

SMARTWIZ

GRADE 7 TECHNOLOGY EXAM

MARKS: 40

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 3 pages, excluding the cover page.

SECTION A: ENERGY AND THE ENVIRONMENT ⚡ 🌱 (10 MARKS)

1. Look at the image below and answer the questions:



1.1 What kind of energy does this house use?

_____ (1)

1.2 Give ONE reason why this energy is better than using coal.

_____ (1)

1.3 What time of day does this system work best?

_____ (1)

1.4 Name another clean source of energy.

_____ (1)

1.5 Fill in the blanks using the words: *pollution*, *renewable*, *electricity* (3)

a) Solar power is a _____ energy source.

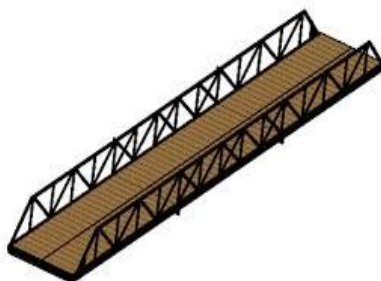
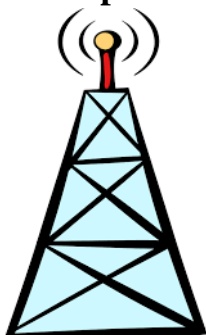
b) It creates no _____.

c) It gives us _____ to power our homes.

1.6 Why is it important to protect the environment? Write one reason. (2)

SECTION B: TYPES OF STRUCTURES 🏗️ (15 MARKS)

2. Look at the three pictures of structures and answer:



2.1 Match the structure to its type: (3)

- A. Frame Structure
- B. Shell Structure
- C. Solid Structure

1. Bridge → _____
 2. Tent → _____
 3. Cellphone tower → _____
-

2.2 Which structure from above: (Choose Image 1, 2 or 3)

- a) Holds weight and supports movement? _____ (1)
- b) Covers an empty space like a shelter? _____ (1)

2.3 Which of these is a **natural structure**? (1)

- A plastic bottle
- A tree
- A wall

Answer: _____

2.4 Circle the materials used in a **frame structure**: (2)

- Cardboard
- Steel rods
- Wooden poles
- Plastic wrap

2.5 Give ONE reason why engineers test their structures before building. (2)

2.6 What happens if a building is not built properly? Write ONE possible danger. (2)

SECTION C: DESIGN & MODELS **(15 MARKS)**

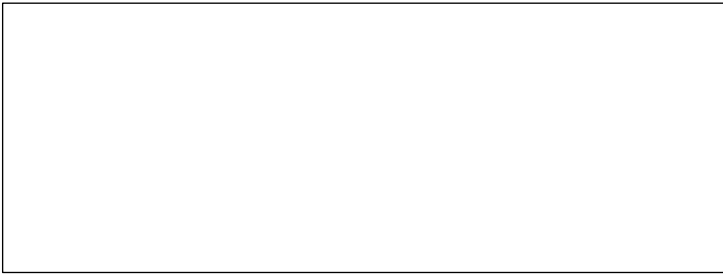
3. Imagine your school needs a new recycling bin made from old materials.

3.1 What is the problem your design will solve? (1)

3.2 What recycled materials will you use? Name TWO. (2)

1. _____
2. _____

3.3 Draw your idea for the recycling bin. Label at least TWO parts. (5)



3.4 What should your recycling bin be able to do? _____ (1)

3.5 Why is using old materials in your design a good thing? _____ (2)

3.6 What safety step should you take when cutting plastic or metal? _____ (2)

3.7 List TWO tools you would use for your design. (2)

1. _____
2. _____

TOTAL: 40 MARKS

MEMO

SECTION A: ENERGY AND THE ENVIRONMENT (10 MARKS)

1.1 Solar energy / Solar power ✓ (1)

1.2 It is clean / Does not pollute / Renewable ✓ (1)

1.3 During the day / When the sun is shining ✓ (1)

1.4 Wind energy / Hydropower / Biomass ✓ (1)

1.5 Fill in the blanks:

a) Renewable ✓

b) Pollution ✓

c) Electricity ✓ (3)

1.6 Protecting nature / Keeping the air and water clean / Saving animals / A healthy future ✓ ✓ (Any valid reason – 2 marks)

SECTION B: TYPES OF STRUCTURES (15 MARKS)

2.1 Matching:

- Bridge → C (Solid Structure) ✓
- Tent → B (Shell Structure) ✓
- Cellphone tower → A (Frame Structure) ✓ (3)

2.2

a) Image 1 (Bridge) ✓ (1)

b) Image 2 (Tent) ✓ (1)

2.3 Tree ✓ (1)

2.4 Steel rods ✓

Wooden poles ✓ (2)

2.5 To make sure it is safe / strong / will not fall down ✓ ✓ (2)

2.6 It may collapse / hurt people / not last long ✓ ✓ (2)

SECTION C: DESIGN & MODELS (15 MARKS)

3.1 Litter problem / No place to recycle / Dirty school environment ✓ (1)

3.2

- Tin cans
- Plastic bottles
- Cardboard boxes
- Old wood ✓ ✓ (Any two valid – 2 marks)

3.3 Drawing:

Neat, labeled drawing of a recycling bin

- Shape clear (1)
 - At least 2 correct labels (2)
 - Recycled materials shown (2)
- ✓ ✓ ✓ ✓ ✓ (5)

3.4 It should hold waste / keep waste separated / be easy to open ✓ (1)

3.5 It reduces waste / saves money / helps environment ✓ ✓ (2)

3.6 Wear gloves / use scissors carefully / ask for adult help ✓ ✓ (2)

3.7

Any two of: scissors, glue gun, ruler, hammer, screwdriver ✓ ✓ (2)

TOTAL: 40 MARKS