

Hydrocarbons and Simple Alkanes

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 opens the hydrocarbons block by defining hydrocarbons clearly, linking them to fuels and raw materials, and using alkanes as the key simple organic family. The aim is a strong Stage 5 foundation, not senior-level organic chemistry detail.

- hydrocarbons contain only carbon and hydrogen
- one chemical family can have many practical uses

2. Success Criteria

By the end, you should be able to:

- hydrocarbons contain only carbon and hydrogen
- hydrocarbons matter as both fuels and raw materials
- alkanes are the key simple hydrocarbon family at this level

3. Key Terms

Hydrocarbon

A compound made only of hydrogen and carbon atoms.

Fuel

A substance that can release useful energy when it burns.

Raw material

A starting material used to make other useful products.

Alkane

A simple hydrocarbon family used as the key Stage 5 entry point, such as methane or propane.

Methane

The simplest alkane, with formula CH_4 .

Natural gas

A fuel source containing mainly methane.

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: "hydrocarbons contain only carbon and hydrogen". Use one specific example from the lesson.

CORE

2. Apply this idea to a new example: "hydrocarbons matter as both fuels and raw materials". Show your reasoning clearly.

CORE

3. Analyse why this idea matters for understanding Hydrocarbons and Simple Alkanes: "alkanes are the key simple hydrocarbon family at this level".

REASONING

6. Extend: Apply the Idea

A student says, "I understand Hydrocarbons and Simple Alkanes 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 Hydrocarbons and Simple Alkanes?

- 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 Hydrocarbons and Simple Alkanes?

- 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: hydrocarbons contain only carbon and hydrogen

SUCCESS CRITERION 2

Prove that you can: hydrocarbons matter as both fuels and raw materials

SUCCESS CRITERION 3

Prove that you can: alkanes are the key simple hydrocarbon family at this level

One thing I still need help with:
