

Hydrocarbon Reactions — Combustion, Substitution, Addition & Polymerisation

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

Hydrocarbons are only useful because they react in predictable ways. A chemist can tell whether a molecule will burn, substitute, add across a double bond, or polymerise simply by looking at its bonding and functional groups.

- The conditions and products for combustion, substitution, and addition reactions
- Why the C=C double bond makes alkenes more reactive than alkanes

2. Success Criteria

By the end, you should be able to:

- The conditions and products for combustion, substitution, and addition reactions
- Why alkenes decolourise bromine water but alkanes do not
- How addition polymerisation forms long-chain polymers from monomers

3. Key Terms

Key idea

The central concept from Hydrocarbon Reactions — Combustion, Substitution, Addition & Polymerisation.

Evidence

Information, observations or calculations used to support an answer.

Explain

Give a reasoned answer that links cause and effect.

Apply

Use a learned idea in a new example, problem or scenario.

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: "The conditions and products for combustion, substitution, and addition reactions". Use one specific example from the lesson.

BAND 3 **2 MARKS**

2. Apply this idea to a new example: "Why alkenes decolourise bromine water but alkanes do not". Show your reasoning clearly.

BAND 4 **3 MARKS**

3. Analyse why this idea matters for understanding Hydrocarbon Reactions — Combustion, Substitution, Addition & Polymerisation: "How addition polymerisation forms long-chain polymers from monomers".

BAND 5 **4 MARKS**

6. Extend: Apply the Idea

BAND 5/6

5 MARKS

A student gives a memorised answer about Hydrocarbon Reactions — Combustion, Substitution, Addition & Polymerisation but does not use evidence or reasoning.

Improve the answer by writing a stronger response that uses accurate terminology, a relevant example and a clear explanation.

7. Multiple Choice

1. What is the best first step when answering a question about Hydrocarbon Reactions — Combustion, Substitution, Addition & Polymerisation?

- 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 Hydrocarbon Reactions — Combustion, Substitution, Addition & Polymerisation?

- 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: The conditions and products for combustion, substitution, and addition reactions

BAND 3 **2 MARKS**

SUCCESS CRITERION 2

Prove that you can: Why alkenes decolourise bromine water but alkanes do not

BAND 4 **3 MARKS**

SUCCESS CRITERION 3

Prove that you can: How addition polymerisation forms long-chain polymers from monomers

BAND 5 **4 MARKS**

One thing I still need help with:
