SCIENCE YEAR 9 - UNIT 2 - LESSON 14

Combustion of Hydrocarbons

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 explains what happens when hydrocarbons burn, compares complete and incomplete combustion, and connects combustion outcomes to energy use, efficiency and safety. The key Stage 5 move is comparing products and consequences rather than memorising isolated facts.

- hydrocarbon combustion can be complete or incomplete
- oxygen supply affects combustion outcomes

2. Success Criteria

By the end, you should be able to:

- hydrocarbon combustion can be complete or incomplete
- the main products of complete combustion are carbon dioxide and water
- incomplete combustion can produce carbon monoxide and soot

3. Key Terms

Combustion
A chemical reaction in which a fuel burns and releases energy.

Complete combustion
Combustion with enough oxygen, usually producing carbon dioxide, water and a strong energy release.

Incomplete combustion
Combustion with limited oxygen, which can produce carbon monoxide and/or soot as well as less efficient energy release.

Carbon dioxide
A common product of complete combustion of hydrocarbons.

Carbon monoxide
A poisonous gas that can form during incomplete combustion.

Soot
Fine carbon particles that can form in incomplete combustion.

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: "hydrocarbon combustion can be complete or incomplete". Use one specific example from the lesson.

CORE

2. Apply this idea to a new example: "the main products of complete combustion are carbon dioxide and water". Show your reasoning clearly.

CORE

3. Analyse why this idea matters for understanding Combustion of Hydrocarbons: "incomplete combustion can produce carbon monoxide and soot".

REASONING

6. Extend: Apply the Idea

A student says, "I understand Combustion of Hydrocarbons 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 Combustion of Hydrocarbons?

☐ 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 Combustion of Hydrocarbons?

☐ 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: hydrocarbon combustion can be complete or incomplete

SUCCESS CRITERION 2

Prove that you can: the main products of complete combustion are carbon dioxide and water

SUCCESS CRITERION 3

Prove that you can: incomplete combustion can produce carbon monoxide and soot

One thing I still need help with: