Natural Sciences and Technology · Grade 4

Energy and Change; Planet Earth and Beyond

Term 3–4 | 9 questions | CAPS-aligned

TOTAL 40 MARKS

NAME AND SURNAME _____ CLASS _____ DATE _____

Instructions

1. This question paper consists of TWO sections. Answer all the questions.
2. Answer all the questions on the question paper itself, in the spaces provided.
3. Read each question carefully before you begin writing.
4. Write neatly and legibly. Work that cannot be read cannot be marked.
5. You may use a pencil and a ruler for drawings and diagrams.

Question	Content of the question	Marks	Obtained
1	Multiple choice	5	
2	Matching	4	
3	True or false	5	
4	Planet Earth	5	
5	The Sun, the Earth and the Moon	4	
6	Technology: balloon rockets	3	
7	The human ear and hearing	5	
8	Energy chains, input and output	4	
9	Technology: design a musical instrument	5	
	Total	**40**	
	Percentage		%

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Section A — Short questions

1 Multiple choice — 5 marks

Choose the correct answer and circle the letter next to it.

PRACTICE EXAMPLE · DO THIS ONE TOGETHER FIRST

Which one is the biggest?

a An ant b A cat c An elephant

An elephant is much bigger than an ant or a cat, so the answer is c. Circle the c.

This example does not count for marks. It only shows you how to answer.

1.1 About how long does it take for the phases of the Moon to repeat? **(1)**

(a) About a week (b) About a month (29 $\frac{1}{2}$ days) (c) About a year

1.2 In which one is energy STORED? **(1)**

(a) A piece of coal (b) A glass of water (c) A stone

1.3 What is the Sun made of? **(1)**

(a) Ice (b) Hot gas (c) Water

1.4 What is in the middle of our Solar System? **(1)**

(a) The Earth (b) The Moon (c) The Sun

1.5 Rockets carry astronauts and spacecraft into space. How does a rocket move upwards? **(1)**

(a) The wind blows it upwards

(b) It pushes exhaust gases out at its back

(c) The Moon pulls it upwards

2 Matching

4 marks

Match the description in COLUMN A with the correct word in COLUMN B. Write only the LETTER. One word is left over.

2.1 **(4)**

COLUMN A	COLUMN B	Answer
1. The path the Earth follows as it moves around the Sun	A. Volume	1 = _____
2. How high or low a sound is	B. Orbit	2 = _____
3. A small device that helps a person who cannot hear well to hear better	C. Noise pollution	3 = _____
4. Sounds that are too loud or unpleasant, or that go on for a long time	D. Pitch	4 = _____
	E. Hearing aid	

3 True or false

5 marks

Write TRUE or FALSE next to each statement.

3.1 The Sun is the star nearest to the Earth. **(1)**

_____

3.2 There is air and water on the Moon. **(1)**

_____

3.3 The Moon gives off its own light. **(1)**

_____

3.4 The Earth is one of eight planets in our Solar System. **(1)**

_____

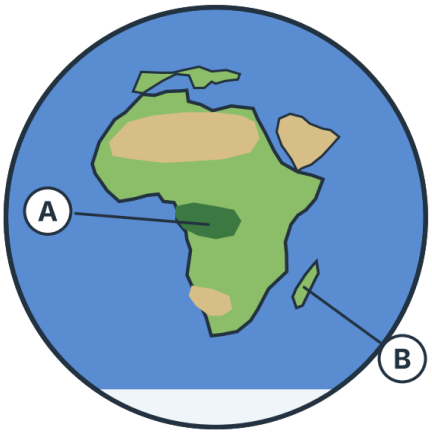
3.5 There is a thin layer of air around the Earth. **(1)**

_____

Section B — Longer questions

4 Planet Earth — 5 marks

The picture shows the Earth seen from space.



4.1 What type of land is shown at A, and what type of land is shown at B? **(2)**

A: _____ B: _____

4.2 What covers most of the Earth's surface? **(1)**

_____

4.3 The Earth and the Moon are both round like a ball. What are they both made of? **(1)**

_____

4.4 The Earth has many different habitats for living things. Name ONE habitat that you can see in the picture. **(1)**

_____

5 The Sun, the Earth and the Moon — 4 marks

5.1 Write the Sun, the Earth and the Moon in order from the BIGGEST to the SMALLEST. **(1)**

_____

5.2 From the Earth, the Sun and the Moon look about the same size in the sky. Why does the Sun look so small? **(1)**

_____

_____

5.3 Why can plants, animals and people live on the Earth? Use the Sun in your answer. **(1)**

5.4 People in many cultures tell stories about the Moon. What do these stories tell us? **(1)**

6 Technology: balloon rockets

3 marks

Grade 4 learners tied a fishing line tightly between two chairs. They threaded a straw onto the line, taped a blown-up balloon to the straw and let it go. They tested three balloon rockets and measured how far each one moved along the line.

Rocket	Distance moved (m)
A	4
B	6
C	2

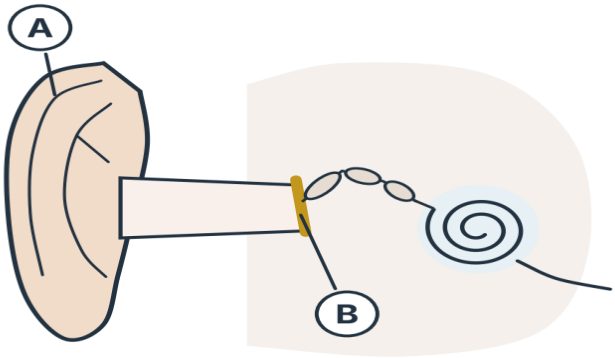
6.1 Draw a BAR GRAPH of the results. Label both axes. **(2)**

6.2 Rocket C moved the shortest distance. Suggest ONE way to make it move further. **(1)**

7 The human ear and hearing

5 marks

7.1 Study the drawing of the human ear. Name the parts labelled A and B. **(2)**



A: _____ B: _____

7.2 Tumi hits a drum. Explain how the sound gets from the drum into Tumi's ear. **(2)**

7.3 Why should you NOT listen to very loud music through earphones for a long time? **(1)**

8 Energy chains, input and output

4 marks

8.1 Thandi eats a mealie (a cob of maize). Draw an energy chain with arrows to show how energy from the Sun reaches Thandi. **(2)**

8.2 A torch is switched on. What is its INPUT energy, and what is its useful OUTPUT energy? **(2)**

9 Technology: design a musical instrument

5 marks

THE DESIGN BRIEF

Your class is giving a concert. Design a musical instrument that you can make from waste materials such as empty tins, plastic bottles, elastic bands, a shoebox or bottle tops.

9.1 How will someone play your instrument: by BLOWING, HITTING or PLUCKING it? **(1)**

9.2 Draw a labelled sketch of your instrument. Label the materials you will use and the part that makes the sound. **(2)**

9.3 How can you change your instrument so that it makes a HIGHER sound? **(1)**

9.4 How will you test whether your instrument works well? **(1)**

Total **40 marks**



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