SCIENCE YEAR 9 - UNIT 2 - LESSON 2

Physical Properties and Material Selection

Use this worksheet after reading the lesson to practise the key ideas and prove you can meet the success criteria.

Name _____

Date _____

Class _____

1. Key Ideas

Material choice becomes stronger when students stop saying a material is simply “good” and start asking which measurable physical properties match the task. This lesson focuses on the physical-property evidence that guides real material selection.

- common physical properties used in Stage 5 material selection
- physical property evidence can be compared and weighed

2. Success Criteria

By the end, you should be able to:

- common physical properties used in Stage 5 material selection
- different uses demand different combinations of properties
- one property rarely decides suitability by itself

3. Key Terms

Density
Mass per unit volume; helps explain why some materials feel heavy for their size.

Hardness
Resistance to scratching, indentation or wear.

Malleability
Ability to be hammered or shaped without breaking.

Ductility
Ability to be drawn into wires.

Conductivity
Ability to transfer electricity or heat.

Melting point
The temperature at which a substance changes from solid to liquid.

4. Activity: Build the Lesson Map

Use the lesson to complete the table. Keep answers brief but specific.

Prompt	Your answer
Main concept	
Important example	
Common mistake to avoid	
How this links to the next lesson	

5. Short Answer Questions

1. Explain this lesson goal in your own words: "common physical properties used in Stage 5 material selection". Use one specific example from the lesson.

CORE

2. Apply this idea to a new example: "different uses demand different combinations of properties". Show your reasoning clearly.

CORE

3. Analyse why this idea matters for understanding Physical Properties and Material Selection: "one property rarely decides suitability by itself".

REASONING

6. Extend: Apply the Idea

A student says, "I understand Physical Properties and Material Selection because I memorised the definition."

Explain why memorising a definition is not enough. Use an example from the lesson to show deeper understanding.

7. Multiple Choice

1. What is the best first step when answering a question about Physical Properties and Material Selection?

☐ A. Identify the key concept being tested

☐ B. Write every fact from memory

☐ C. Ignore the command word

☐ D. Skip examples and evidence

2. Which answer would show stronger understanding of Physical Properties and Material Selection?

☐ A. An answer with accurate terms and reasoning

☐ B. A copied definition only

☐ C. A single-word response

☐ D. An answer with no example

3. What should you do if a question asks you to explain?

☐ A. Link the idea to a reason or cause

☐ B. List unrelated facts

☐ C. Only draw a diagram

☐ D. Write the shortest possible answer

8. Success Criteria Proof

Finish with evidence that you can do each success criterion.

SUCCESS CRITERION 1

Prove that you can: common physical properties used in Stage 5 material selection

SUCCESS CRITERION 2

Prove that you can: different uses demand different combinations of properties

SUCCESS CRITERION 3

Prove that you can: one property rarely decides suitability by itself

One thing I still need help with: