Cambridge Assessment International Education

Cambridge Lower Secondary Progression Test

Science paper 2

Stage 7

1255349087

45 minutes

Name .....

Additional materials: Ruler

READ THESE INSTRUCTIONS FIRST

Answer **all** questions in the spaces provided on the question paper.

You should show all your working on the question paper.

The number of marks is given in brackets [ ] at the end of each question or part question.

The total number of marks for this paper is 50.

For Teacher's Use	
Page	**Mark**
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
Total	

For Teacher's Use

1 The drawing shows a bat that lives in dark caves.

Bats catch and eat flying insects.

(a) Bats have adaptations that enable them to **fly**.

Describe **two** of these adaptations that are shown in the drawing.

1 .....

2 .....
[2]

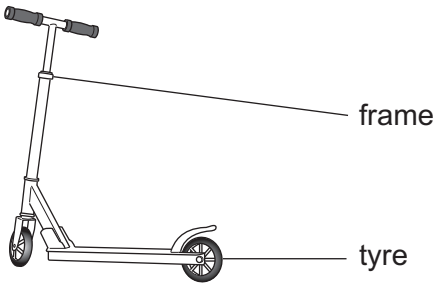
(b) The bat's **mouth** is adapted to catch and eat large insects.

Suggest how the mouth is adapted.

..... [1]

For Teacher's Use

2 Mia has a new scooter.



(a) Draw a line from the **part of the scooter** to the **material** used to make it.

part of scooter	material
	clay
frame	foam
tyre	rubber
	steel

[2]

(b) Some scooters have a frame made of aluminium.

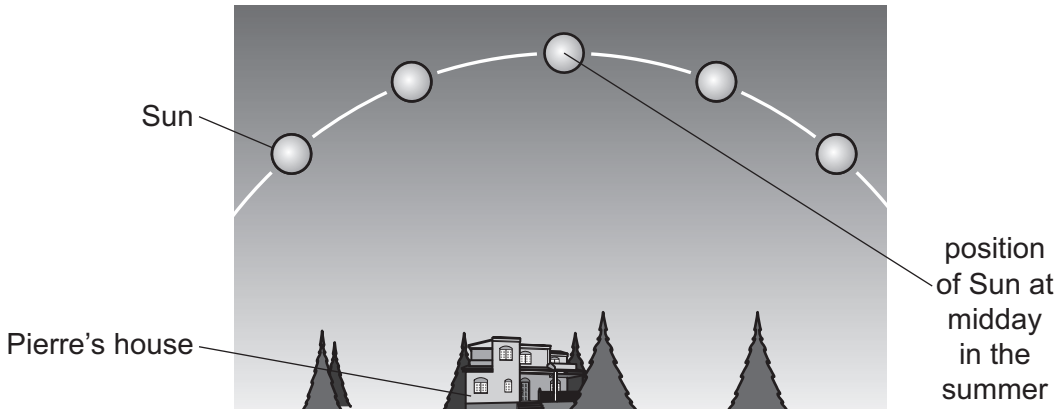
Write down two **properties** of aluminium that make it useful for making the frame.

1 .....

2 .....

[2]

3 Pierre draws the position of the Sun at different times of the day.



(a) Why does the Sun appear to move in the sky during the day?

.....[1]

(b) Why is the position of the Sun in the summer sky different from its position in the winter sky?

Circle the correct answer.

the Earth has a tilted axis

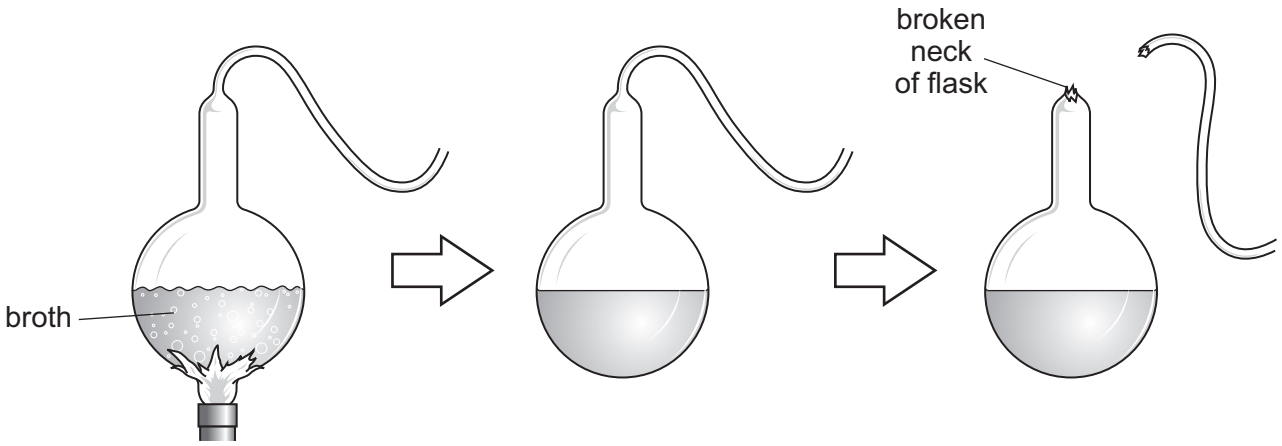
the Earth is further from the Sun

the Sun has a tilted axis

the Sun is closer to the Earth

[1]

4 Louis Pasteur did the following experiment.



step **A**	step **B**	step **C**
The flask was heated so that the broth boiled.	The flask was cooled to room temperature and left for a few weeks. No microorganisms grew.	The neck of the flask was broken off. It was left for one week. Microorganisms grew.

(a) Why did Louis Pasteur boil the broth at the beginning of the experiment?

.....[1]

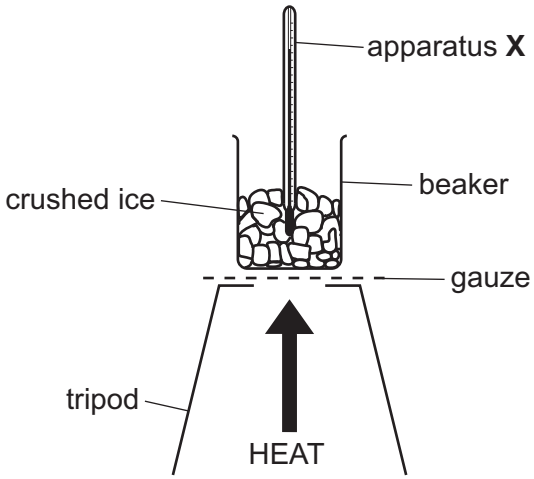
(b) Why did **no** microorganisms grow in step **B**?

.....[1]

[Turn over

5 Oliver investigates change of state.

He puts crushed ice into a beaker and heats it gently.



Every 2 minutes Oliver records the temperature using apparatus **X**.

(a) What is the name of apparatus **X**?

.....[1]

(b) The table shows Oliver's results.

time of heating in minutes	temperature in °C
0	0
2	0
4	20
6	40
8	50
10	80

(i) Describe the pattern in these results after the first 2 minutes.

.....

.....[1]

(ii) Which result does **not** fit this pattern?

temperature ..... °C [1]

(c) Complete these sentences.

In the first 2 minutes ice changes state from a .....

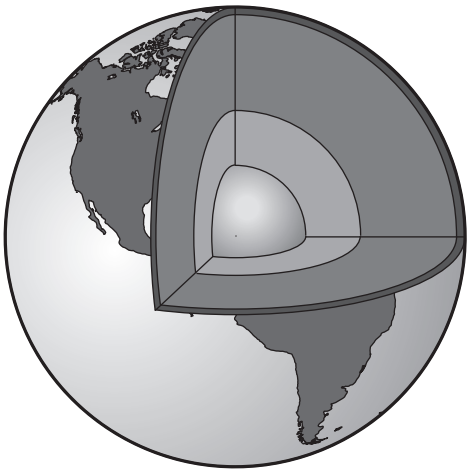
to a ..... .

In the next two minutes the particles gain more .....

and move ..... . [2]

6 The Earth is made of several layers.

Here is a diagram showing the different layers of the Earth.



Complete the sentences about the structure of the Earth.

(a) The centre of the Earth is called the ..... . [1]

(b) The mantle contains some liquid rock. This liquid rock is called ..... . [1]

(c) Liquid rock that erupts from volcanoes is called ..... . [1]

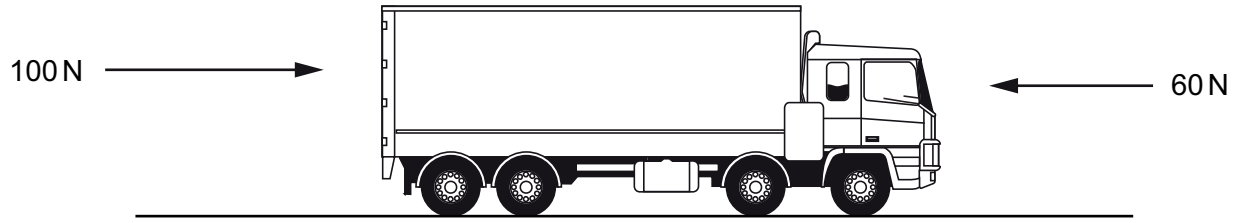
(d) When the liquid rock cools it turns into a type of rock called ..... rock. [1]

[Turn over

For Teacher's Use

7 A truck is moving forward.

Forces act on the truck.



(a) What happens to the truck?

Circle the correct answer.

does not move

moves backwards

turns left

speeds up

slows down

[1]

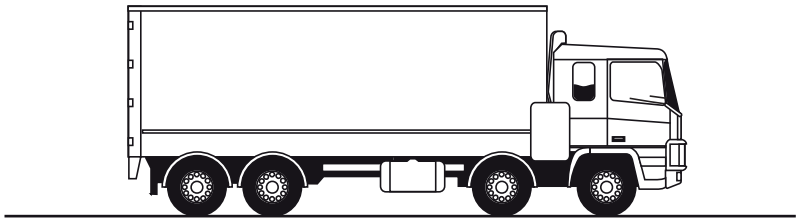
(b) The force labelled 100 N is the driving force.

Write down the name of the force labelled 60 N.

..... [1]

(c) (i) Draw **one** arrow on the truck to show the weight.

For Teacher's Use



[1]

(ii) The weight of the truck is increased.

What does gravity do to the truck?

Circle the correct answer.

moves it backwards

moves it downwards

moves it forwards

moves it upwards

speeds it up

[1]

For Teacher's Use

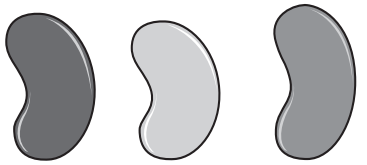
8 Jamila and Youssef investigate variation in the length of seeds.

They

- use 50 seeds
- measure the length of 47 seeds
- do not have time to measure the length of 3 seeds.

(a) Measure the length of the 3 seeds.

Put your length in the box below the seed.



length of seed in mm ☐ ☐ ☐

[1]

(b) Complete the tally chart with the lengths of the 3 seeds you have measured.

length of seeds in mm	14–15	16–17	18–19	20–21	22–23
tally (each / = 1 seed)	///// /	///// ///// //	///// ///// ///// /	///// ///	/////
total number of seeds of each size	6	.....	.....	.....	5

[3]

(c) Use the tally chart to complete the histogram on the grid.

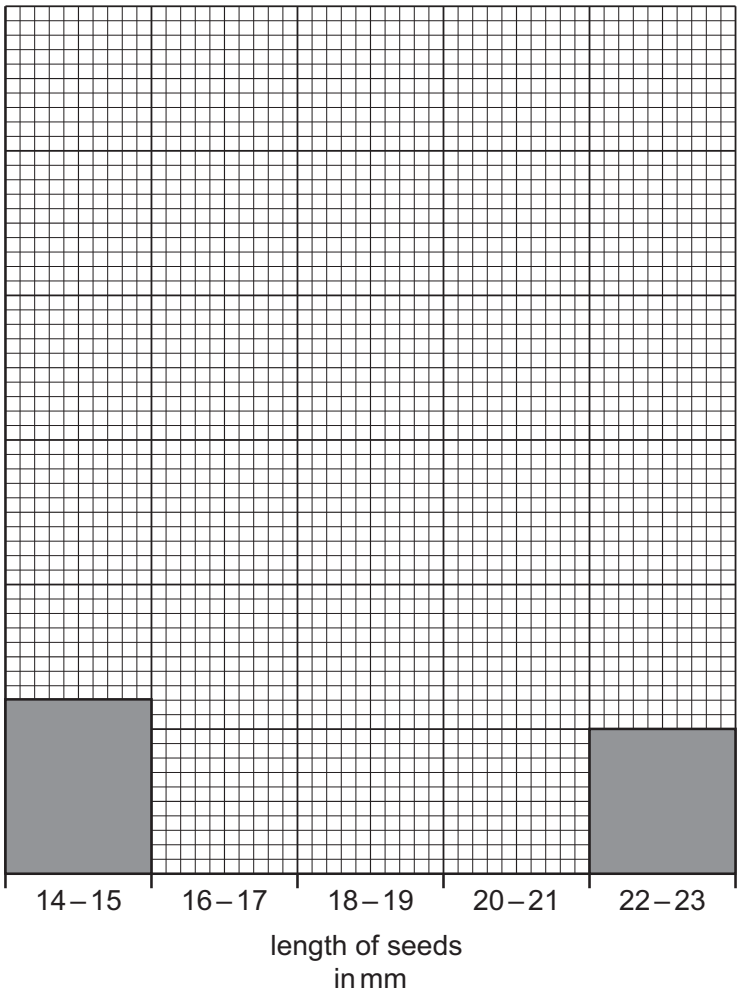
Label the y-axis.

The x-axis has been done for you.

.....

.....

.....



[3]

9 Universal Indicator can be used to estimate the pH value of a solution.

(a) Which is the best description for a solution with a pH of 5?

Tick (✓) the correct box.

neutral	☐
strongly acidic	☐
strongly alkaline	☐
weakly acidic	☐
weakly alkaline	☐

[1]

(b) What is the pH of a neutral solution?

..... [1]

For Teacher's Use

10 Ostriches belong to a group of vertebrates.

The drawing shows an ostrich.

(a) To which group of vertebrates do ostriches belong?

..... [1]

(b) Use the drawing to give **two** reasons for your answer to **(a)**.

1 .....

2 .....

[2]

11 Draw a line from each **type of energy** to its **description**.

type of energy	description
chemical	energy it has because it is moving
elastic potential	energy it has because of its position
gravitational potential	energy it has because it has changed shape
heat (thermal)	energy stored in food or fuel
kinetic	energy that flows because of a temperature difference

[3]

12 Friction is a type of force.

(a) Here are some sentences about friction.

Friction acts in the opposite direction to motion.

Friction can be reduced by using oil.

Friction can be useful.

Friction is a force that slows down moving objects.

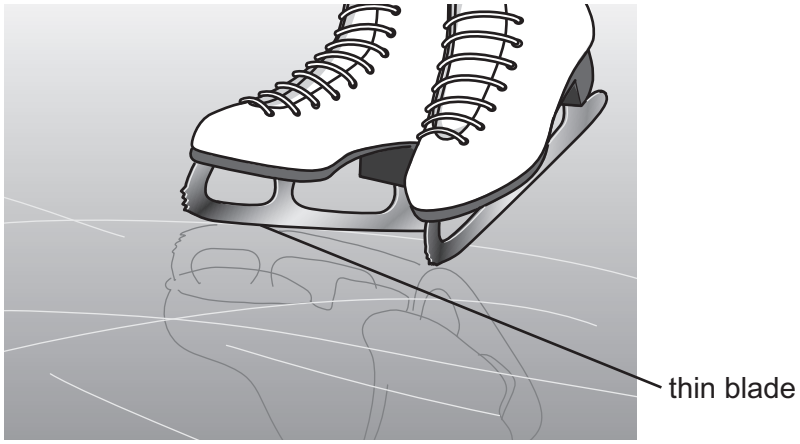
How many of these sentences are true?

Circle the correct answer.

0 **1** **2** **3** **4**

[1]

(b) Ice skates have thin blades.



There is a layer of water between the thin blade and the ice.

Explain how this layer of water helps the skater.

.....

.....

..... [2]

[Turn over

13 These organisms all live in the ocean.

For Teacher's Use

crustacean

dolphin

fish

killer whale

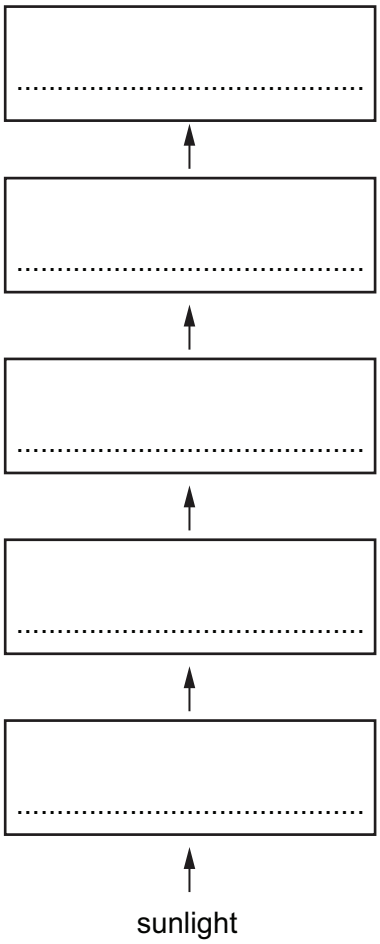
phytoplankton

The organisms all belong to the same food chain.

Read the information to help you work out the food chain.

- **crustacean – eats phytoplankton and is the prey of fish**
- **dolphin – is a predator of fish**
- **killer whale – is the top predator in the food chain**
- **phytoplankton – is a microscopic producer that uses energy from sunlight**

Write the names of the five organisms in the correct boxes to complete the food chain.



[2]

14 Some substances are metals and other substances are non-metals.

Metals often have high melting and boiling points, **but** non-metals often have low melting and boiling points.

Write down **two** other differences between metals and non-metals.

1 .....

.....

2 .....

.....

[2]

15 This question is about different planets.

(a) Which planet has the **largest** orbit?

Circle the correct answer.

Earth **Jupiter** **Mercury** **Saturn** **Venus**

[1]

(b) Which planet takes the **shortest** time to orbit the Sun?

Circle the correct answer.

Earth **Jupiter** **Mercury** **Saturn** **Venus**

[1]

(c) Chen finds this information using the internet.

It shows how much two people weigh on different planets.

planet	weight in N	weight in N
Mercury	190	285
Venus	450	682
Earth	500	750
Jupiter	1170	1755
Saturn	530	795

(i) Chen has a **weight** of 600 N on Earth.

Estimate Chen's **weight** on Mercury.

Circle the correct answer.

130 N **190 N** **230 N** **285 N**

[1]

(ii) Chen's friend has a **mass** of 50 kg on Earth.

What is his **mass** on Venus?

..... kg [1]