



Science

Stage 6

Paper 1

35 minutes

No additional materials are needed.

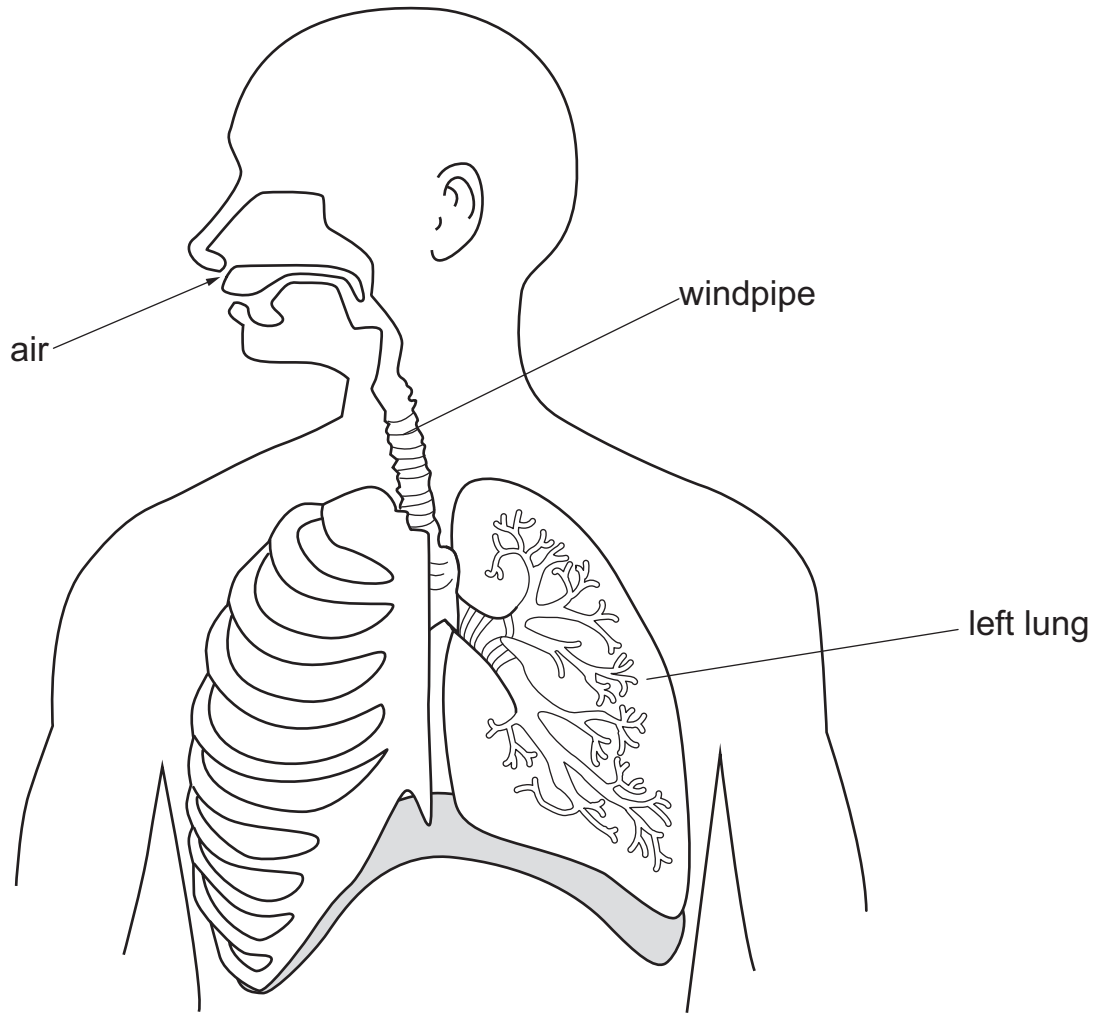
INSTRUCTIONS

- Answer **all** questions.
- Write your answer to each question in the space provided.
- You should show all your working on the question paper.

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 part of the human respiratory system.



(a) Complete the diagram using arrows (\rightarrow) to show the direction oxygen moves from the air into the left lung.

[1]

(b) The oxygen moves into a liquid in the body when it leaves the lungs.

This liquid takes the oxygen around the body.

Write down the name of this liquid.

..... [1]

(c) Priya says,

**'Many vertebrates have similar respiratory systems to humans.
These animals have lungs and breathe in oxygen from the air.'**

Circle **all** the animals with similar respiratory systems to humans.

ant

bee

cat

fish

lion

snail

[1]

2 This question is about diseases.

(a) Viruses and bacteria infect humans and cause disease.

Write down **one** other cause of disease which infects humans.

..... [1]

(b) Good hygiene helps to control the spread of diseases.

Washing our hands is important for good hygiene.



Complete the sentences.

We must wash our hands because

.....

We always need to wash our hands when

.....

[2]

3 Oliver investigates the temperature change when a solid reacts with a solution.

He:

- adds 25 cm³ of the solution to a beaker
- adds a small piece of the solid to the beaker
- stirs the mixture all the time during the investigation
- records the temperature for five minutes.

(a) Name the equipment Oliver uses to accurately measure 25 cm³ of the solution.

..... [1]

(b) Oliver stirs the mixture all the time during the investigation.

Explain why this makes his results more accurate.

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

(c) Oliver says,

**‘At the start of the investigation the solid is grey and the solution is blue.
At the end of the investigation the solid is brown and the solution is
colourless.’**

Complete these sentences about the investigation.

The colour of the **reactant** solution is

The colour of the solid **product** is

[1]

(d) Temperature change and colour change are observations that show a chemical reaction happens.

Write down **one other** observation that shows a chemical reaction happens.

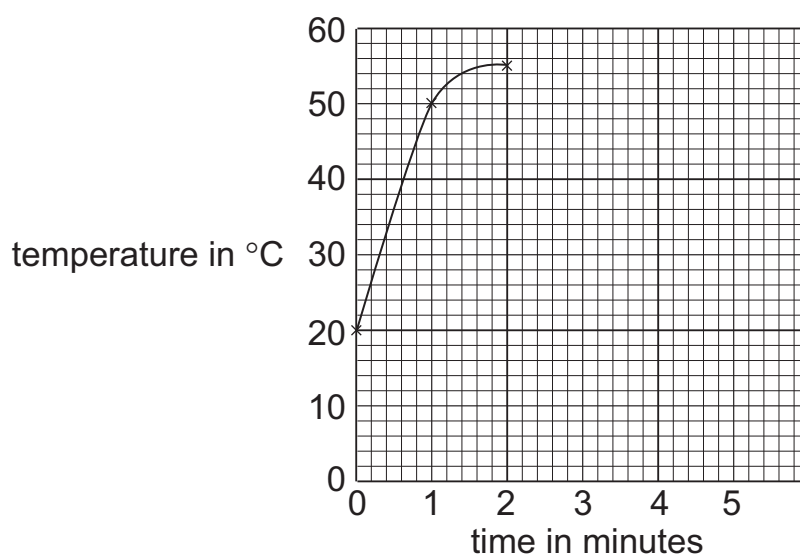
.....
..... [1]

(e) Look at the results.

time in minutes	temperature in °C
0	20
1	50
2	55
3	50
4	40
5	30

Complete the line graph by:

- plotting the results for 3 minutes, 4 minutes and 5 minutes
- completing the curve.



[2]

(f) Complete the sentences to describe the pattern in the results.

From minutes until 2 minutes the temperature is increasing.

From 2 minutes until minutes the temperature is

There are anomalous results.

[1]

4 Boiling and evaporation are physical changes.

(a) Tick (✓) **all** the correct statements about boiling and evaporation.

boiling only happens from the surface of a liquid

☐

boiling produces bubbles in the liquid

☐

evaporation is faster than boiling

☐

water boils at 100 °C

☐

water only evaporates above 100 °C

☐

[2]

(b) Physical changes are reversible.

Draw a straight line from each **process** to the **reverse of the process**.

process

evaporation

melting

boiling

reverse of the process

freezing

condensation

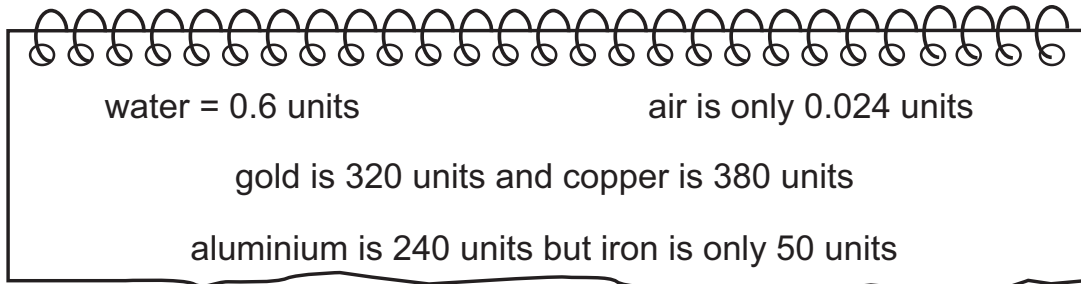
[1]

5 Thermal conductivity is a property of a material.

(a) What is the meaning of **thermal conductivity**?

.....
 [1]

(b) Safia collects information about the thermal conductivity of different materials.



Use the information to complete the table.

.....	thermal conductivity in units
air
aluminium
copper
gold
iron
water

[1]

(c) Safia says,

‘Metals are materials that have a high thermal conductivity.’

Use the information to explain why Safia is correct.

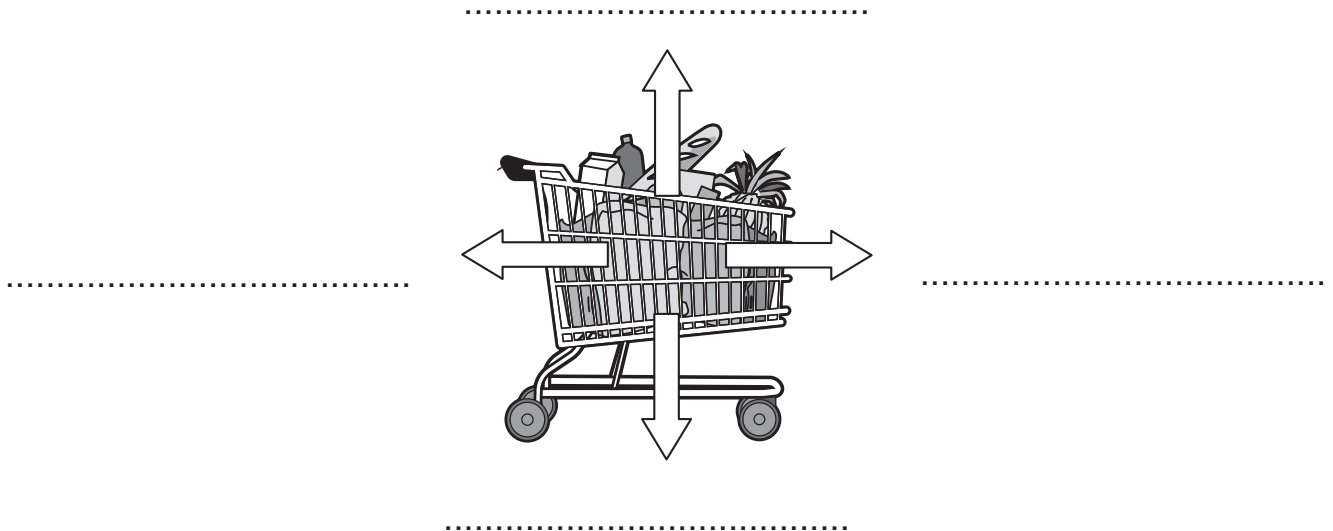
.....
 [1]

[Turn over

6 Chen pushes a shopping trolley.



(a) The force diagram shows **four** forces acting on the shopping trolley.



Complete the **four** labels for the forces acting on the shopping trolley.

Choose from:

applied force

friction

gravity

normal force

upthrust

water resistance

[2]

(b) Chen walks forward as he pushes the trolley.



Force **A** is the same size as force **B**.

Describe what happens to the trolley.

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

(c) A force diagram is a model.

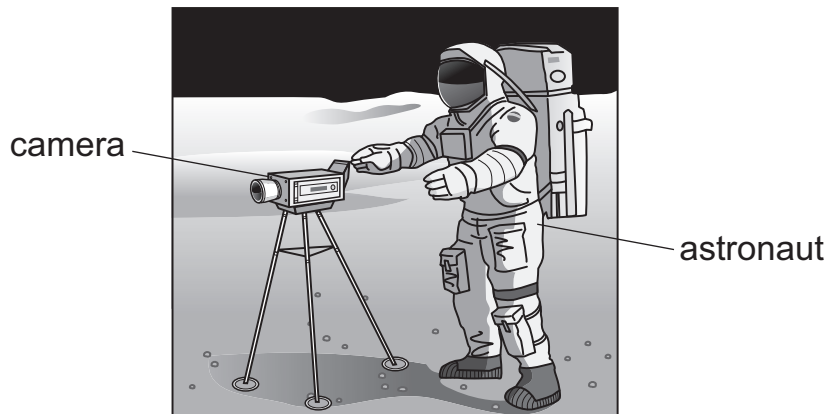
A force diagram shows the name and size of the forces.

Describe **one other** way a force diagram helps Chen to understand forces.

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

7 An astronaut lands on the Moon.

He puts a camera onto the surface of the Moon.



(a) What is the **weight** of the camera on the Moon?

Circle the correct answer.

100 g

100 kg

100 kg / N

100 N

[1]

(b) There is less gravity on the Moon than on the Earth.

Tick (✓) the **two** correct sentences.

The mass of the camera on Earth is measured in kg.

☐

The mass of the camera on the Moon is measured in m^2 .

☐

The mass of the camera is greater on Earth than on the Moon.

☐

The weight of the camera is greater on Earth than on the Moon.

☐

Gravity makes the camera sink below the surface of the Moon.




☐

[2]

8 There are different types of electrical circuits.

(a) We use symbols to draw electrical circuits.

Complete the table.

symbol	name




[1]

(b) Carlos makes a parallel circuit.

He uses:

- three lamps
- one cell
- one closed switch.

The switch is used to turn on **all** the lamps at the same time.

Draw the parallel circuit using the correct electrical symbols.

[2]

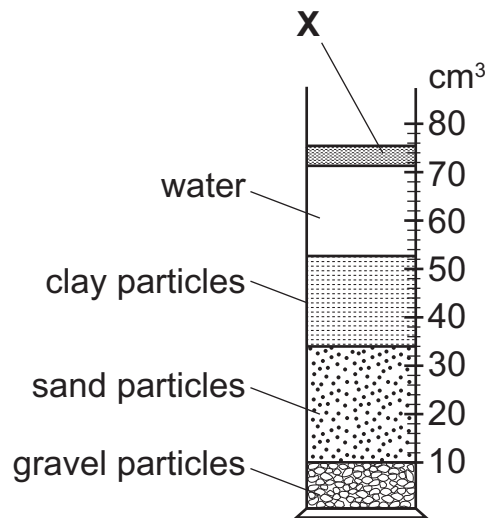
[Turn over

9 Jamila investigates soil.

She:

- mixes soil with water
- adds the mixture to a glass container
- waits 10 minutes.

Look at the results.



(a) Jamila waits 10 minutes before observing the results.

Predict what she observes if she only waits 1 minute before looking at the results.

.....
 [1]

(b) Soils are classified based on the amount of sand, clay and **X** in the soil.

X is labelled on the diagram.

What is the name of **X**?

..... [1]

(c) Complete the sentence about the volume of **sand particles** in the soil.

The volume of sand particles in the soil is cm³. [1]

(d) Some plants do **not** grow well in this soil.

The roots die because the soil traps too much water.

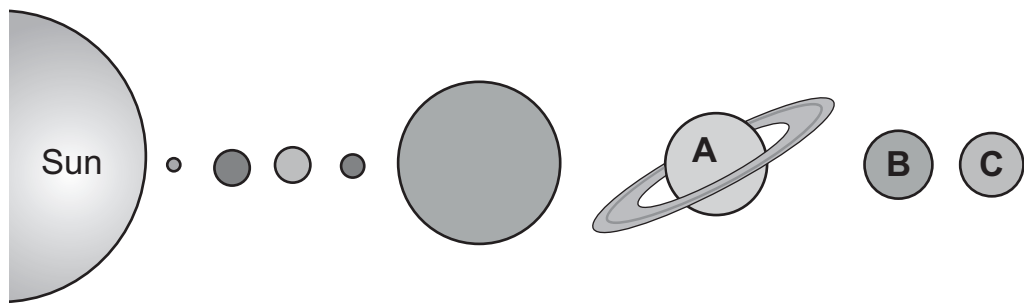
Suggest **two different** ways to **improve** this soil to help plants grow well.

1

2

[2]

10 The diagram shows part of the Solar System.



Not drawn to scale

(a) Name planet **A**, planet **B** and planet **C**.

planet **A**

planet **B**

planet **C**

[1]

(b) Name the object that moves around the Earth.

..... [1]

(c) The diagram of the solar system is a model.

Complete the sentences about the diagram of the Solar System.

The meaning of **Not drawn to scale** is

.....

Planets in the Solar System are **not** usually in a straight line because

.....

[2]

11 Physical changes take place in humans during puberty.

Write **all** these changes into the correct part of the table.

hair grows under arms

height increases

hips widen

pimples on face

voice gets lower

girls only	boys only	both girls and boys

[2]

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