CHEMISTRY YEAR 12 - MODULE 5 - LESSON 1

Static vs Dynamic Equilibrium

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

Rust forms on iron and never turns back — but in a sealed bottle of fizzy drink, CO_2 is dissolving and escaping simultaneously at the molecular level, even though the pressure gauge reads the same every second.

- The definition of static and dynamic equilibrium
- Why dynamic equilibrium requires molecular activity in both directions

2. Success Criteria

By the end, you should be able to:

- The definition of static and dynamic equilibrium
- The two conditions required for dynamic equilibrium
- The distinction between open and closed systems

3. Key Terms

Dynamic equilibrium
A state where forward and reverse reaction rates are equal.

Equilibrium constant (Keq)
The ratio of product to reactant concentrations at equilibrium.

Le Chatelier's Principle
A system at equilibrium shifts to minimise applied disturbances.

Reaction quotient (Q)
The ratio of product to reactant concentrations at any instant.

Closed system
A system where neither matter nor energy can escape to surroundings.

Reversible reaction
A reaction that can proceed in both forward and reverse directions.

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 definition of static and dynamic equilibrium". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "The two conditions required for dynamic equilibrium". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Static vs Dynamic Equilibrium: "The distinction between open and closed systems".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Static vs Dynamic Equilibrium 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 Static vs Dynamic Equilibrium?

☐ 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 Static vs Dynamic Equilibrium?

☐ 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 definition of static and dynamic equilibrium

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: The two conditions required for dynamic equilibrium

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: The distinction between open and closed systems

BAND 5 4 MARKS

One thing I still need help with: