CHEMISTRY YEAR 12 - MODULE 7 - LESSON 9

Structure & Properties of Alcohols — Classification, Hydrogen Bonding & Solubility

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

Alcohols are the gateway functional group of Module 7 — they connect back to the hydrocarbons you just studied, forward to aldehydes, ketones, carboxylic acids and esters, and sideways to the fermentation chemistry that has shaped human civilisation for ten thousand years.

- The structural definition of primary, secondary, and tertiary alcohols
- Why alcohols have dramatically higher boiling points than comparable alkanes

2. Success Criteria

By the end, you should be able to:

- The structural definition of primary, secondary, and tertiary alcohols
- That alcohols form hydrogen bonds via O-H (donor) and lone pairs on O (acceptor)
- The boiling point order: primary > secondary > tertiary for constitutional isomers

3. Key Terms

Key idea
The central concept from Structure & Properties of Alcohols — Classification, Hydrogen Bonding & Solubility.

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 structural definition of primary, secondary, and tertiary alcohols". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "That alcohols form hydrogen bonds via O-H (donor) and lone pairs on O (acceptor)". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Structure & Properties of Alcohols — Classification, Hydrogen Bonding & Solubility: "The boiling point order: primary > secondary > tertiary for constitutional isomers".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Structure & Properties of Alcohols — Classification, Hydrogen Bonding & Solubility 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 Structure & Properties of Alcohols — Classification, Hydrogen Bonding & Solubility?

☐ 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 Structure & Properties of Alcohols — Classification, Hydrogen Bonding & Solubility?

☐ 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 structural definition of primary, secondary, and tertiary alcohols

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: That alcohols form hydrogen bonds via O-H (donor) and lone pairs on O (acceptor)

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: The boiling point order: primary > secondary > tertiary for constitutional isomers

BAND 5 4 MARKS

One thing I still need help with: