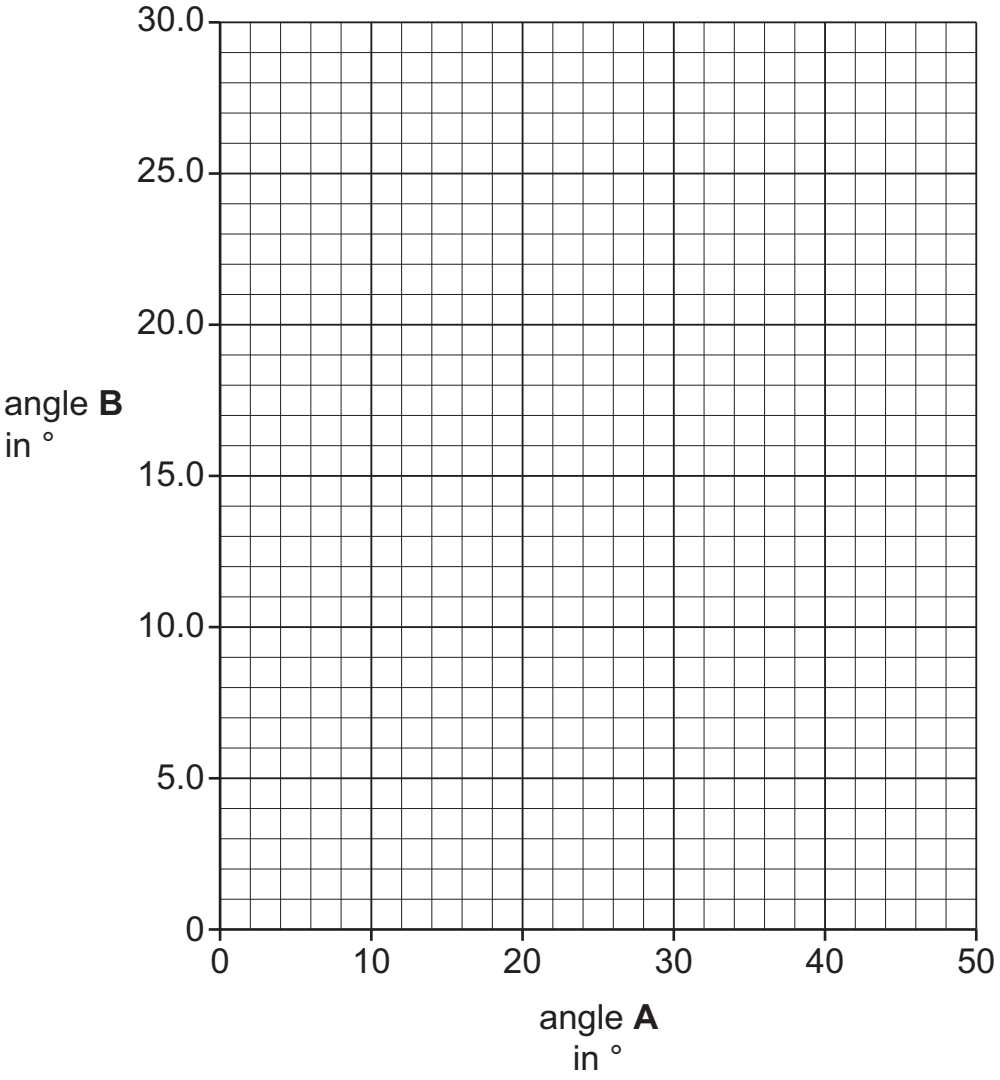
Ahmed changes the size of angle **A** by moving the flashlight.

He writes down the size of angle **B**.

Look at his results.

angle A in °	**angle B in °**
0	0
10	7.0
20	13.5
30	19.0
40	25.0

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



[1]

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

(c) Ahmed uses 25° for angle **A**.

Write down the size of angle **B**.

..... ° [1]

(d) Ahmed **removes** the semi-circular glass block.

Complete the sentence to explain what happens to the ray of light.

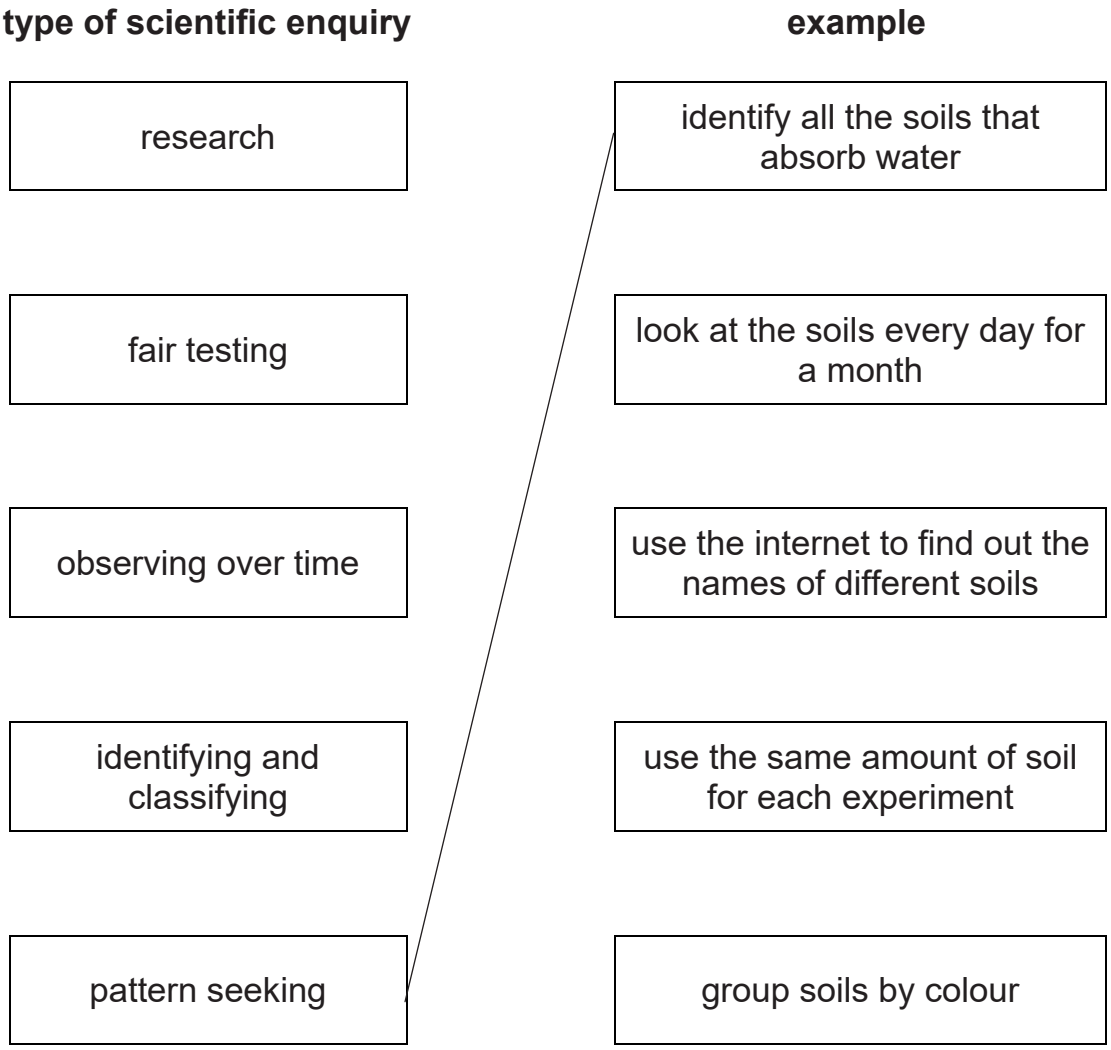
There is **no** change in the medium so the ray of light

does **not** ..... . [1]

4 Pierre investigates different types of soils.

(a) Draw a straight line from the **type of scientific enquiry** to the correct **example**.

One has been done for you.



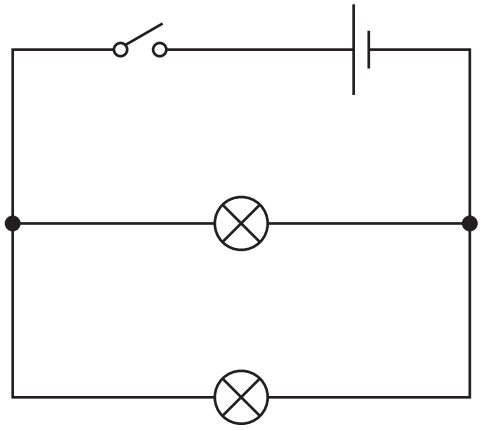
[2]

(b) Complete the sentence.

Different types of soils are classified based on their organic, sand and

..... content. [1]

5 Aiko uses electrical symbols to draw a circuit.



(a) This circuit is **not** a single continuous circuit.

This circuit has branches in it.

Describe this circuit.

Include:

- the name of this type of circuit
- the names of all the components in the circuit.

.....

.....

..... [2]

(b) Draw the same components in a single continuous circuit.

Use electrical symbols.

[1]

6 Bacteria cause infectious diseases.

(a) Write down **one other** cause of infectious diseases.

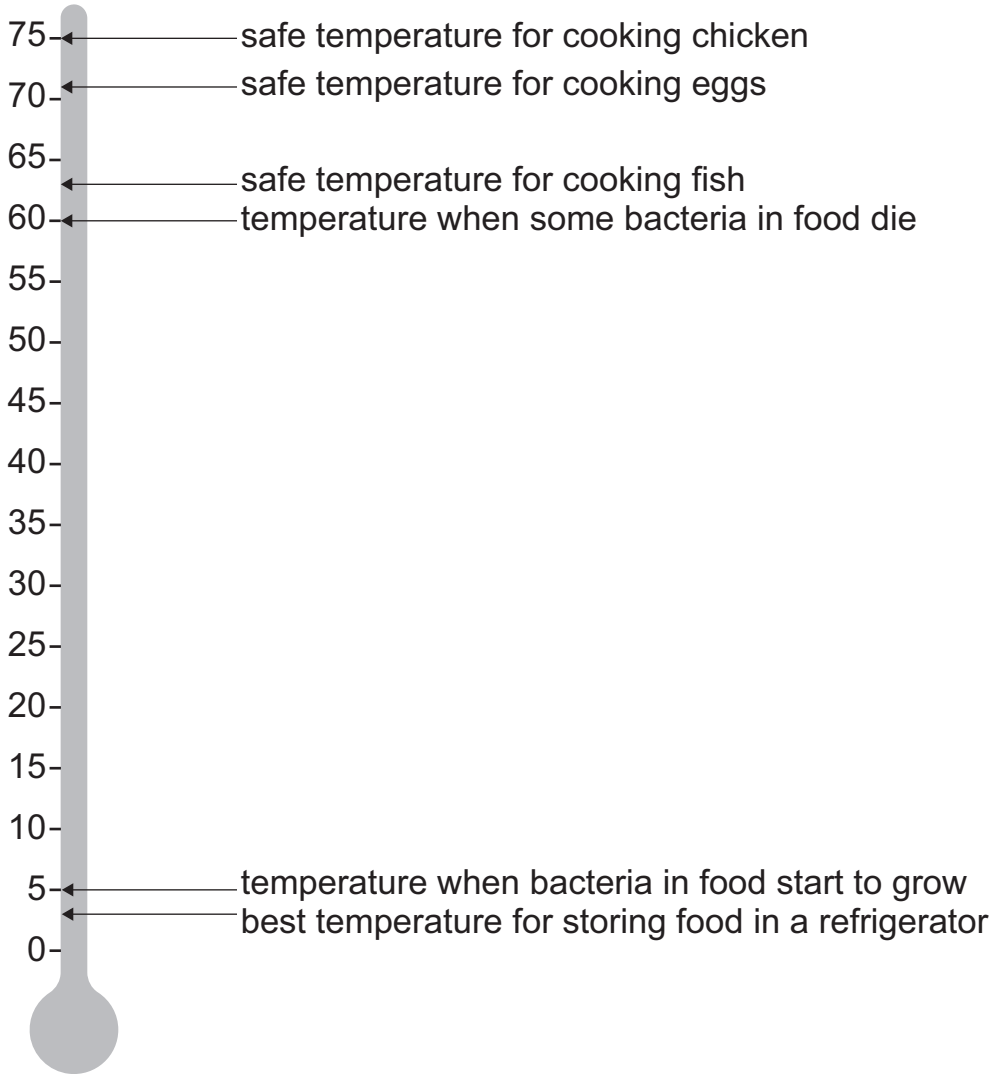
.....

[1]

(b) Food is stored and cooked at the correct temperature so it is safe to eat.

The diagram shows:

- the safe temperature for storing and cooking different foods
- the temperature when bacteria in food start to grow
- the temperature when some bacteria in food die.



Temperature is measured in °C.

Name the equipment used to measure temperature.

.....

[1]

(c) Complete the sentences.

Use the diagram to help you.

The food with the **lowest** safe cooking temperature is .....

Bacteria in food start to grow at ..... °C and some bacteria die at

..... °C.

[1]

(d) Some bacteria in food cause infectious diseases.

Describe how human defence mechanisms protect the body from these diseases.

..... [1]

(e) Chen eats food that has **not** been cooked at the correct temperature.

This food contains bacteria.

The number of bacteria in the food doubles every 15 minutes.

Complete the table to show the number of bacteria in the food at 90 minutes.

time in minutes	number of bacteria in the food
0	8
15	16
30	32
45	64
60	128
75	256
90	.....

[1]

(f) The bacteria in the food make Chen ill.

Describe **one** way Chen stops the bacteria spreading from him to other people.

.....

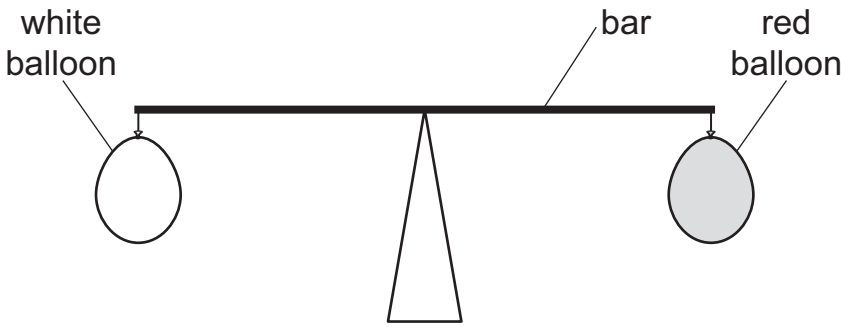
..... [1]

7 Blessy investigates a property of air using balloons as a model.

Blessy fills two balloons of the same size with air.

She ties the balloons to a bar and balances the balloons.

Look at the diagram.



Blessy pushes a pin into the red balloon.

The red balloon bursts.

(a) What happens to the position of the white balloon?

.....

..... [1]

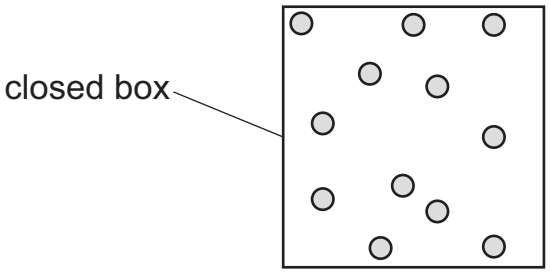
(b) What property of air does this model represent?

.....

..... [1]

(c) Look at the diagram of the particle model for a gas.

The circles represent gas particles in a closed box.



The sides of the box are pressed together.

Predict what happens to the gas particles when the sides of the box are pressed together.

.....

.....

Explain why the gas particles are able to do this.

.....

.....

[2]

8 Lily wants to find out if the height of a person affects their heart rate.

Heart rate is how many times the heart beats in one minute.

Lily:

- measures the height of six girls in her class
- measures the heart rate of the six girls in her class
- writes down the height and the heart rate of the six girls in a table.

name	**height in .....**	**heart rate in beats per minute**
Mia	110.0	105
Angelique	120.0	100
Anastasia		78
Safia	145.0	75
Gabriella	146.5	74
Priya	152.0	60

(a) The unit Lily uses to measure height is missing from the table.

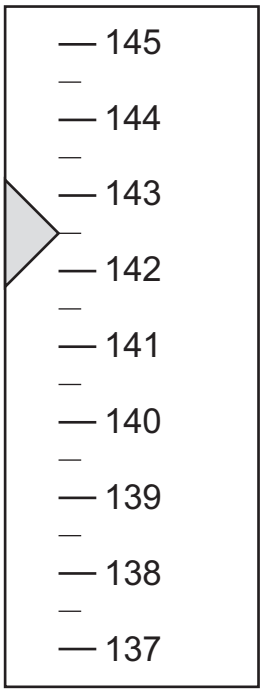
What is the unit Lily uses to measure height?

Write your answer in the table.

[1]

(b) Lily measures the height of Anastasia.

The diagram shows the reading for Anastasia.



Write down the height of Anastasia.

..... [1]

(c) Lily says,

'Girls with a larger height have a faster heart rate.'

Tick (✓) to show if Lily is correct.

yes ☐ no ☐

Explain your answer.

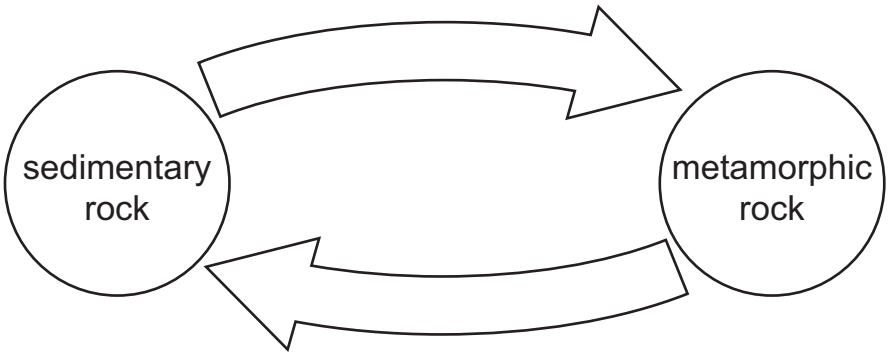
Use information from the table.

.....

..... [1]

9 The rock cycle describes the formation of different types of rock.

Look at part of the rock cycle.



Complete the sentences.

Choose words from the list.

erosion **fossils** **heat** **melting** **pressure**

sedimentation **solidification**

Sedimentary rock changes to metamorphic rock because of heat and

..... .

The metamorphic rock is broken into small pieces and transported by

..... .

The small pieces of rock are deposited in a lake and form new sedimentary rock

by ..... .

[2]

10 Mike researches the thermal conductivity of four solids, **A**, **B**, **C** and **D**.

He puts the information in a table.

Look at the table.

solid	thermal conductivity in units
A	70
B	147
C	83
D	92

(a) Calculate the **mean** for the thermal conductivity of the four solids.

mean = ... units [1]

(b) Calculate the **range** for the thermal conductivity of the four solids.

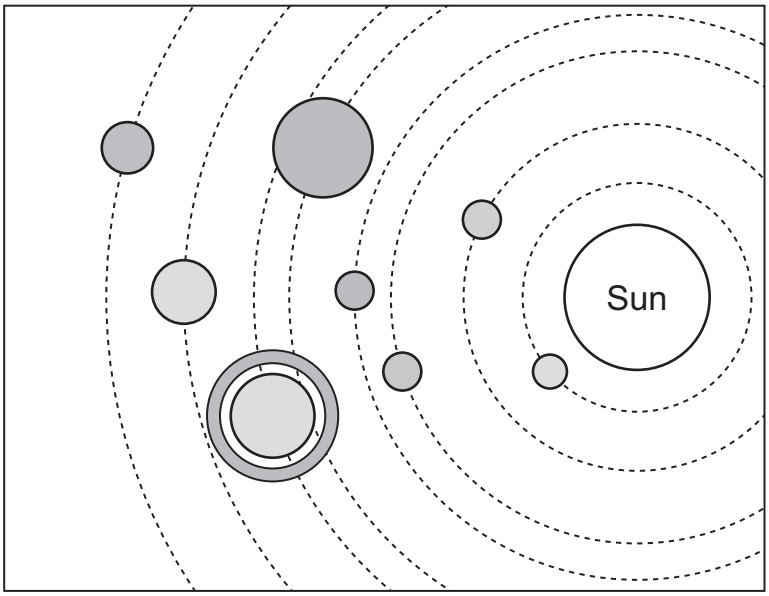
range = ... units [1]

(c) Complete the sentence.

Thermal conductivity measures the ability of a substance

to conduct ..... . [1]

11 Rajiv and Carlos make a model of the Solar System.



Not drawn to scale

(a) The table shows the distances between the planets and the Sun in the model.

Complete the table.

Choose from:

3.5 **6.7** **14.2** **48.4** **179.0**

planet	**distance in cm**
Earth	9.3
Jupiter	.....
Mars	.....
Mercury	.....
Neptune	288.0
Saturn	88.9
Uranus	.....
Venus	.....

[2]

(b) The Earth is 9.3 cm from the Sun in this model.

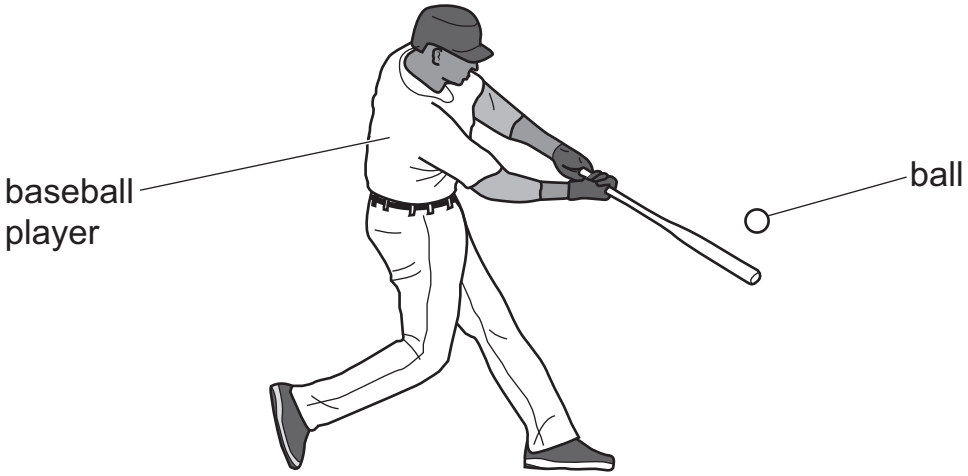
Suggest the distance between the Moon and the Earth in this model.

Circle the best distance.

0.02 cm **2 cm** **20 cm** **200 cm**

[1]

12 A ball is thrown towards a baseball player.



The baseball player hits the ball.

Describe **two** things that happen to the ball.

1 .....

2 .....

[1]

13 Oliver writes a quiz about mass and weight.

Write down if each statement is **true** or **false**.

Quiz about mass and weight

1 Mass is a force.

.....

2 Mass is measured in grams.

.....

3 Mass is measured in kg.

.....

4 Weight is a force.

.....

5 Weight is measured in N.

.....

[2]