SCIENCE YEAR 9 - UNIT 2 - LESSON 20

Final Material Assessment and Depth Study Synthesis

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

This lesson brings the whole unit together. Students move from separate chemistry ideas into full material-selection judgement by combining structure, bonding, resource source, polymer properties and environmental impact using explicit criteria.

- material decisions can be based on multiple explicit criteria
- good science explanations connect structure and properties to use

2. Success Criteria

By the end, you should be able to:

- material decisions can be based on multiple explicit criteria
- bonding, hydrocarbons, polymers and sustainability all contribute to material choice
- the strongest answers use evidence rather than preference

3. Key Terms

Criteria
The specific standards used to judge whether a material is suitable for a task.

Material assessment
A judgement about a material based on evidence from properties, structure, source and likely impacts.

Synthesis
Combining different ideas into one stronger overall explanation or judgement.

Trade-off
A gain in one area that may come with a cost or disadvantage in another area.

Depth-study style question
A broader problem that requires evidence, comparison and clear justification rather than short recall only.

Justification
A reasoned explanation that uses evidence to support a decision.

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: "material decisions can be based on multiple explicit criteria". Use one specific example from the lesson.

CORE

2. Apply this idea to a new example: "bonding, hydrocarbons, polymers and sustainability all contribute to material choice". Show your reasoning clearly.

CORE

3. Analyse why this idea matters for understanding Final Material Assessment and Depth Study Synthesis: "the strongest answers use evidence rather than preference".

REASONING

6. Extend: Apply the Idea

A student says, "I understand Final Material Assessment and Depth Study Synthesis 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 Final Material Assessment and Depth Study Synthesis?

☐ 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 Final Material Assessment and Depth Study Synthesis?

☐ 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: material decisions can be based on multiple explicit criteria

SUCCESS CRITERION 2

Prove that you can: bonding, hydrocarbons, polymers and sustainability all contribute to material choice

SUCCESS CRITERION 3

Prove that you can: the strongest answers use evidence rather than preference

One thing I still need help with: