SCIENCE YEAR 8 - UNIT 2 - LESSON 4

Why Scientists Use Models

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

Atoms are too small to see directly in ordinary classroom experience, but that does not stop science from explaining them. This lesson shows why scientists use models, what models help us do, and why a model is useful without being a perfect copy of reality.

- scientists use models to explain things that are difficult to observe directly
- a model is useful without being a perfect photograph of reality

2. Success Criteria

By the end, you should be able to:

- scientists use models to explain things that are difficult to observe directly
- models can be diagrams, physical objects or symbolic representations
- all models have strengths and limitations

3. Key Terms

Model
A representation used to explain, describe or predict something in science.

Representation
A way of showing an idea using words, diagrams, objects or symbols.

Evidence
Information scientists use to support explanations and models.

Limitation
Something a model cannot show well or cannot explain fully.

Simplified
Made easier to understand by leaving out some detail.

Atomic model
A model used to help explain what atoms are like and how they behave.

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: "scientists use models to explain things that are difficult to observe directly". Use one specific example from the lesson.

CORE

2. Apply this idea to a new example: "models can be diagrams, physical objects or symbolic representations". Show your reasoning clearly.

CORE

3. Analyse why this idea matters for understanding Why Scientists Use Models: "all models have strengths and limitations".

REASONING

6. Extend: Apply the Idea

A student says, "I understand Why Scientists Use Models 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 Why Scientists Use Models?

☐ 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 Why Scientists Use Models?

☐ 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: scientists use models to explain things that are difficult to observe directly

SUCCESS CRITERION 2

Prove that you can: models can be diagrams, physical objects or symbolic representations

SUCCESS CRITERION 3

Prove that you can: all models have strengths and limitations

One thing I still need help with: