

# Science

Stage 8

Paper 1

**2026**

## Cambridge Lower Secondary Progression Test

Name

Class

Date

**45 minutes**

No additional materials are needed.

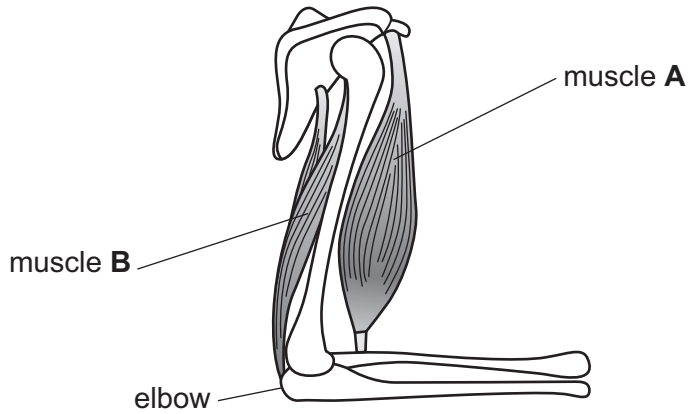
### INSTRUCTIONS

- Answer **all** questions.
- Write your answers 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 50.
- The number of marks for each question or part question is shown in brackets [ ].

1 Look at the diagram of bones and muscles of the human arm.



(a) What type of joint is the elbow?

..... [1]

(b) The muscles work in pairs to bend the arm.

What word describes muscles that work in pairs?

..... [1]

(c) The lower arm moves up by bending at the elbow.

Describe what happens to muscle **A** and muscle **B**.

muscle **A** .....

muscle **B** .....

[1]

2 This question is about models of the structure of the atom.



(a) Where is the nucleus located in the Rutherford model of the structure of the atom?

..... [1]

(b) Complete the sentences about the modern model of the structure of the atom.

Use words from the list.

- electrons      negative      neutral
- neutrons      positive      protons

The nucleus contains ..... and .....

The nucleus has a ..... charge.

The ..... are in orbits or shells.

[4]

3 The Earth has a magnetic field.



Complete the sentence.

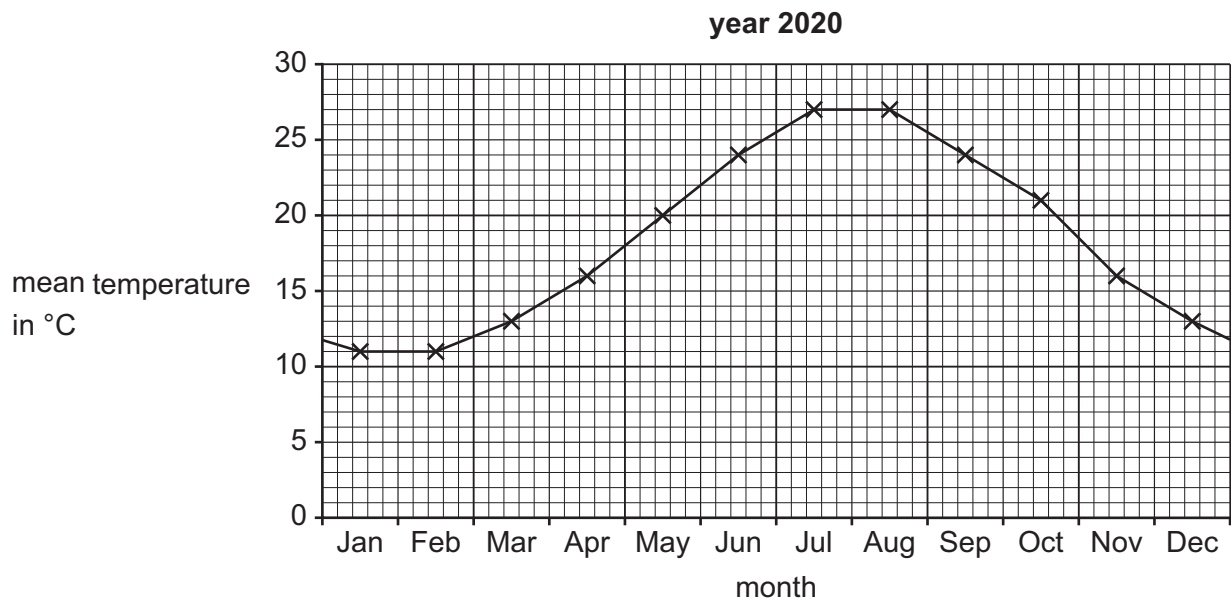
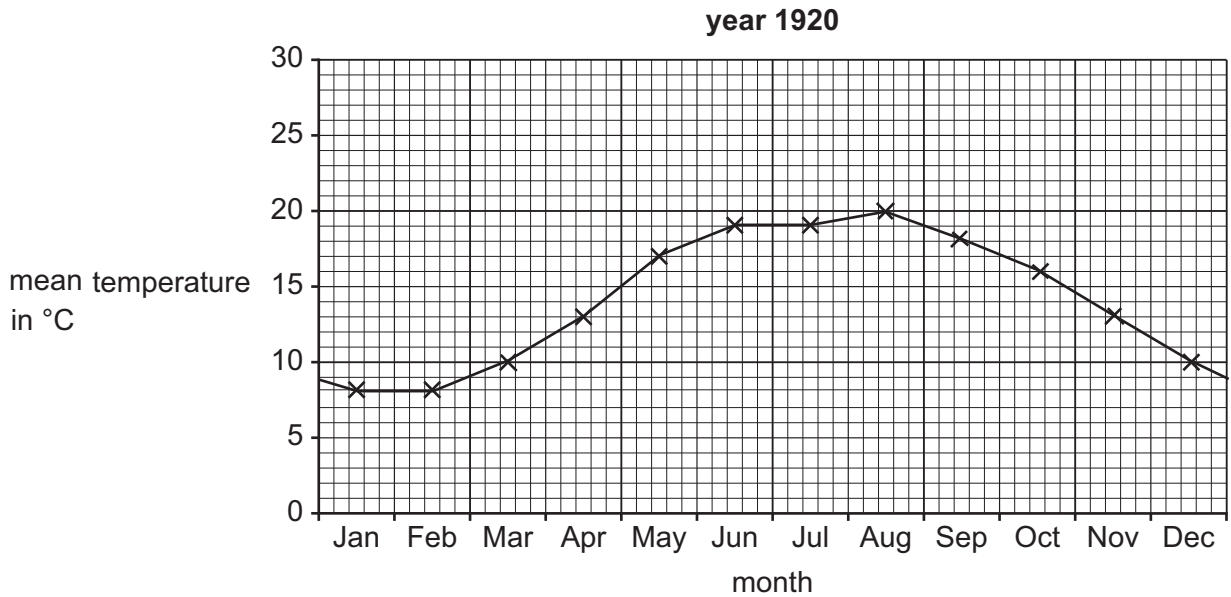
The part of the Earth that acts as a magnet is the ..... [1]

4 Rajiv collects information from secondary sources about the temperature in one country.



The information he collects is from the year 1920 and from the year 2020.

Look at the **two** graphs.



(a) The weather in this country changes between Feb (February) and Aug (August).

Temperature is one measurement to describe the weather.

(i) Describe the meaning of the word weather.

.....

..... [1]

(ii) Use the information in the graph for the **year 1920** to complete the sentences.

The mean temperature in Feb is ..... °C.

The mean temperature in Aug is ..... °C.

The difference in mean temperature is ..... °C.

[1]

(b) (i) Explain how the graphs provide evidence of climate change.

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

(ii) Write down **one** reason why the climate has changed.

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

(c) Rajiv thinks the temperatures measured in the year 1920 are **not** as accurate as the temperatures measured in the year 2020.

Suggest **one** reason why.

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

5 Mike investigates the amount of vitamin C in different fruit juices.



He uses a blue solution which turns colourless when mixed with vitamin C.

In his first experiment, Mike:

- step 1 adds 1 cm<sup>3</sup> of the blue solution into a test-tube
- step 2 adds a drop of fruit juice into the blue solution in the test-tube
- step 3 stirs the mixture
- step 4 records the colour of the mixture
- step 5 repeats step 2 to step 4 until the mixture in the test-tube is colourless
- step 6 records the number of drops of fruit juice he adds.

(a) Name the equipment Mike uses to measure 1 cm<sup>3</sup> of blue solution.

..... [1]

(b) Mike repeats the experiment with different fruit juices.

He then tests each fruit juice two more times.

Here are his results.

orange = 20, 18, 19 drops	grapefruit is 12, 11, 12
pineapple is 100, 102, 104	lemon = 16, 15, 14
lime = 14, 14, 12	

Complete the table for his results.

	.....			
fruit juice	test 1	test 2	test 3	mean
.....	20	18	19	19
.....	100	102	104	102
.....	14	14	12	13
.....	16	15	14	15
.....	12	11	12	.....

[2]

(c) Calculate the missing mean.

Record this mean in the table.

[1]

(d) Mike thinks his results are reliable.

Tick (✓) to show if Mike is correct.

yes           no

Explain your answer.

.....  
.....

[1]

(e) Vitamins form part of a balanced diet.

A balanced diet is important for our health.

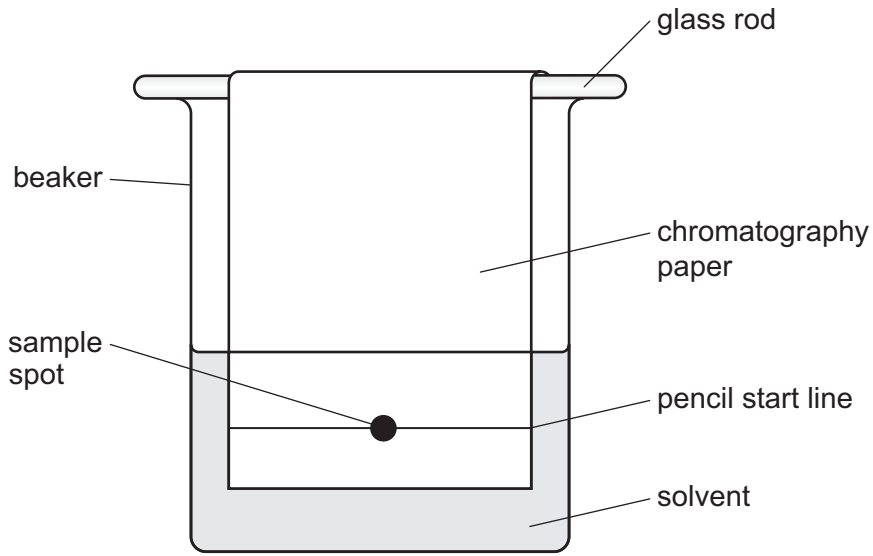
Suggest **one other** factor that affects our health.

..... [1]

6 Blessy uses chromatography to separate a mixture of coloured inks.



(a) The diagram shows the equipment that Blessy uses in a chromatography experiment.



The assembled equipment does **not** give accurate results.

Explain why.

.....

.....

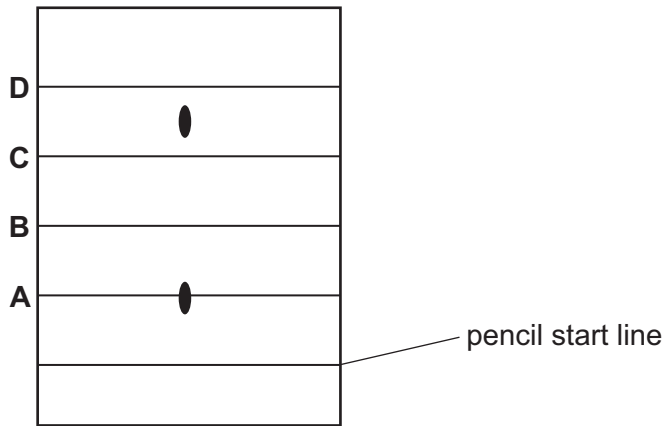
.....

..... [2]

(b) Blessy corrects her assembled equipment and uses it to separate the ink.

The solvent travels up the chromatography paper.

The diagram shows the results of her experiment.



Complete the sentence.

Choose from **A** , **B**, **C** or **D**.

Blessy takes the chromatography paper out of the beaker when the solvent is at

height .....

[1]

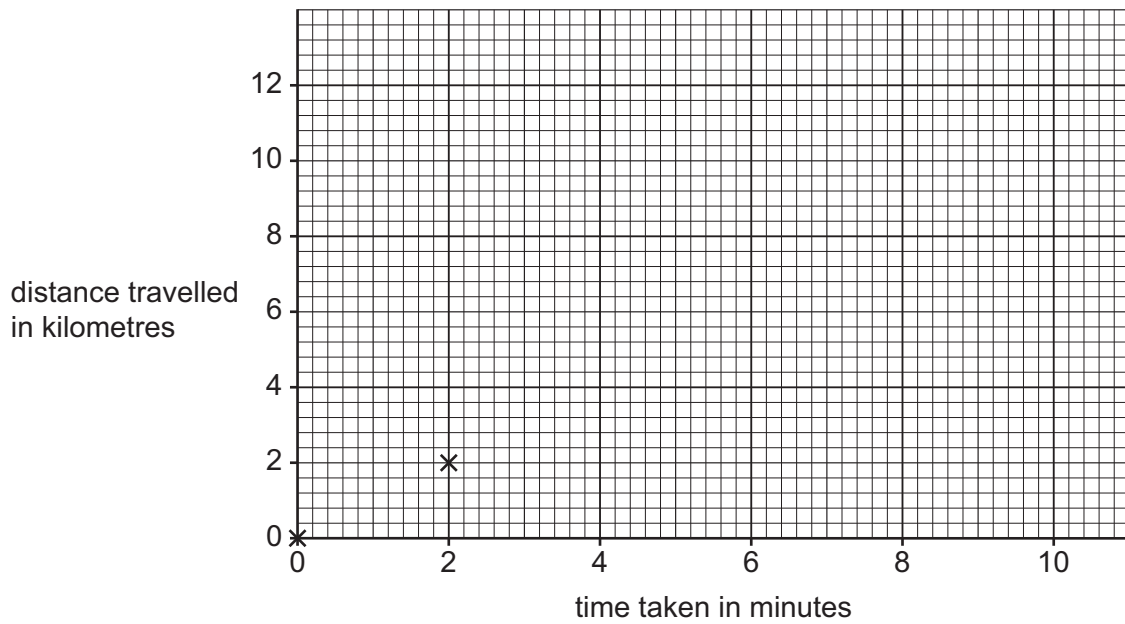
7 Yuri collects information about a car journey.



time taken in minutes	distance travelled in kilometres
0	0
2	2
4	4
6	4
8	8
10	12

(a) Complete the graph by:

- plotting the missing results
- connecting each point to the next point using a straight line.



[2]

(b) Which statement describes the motion of the car?

Use the information in the table.

Tick (✓) the correct answer.

constant speed and then constant faster speed

constant speed and then constant slower speed

constant speed, not moving and then constant faster speed

constant speed, not moving and then constant slower speed

[1]

(c) Calculate the mean speed of the car between 6 minutes and 10 minutes.

Use the information in the table.

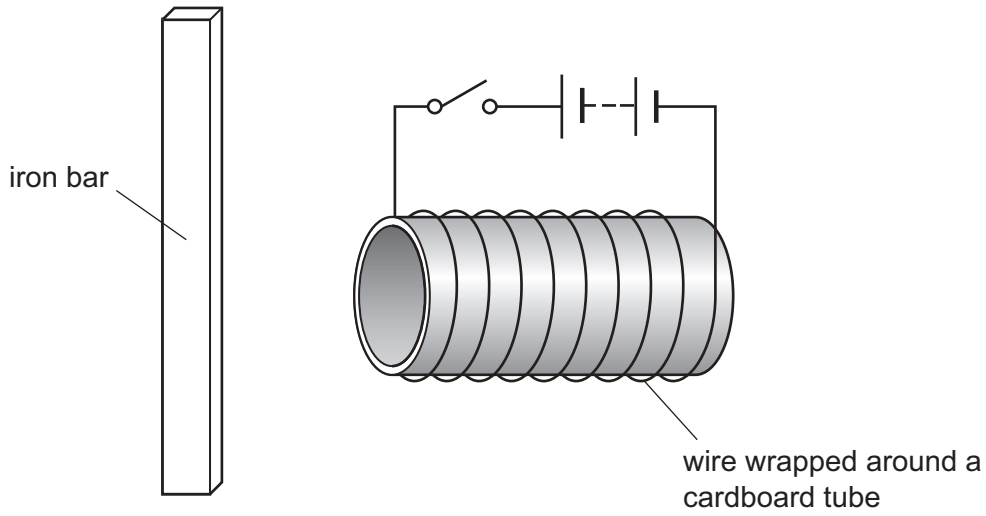
Include the unit for speed in your answer.

speed = ..... unit ..... [3]

8 Chen makes an electromagnet.



Look at the diagram of his equipment.



(a) Describe how Chen uses the equipment to make an electromagnet.

.....

.....

.....

..... [2]

(b) Headphones contain electromagnets.

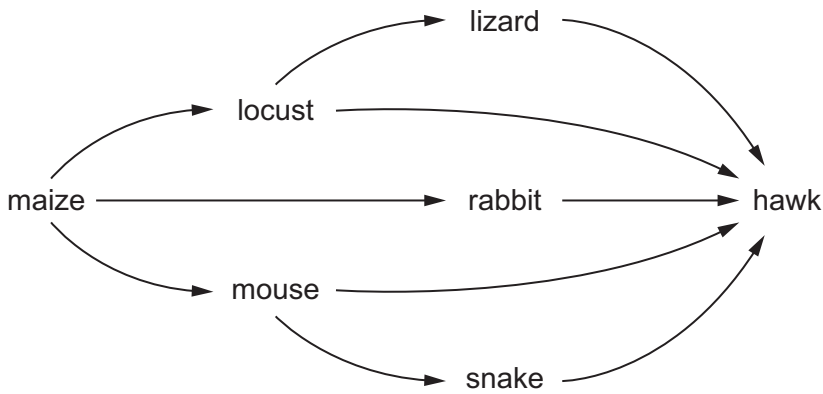
Write down **one other** use of an electromagnet.

..... [1]

9 DDT was a chemical used to kill insects that eat plant crops.



Look at the diagram of a food web.



(a) DDT was sprayed on the maize.

Explain why there were high concentrations of DDT in the hawk.

.....  
.....  
..... [2]

(b) DDT damages the eggs of the hawk.

Describe and explain how this affects the snake population.


description .....

explanation .....

.....  
.....

[2]

10 Mia has  $100\text{ cm}^3$  of a solution.

 Tick (✓) **all** the boxes that increase the concentration of the solution.

decrease the number of particles of solvent


decrease the temperature of the solution

increase the number of particles of solute

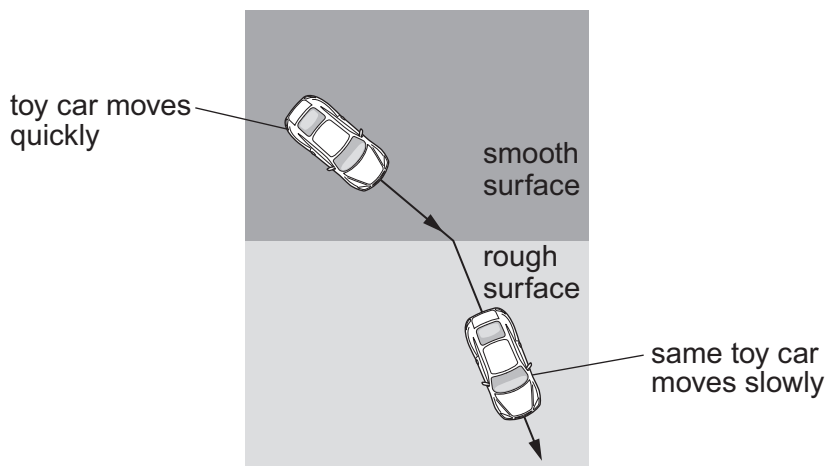
stir the solution

[2]

11 Lily learns about the properties of light.

 She uses an analogy.

Look at the diagram of her analogy.



(a) Describe what is meant by an analogy.

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

(b) Which property of light is shown by her analogy?

Circle the correct answer.

- absorption**      **dispersion**      **reflection**      **refraction**

[1]

(c) Explain how her analogy is used to show this property of light.

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

12 There are many galaxies in the Universe.



(a) Write down the components that form the structure of a galaxy.

.....

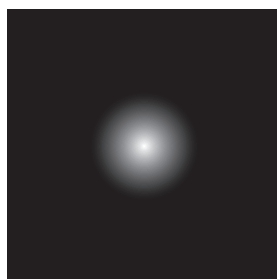
.....

.....

..... [3]

(b) Galaxies change from round to surfboard shape when they collide.

Look at the pictures of these types of galaxy.



round



surfboard

In the past, scientists predicted that **all** the galaxies in the early Universe were round because the galaxies had **not** collided.

Scientists now have images of the early Universe that show 80% of the galaxies were surfboard shape.

These images contradict one of the ideas that scientists in the past had about galaxies.

Tick (✓) this contradiction.

All galaxies are surfboard shape.

Galaxies have **not** collided.

The Milky Way is a galaxy.

There are two types of galaxies.

[1]

13 This question is about the reactivity of some metals.



(a) Jamila observes the reactions of metals with cold water.

She uses the same mass of metal and the same volume of water in each reaction.

She records her observations in a table.

metal	observation
calcium	metal sinks in the water bubbles slowly eventually forms a colourless solution
potassium	metal moves rapidly on the surface of the water bubbles violently a lilac flame is seen forms a colourless solution
silver	metal sinks in the water no bubbles are seen
<b>X</b>	metal moves around the surface of the water bubbles rapidly forms a colourless solution

(i) Predict which metals in the table are less reactive than metal **X**.

Tick (✓) **all** of the correct metals.

calcium

potassium

silver

[1]

(ii) Sodium reacts with water.

The products of the reaction are sodium hydroxide and hydrogen.

Write a **word** equation for this reaction.

..... [2]

(b) Gold is described as inert.

What is the meaning of the word inert?

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

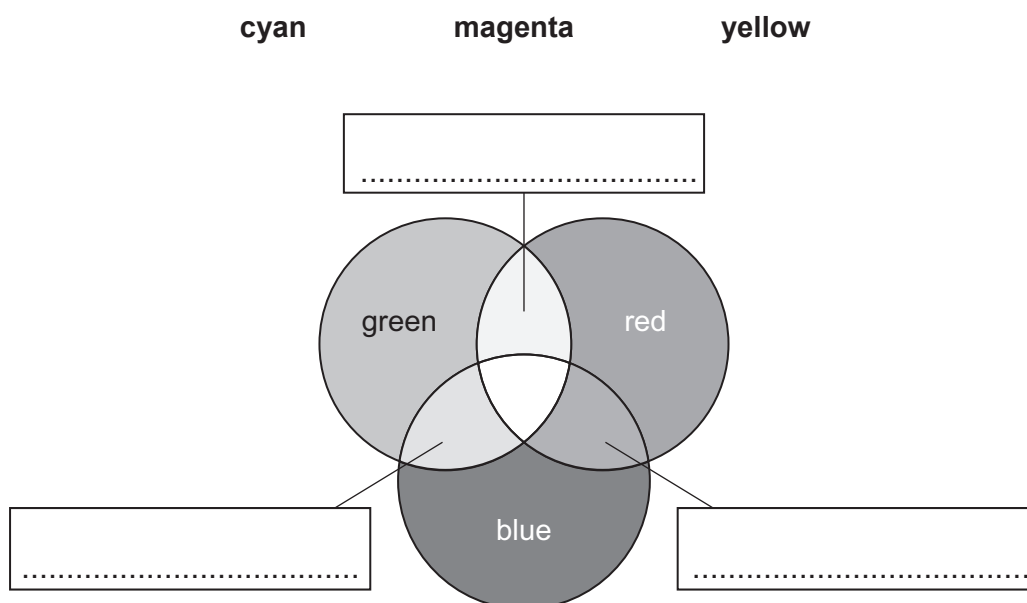
14 The diagram shows equal amounts of colours of light overlapping.



When colours of light overlap the colours of light are added together.

Complete the **three** labels on the diagram to show these colours of light.

Choose words from the list.



[1]