

FOR OFFICIAL USE

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KU PS

Total Mark

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3700/401

NATIONAL
QUALIFICATIONS
2007

MONDAY, 21 MAY
9.00 AM – 10.00 AM

SCIENCE
STANDARD GRADE
Foundation Level

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Date of birth

Day Month Year

Scottish candidate number

Number of seat

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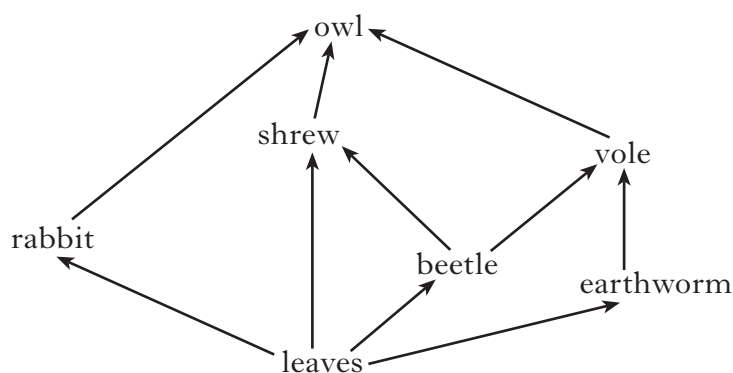
- 1 Answer as many questions as you can.
- 2 Read the whole of each question carefully before you answer it.
- 3 Write your answers in the spaces provided. Showing working may help in some questions.
- 4 Before leaving the examination room you must give this book to the invigilator. If you do not, you may lose all the marks for this paper.



Marks

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8. A food web from a woodland habitat is shown below.



(a) Where do the leaves get their energy from?

.....

1

(b) The owl hunts and kills rabbits for food.

What word is used to describe an animal that hunts and kills other animals for food?

.....

1

(c) An **omnivore** is an animal which eats both plants and animals.

Name the omnivore in this food web.

.....

1

(d) **Using the food web shown above**, write down a food chain containing four organisms.

..... → → →

1

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9. Use the information in the passage to answer the questions.

Traditional windmills use the power of the wind to turn mill stones and drive water pumps. Modern wind turbines also use the power of the wind. However, a modern wind turbine turns a generator which produces electricity.

The electricity produced by wind turbines goes into the National Grid. The National Grid then carries the electricity to homes and industries throughout Britain.

A 600 kW wind turbine can supply the electricity needed for 400 households. Although wind speeds are always changing, there is usually enough wind to operate the turbine for 70% of the time. A wind turbine is designed to last for about 20 years. However, moving parts such as blades and gearboxes must be regularly maintained to prevent the wind turbine from breaking down.

(a) What were traditional windmills used for?

.....

(b) What happens to the electricity after it goes into the National Grid?

.....

(c) How many households can a 600 kW wind turbine supply?

.....

(d) Name **two** parts of a wind turbine that must be regularly maintained.

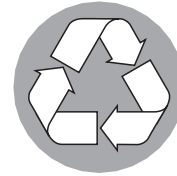
..... and

[Turn over

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10. Special bins are used to separate household rubbish for **recycling**.



(a) What does **recycling** mean?

.....

1

(b) **Glass** is one type of waste that can be recycled.

(i) Name one other **type** of waste that can be recycled.

.....

1

(ii) A household collected 96 glass bottles in 12 weeks.

How many bottles were collected, on average, each week?

Space for working

Answer

1

11. A company is choosing a material for covering chairs.



The material must be flame-proofed so that it is safe.

Give **one** other factor that the company might consider when choosing which material to use.

.....

.....

1

Marks

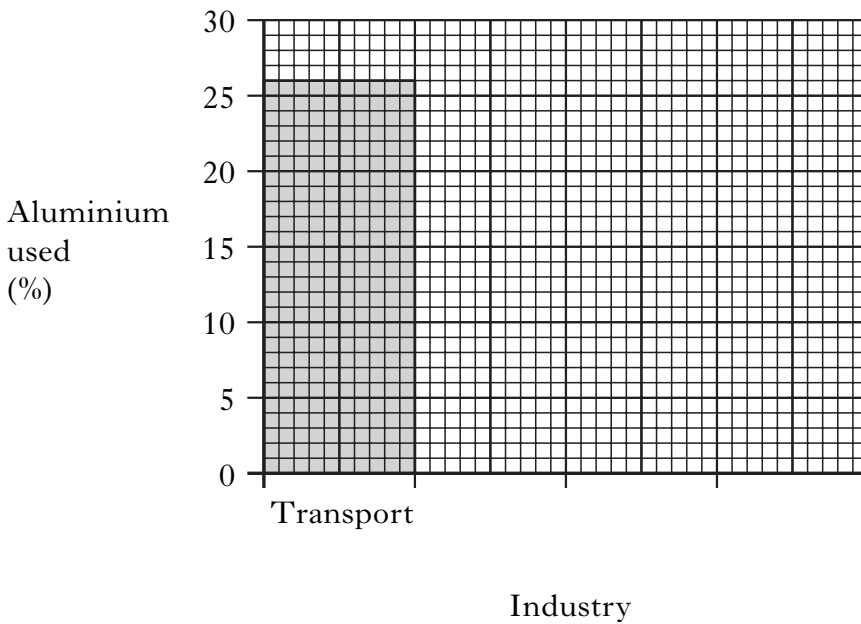
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2	
2	

19. The transport industry is the biggest user of aluminium in the world. It uses 26% of the aluminium produced. 22% of the world's aluminium production is used by the packaging industry. The construction industry uses 20% of the aluminium produced, while the electrical engineering industry uses 9%.

(a) Use this information to complete the table below.

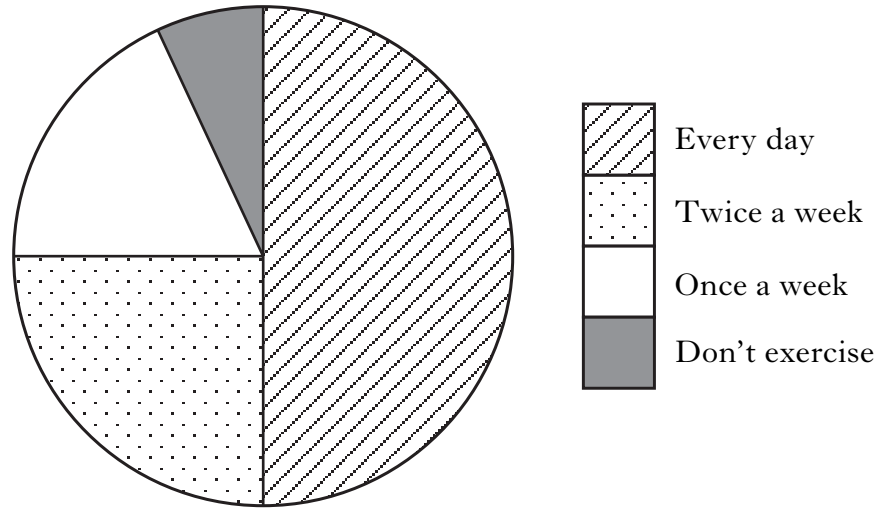
<i>Industry</i>	<i>Aluminium used (%)</i>

(b) Use this information to complete the bar graph.
(Additional graph paper, if required, can be found on page 19.)



[Turn over

20. In a survey, pupils were asked how often they exercise.
The results are shown in the pie chart.



Marks	DO NOT WRITE IN THIS MARGIN	
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1		
1		

(a) What percentage of pupils exercise every day?
.....%

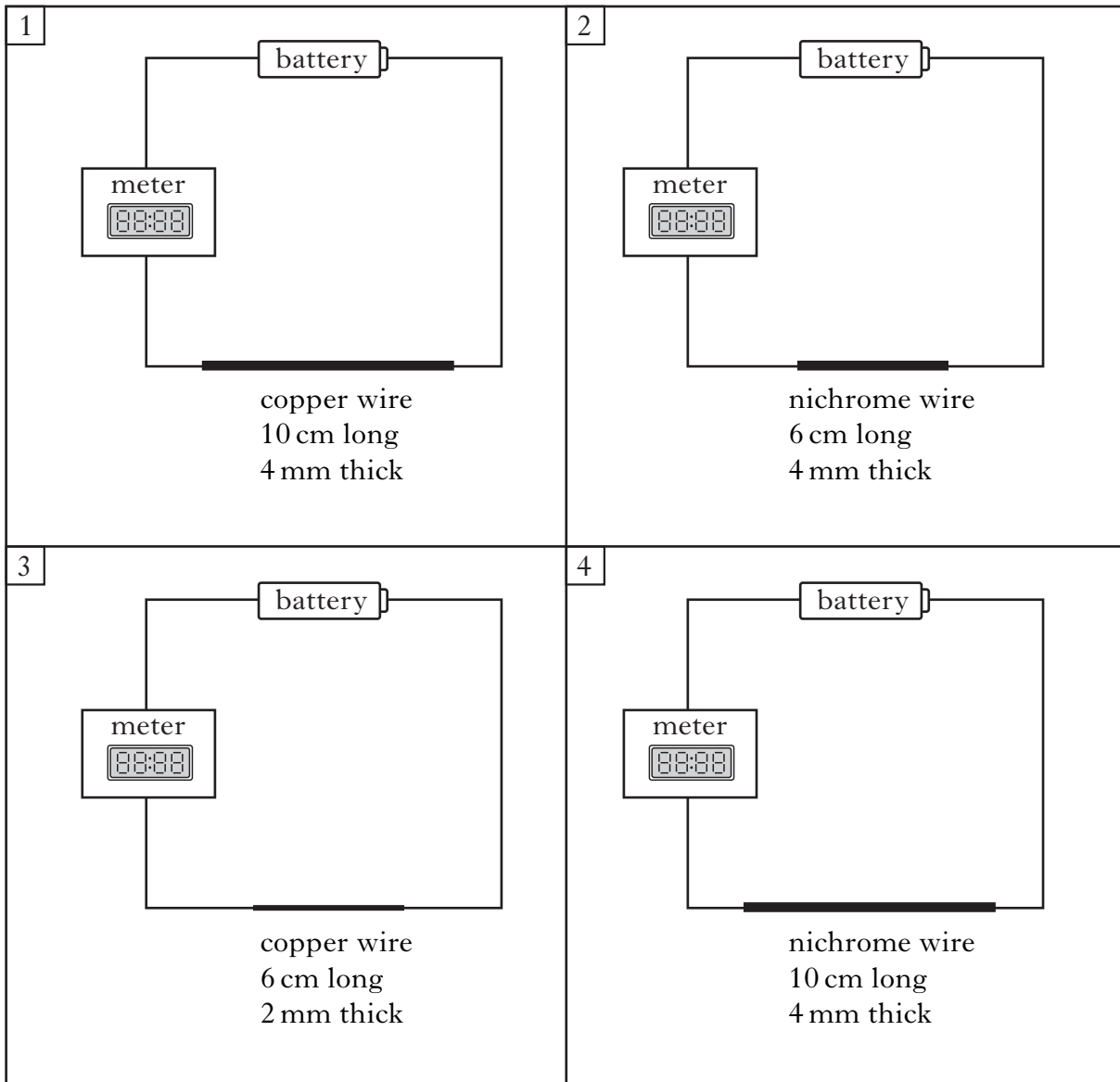
(b) There were 60 pupils in the survey.
How many pupils exercise twice a week?

Space for working

Answer pupils

21. Susan compared the current that flowed in different wires. She set up the circuits shown below.

Marks



(a) Susan wanted to find out if more current flowed in copper wire or nichrome wire.

Which **two** circuits should she choose for a fair test?

Box numbers and 1

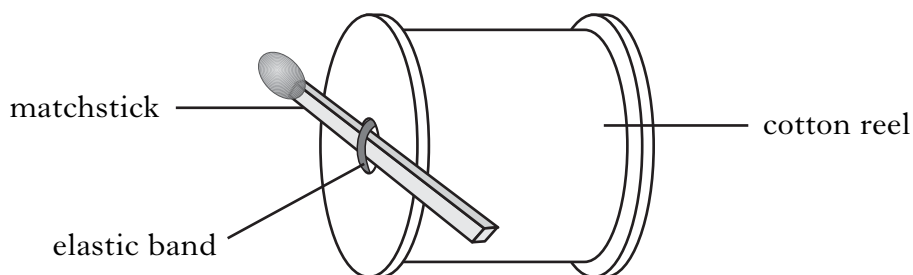
(b) What was Susan trying to find out if she compared circuits 2 and 4?

..... 1

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[Turn over

25. Edward made a model tank from a cotton reel, an elastic band and a matchstick. Marks



When he turned the matchstick and let go, the tank moved forward.

He investigated how far the tank travelled using different numbers of turns of the matchstick and different thicknesses of elastic band.

His results are shown below.

<i>Number of turns of the matchstick</i>	<i>Thickness of elastic band</i>	<i>Distance travelled (cm)</i>
5	thick	35
10	thick	69
15	thick	101
5	thin	23
10	thin	44
15	thin	69

Draw **two** conclusions from these results.

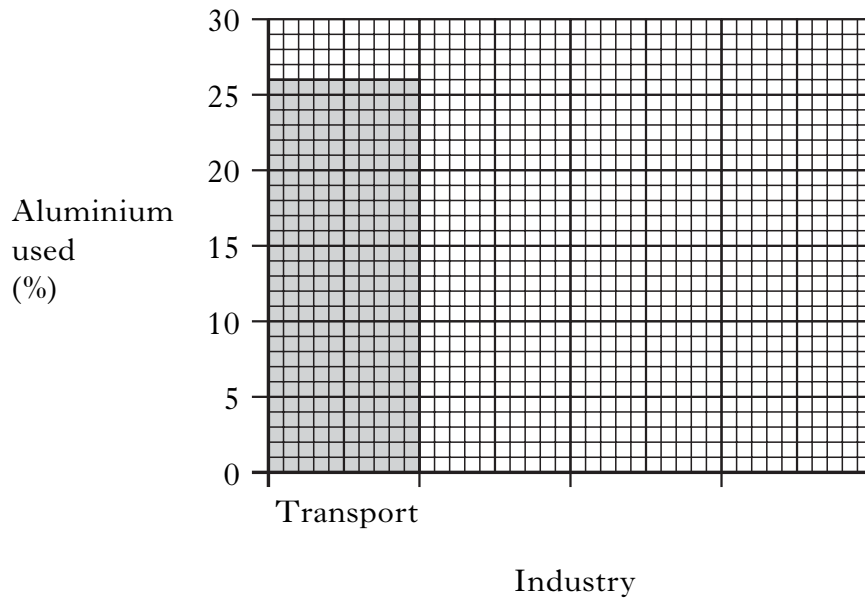
- 1
-
- 2
-

2

[END OF QUESTION PAPER]

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ADDITIONAL GRAPH PAPER FOR USE IN QUESTION 19(b)



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