CHEMISTRY YEAR 11 - MODULE 1 - LESSON 1

Pure Substances, Mixtures and Classification

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

You wouldn't put petrol in a diesel engine — chemistry is built on knowing exactly what you have. Classification is where it all starts: the language every chemist uses before doing anything else.

- The definitions of pure substance, element, compound, and mixture
- Why particle-level structure determines how we classify matter

2. Success Criteria

By the end, you should be able to:

- The definitions of pure substance, element, compound, and mixture
- The difference between homogeneous and heterogeneous mixtures
- How elements are organised in the periodic table

3. Key Terms

Key idea
The central concept from Pure Substances, Mixtures and Classification.

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. 6. Explain the difference between a pure substance and a mixture. In your answer, refer to composition and chemical bonding.

BAND 3 3 MARKS

2. 7. A chemist is given two clear liquids: Sample X has a fixed boiling point of 100°C and cannot be broken down by physical means. Sample Y has a boiling point that changes depending on its concentration. Classify each sample and explain your reasoning.

BAND 4 4 MARKS

3. 8. Evaluate the statement: "All substances that look uniform and clear must be pure substances." Use at least two examples to support your argument.

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Pure Substances, Mixtures and Classification 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 Pure Substances, Mixtures and Classification?

☐ 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 Pure Substances, Mixtures and Classification?

☐ 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 definitions of pure substance, element, compound, and mixture

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: The difference between homogeneous and heterogeneous mixtures

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: How elements are organised in the periodic table

BAND 5 4 MARKS

One thing I still need help with: