

SMARTWIZ

GRADE 7 NATURAL SCIENCE EXAM

MARKS: 75

MARKS	

TIME: 1 hour 30 minutes

SCHOOL _____

CLASS (e.g. 4A) _____

SURNAME _____

NAME _____

Instructions for Students:

- > Read all instructions carefully before beginning the exam.
- > Write your name and student ID clearly on the answer sheet/booklet.
- > Answer all questions unless otherwise stated.
- > Show all your work/calculations where applicable.
- > Write clearly and legibly.
- > Use blue or black ink only. * Do not use correction fluid/tape.
- > No electronic devices (calculators, phones, etc.) are allowed unless explicitly permitted.
- > Raise your hand if you have any questions.
- > Do not talk to other students during the exam.
- > Any form of cheating will result in disqualification.

This test consists of 6 pages, excluding the cover page.

SECTION A: LIFE AND LIVING (20 MARKS)

1. Multiple Choice (4 marks)

Circle the correct answer.

1.1 Which part of the plant absorbs water and nutrients?

- A. Stem B. Root C. Leaf D. Flower

1.2 Photosynthesis takes place in the:

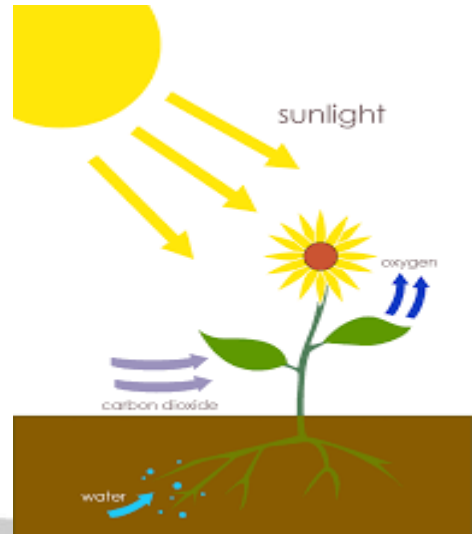
- A. Roots B. Stems C. Leaves D. Flowers

1.3 A food chain always starts with a:

- A. Predator B. Consumer C. Herbivore D. Producer

1.4 Which is a non-living component in an ecosystem?

- A. Grass B. Sunlight C. Insect D. Tree



2. Answer the questions below. (6 marks)





2.1 List two differences between herbivores and carnivores.

2.2 Why is photosynthesis important for living things?

2.3 What role do decomposers play in ecosystems?

3. Food Chain (10 marks)

Use the food chain below to answer the questions:

 Grass →  Rabbit →  Fox →  Eagle

3.1.1 Identify the **producer**:

(1)

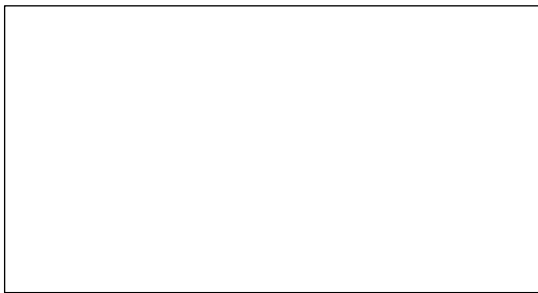
3.1.2 Name TWO consumers:

1. _____
2. _____ (2)

3.1.3 What would happen if all the rabbits were removed?

_____ (2)

3.1.4 Draw and label your own 4-step food chain below: (5)



SECTION B: MATTER AND MATERIALS (20 MARKS)

4. Properties of Materials (6 marks)

4.1 Match the material to its property:

Metal = _____ Wood = _____ Rubber = _____

A. Absorbs water B. Conducts electricity C. Insulator

_____ (3)

4.2 Why are metals used for cooking pots?

1. _____
2. _____ (2)

4.3 What is a physical change?

_____ (1)

5. Solutions and Mixtures (7 marks)

5.1 Define “soluble”:

_____ (1)

5.2 Two examples of soluble substances:

1. _____
2. _____ (2)

5.3 What method separates sand and water?

_____ (1)

5.4 Difference between a mixture and a solution:

_____ (3)

6. Acids, Bases & Indicators (7 marks)

6.1 What colour does litmus paper turn in acid?

_____ (1)

6.2 Name a home-based indicator:

_____ (1)

6.3 Complete the table below: (5)

Substance	Acid/Base/Neutral	Indicator Colour
Lemon juice	_____	_____
Soap water	_____	_____
Distilled water	_____	_____

SECTION C: ENERGY AND CHANGE (20 MARKS)

7. Forms of Energy (6 marks)

Write the type of energy:

7.1.1 Stretched rubber band: _____

7.1.2 Boiling kettle: _____

7.1.3 Moving bicycle: _____

7.1.4 Burning candle: _____

7.1.5 Renewable energy source: _____

7.1.6 Non-renewable energy source: _____

8. Energy Transfer (7 marks)

8.1 How is energy transferred from the sun to a plant?

(2)

8.2 Draw and label an energy chain from sun to human: (3)



8.3 Difference between stored and movement energy:

(2)

9. Electrical Circuits (7 marks)

9.1 What is the battery's function in a circuit?

(1)

9.2 Draw a simple closed circuit with a bulb, switch, and battery. (3)



9.3 What happens if the circuit is open?

(1)

9.4 Give one conductor and one insulator:

Conductor: _____ Insulator: _____ (2)



SECTION D: EARTH AND BEYOND (15 MARKS)

10. The Solar System (7 marks)

10.1 Name the four inner planets in order:

_____ (2)

10.2 Planet known as the “Red Planet”:

_____ (1)

10.3 Two reasons Earth supports life:

1. _____
2. _____ (2)

10.4 Why do we see only one side of the moon?

_____ (2)

11. Earth’s Structure (8 marks)

11.1 Label the layers of the Earth:

1. _____
2. _____
3. _____
4. _____ (4)

11.2 Which layer is hottest?

_____ (1)

11.3 Name two natural disasters from crust movement:

1. _____
2. _____ (2)

11.4 What is magma?

_____ (1)

TOTAL: 75 MARKS

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SECTION A: LIFE AND LIVING (20 MARKS)

1. Multiple Choice (4)

1.1 B

1.2 C

1.3 D

1.4 B

2. Short Answers (6)

2.1

- Herbivores eat plants; carnivores eat other animals.
- Herbivores have flat teeth; carnivores have sharp teeth. (Any two) (2)

2.2 Photosynthesis provides oxygen and food for living things. (2)

2.3 Decomposers break down dead plants and animals and return nutrients to the soil. (2)

3. Food Chain (10)

3.1.1 Grass (1)

3.1.2 Rabbit, Fox (2)

3.1.3 The fox may starve or eat something else; the eagle will lose its food. (2)

3.1.4 Learner's drawing must include:

- 4 correct levels (e.g. Grass → Grasshopper → Frog → Snake)
- Arrows in correct direction
- Clear labels (5)



SECTION B: MATTER AND MATERIALS (20 MARKS)

4. Properties of Materials (6)

4.1.1 B (1)

4.1.2 A (1)

4.1.3 C (1)

4.2

- Good conductor of heat
 - Strong and durable (2)
- 4.3 A physical change does not form a new substance, and can usually be reversed. (1)

5. Solutions and Mixtures (7)

5.1 A substance is soluble if it can dissolve in a liquid. (1)

5.2 Sugar, salt (2)

5.3 Filtration (1)

5.4

- A mixture is a combination of substances that can be separated.
- A solution is a mixture where one substance dissolves in another. (3)

6. Acids, Bases & Indicators (7)

6.1 Red (1)

6.2 Red cabbage juice / turmeric / vinegar (1)

6.3 Table:

Substance	Acid/Base/Neutral	Indicator Colour
Lemon juice	Acid	Red/Pink
Soap water	Base	Blue/Purple
Distilled water	Neutral	No colour change

SECTION C: ENERGY AND CHANGE (20 MARKS)

7. Forms of Energy (6)

7.1.1 Potential

7.1.2 Heat

7.1.3 Kinetic

7.1.4 Light

7.1.5 Solar / Wind / Hydropower (1)

7.1.6 Coal / Oil / Natural gas (1)

8. Energy Transfer (7)

8.1 The plant absorbs light energy and converts it into chemical energy through photosynthesis. (2)

8.2 Diagram should show:

Sun → Plant → Animal → Human (3)

8.3

- Stored energy is potential energy (e.g. in a battery).
- Movement energy is kinetic energy (e.g. in a rolling ball). (2)

9. Electrical Circuits (7)

9.1 It provides energy to power the circuit. (1)

9.2 Drawing includes: battery, wires, bulb, switch and closed circuit. Labels required. (3)

9.3 The bulb will not light up. (1)

9.4

- Conductor: Copper, aluminium
- Insulator: Plastic, rubber (2)



SECTION D: EARTH AND BEYOND (15 MARKS)

10. The Solar System (7)

10.1 Mercury, Venus, Earth, Mars (2)

10.2 Mars (1)

10.3

- Has water
- Suitable temperature
- Oxygen/atmosphere (Any two) (2)

10.4 The moon rotates and revolves at the same speed around Earth. (2)

11. Earth's Structure (8)

11.1

1. Crust
2. Mantle
3. Outer core
4. Inner core (4)

11.2 Inner core (1)

11.3 Earthquakes, volcanoes (2)

11.4 Hot, melted rock found beneath the Earth's surface (1)

TOTAL: 75 MARKS