SCIENCE YEAR 9 - UNIT 2 - LESSON 3

Chemical Properties and Why They Matter

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

A material can look perfect until it burns, corrodes, reacts, or becomes unstable in the conditions where it is meant to be used. This lesson adds chemical properties to the material-selection toolkit and shows why they matter just as much as physical properties.

- chemical properties influence whether a material is safe and useful
- a material may fail because of chemical behaviour, not just physical weakness

2. Success Criteria

By the end, you should be able to:

- chemical properties influence whether a material is safe and useful
- reactivity, flammability, corrosion and stability are major examples
- physical properties alone do not fully determine suitability

3. Key Terms

Chemical property
A property that describes how a substance behaves in a chemical change.

Reactivity
How readily a substance takes part in a chemical change.

Flammability
How easily a substance ignites and burns.

Corrosion
Chemical deterioration of a material, often involving reaction with the environment.

Stability
How resistant a substance is to unwanted chemical change under particular conditions.

Hazard
Something that can cause harm if a material is used in the wrong context.

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: "chemical properties influence whether a material is safe and useful". Use one specific example from the lesson.

CORE

2. Apply this idea to a new example: "reactivity, flammability, corrosion and stability are major examples". Show your reasoning clearly.

CORE

3. Analyse why this idea matters for understanding Chemical Properties and Why They Matter: "physical properties alone do not fully determine suitability".

REASONING

6. Extend: Apply the Idea

A student says, "I understand Chemical Properties and Why They Matter 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 Chemical Properties and Why They Matter?

☐ 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 Chemical Properties and Why They Matter?

☐ 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: chemical properties influence whether a material is safe and useful

SUCCESS CRITERION 2

Prove that you can: reactivity, flammability, corrosion and stability are major examples

SUCCESS CRITERION 3

Prove that you can: physical properties alone do not fully determine suitability

One thing I still need help with: