SCIENCE YEAR 9 - UNIT 2 - LESSON 13

Naming and Representing 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 turns the alkane family into a usable naming and representation system. Students learn the Stage 5 IUPAC names for simple alkanes from `C1` to `C8`, recognise their formulas, and reproduce simple structures without drifting into senior-level organic chemistry.

- the IUPAC names for simple alkanes from `methane` to `octane`
- alkane names and formulas follow a pattern linked to carbon number

2. Success Criteria

By the end, you should be able to:

- the IUPAC names for simple alkanes from `methane` to `octane`
- the formulas for simple alkanes from `C1` to `C8`
- how to reproduce simple alkane structures at the required Stage 5 level

3. Key Terms

IUPAC name
The standard scientific name used to identify a substance consistently.

Molecular formula
A formula showing the number of each type of atom in a molecule.

Structural representation
A simple way of showing how atoms are connected in a molecule.

Carbon chain
A connected sequence of carbon atoms in an organic molecule.

Alkane
A simple hydrocarbon family used in this unit as the main Stage 5 entry pattern.

C1-C8
The simple alkane range students should recognise by name, formula and basic representation.

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 IUPAC names for simple alkanes from `methane` to `octane`". Use one specific example from the lesson.

CORE

2. Apply this idea to a new example: "the formulas for simple alkanes from `C1` to `C8`". Show your reasoning clearly.

CORE

3. Analyse why this idea matters for understanding Naming and Representing Simple Alkanes: "how to reproduce simple alkane structures at the required Stage 5 level".

REASONING

6. Extend: Apply the Idea

A student says, "I understand Naming and Representing 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 Naming and Representing 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 Naming and Representing 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: the IUPAC names for simple alkanes from `methane` to `octane`

SUCCESS CRITERION 2

Prove that you can: the formulas for simple alkanes from `C1` to `C8`

SUCCESS CRITERION 3

Prove that you can: how to reproduce simple alkane structures at the required Stage 5 level

One thing I still need help with: