CHEMISTRY YEAR 12 - MODULE 6 - LESSON 6

★ Strong/Weak Mastery — Analogies, Models & Common Errors

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

Four students just explained what makes an acid "weak." Only one of them is correct. Before reading on — can you identify who, and precisely what each of the others got wrong?

- The four most common exam errors in Module 6 and their fixes
- Why concentrated weak acid can have lower pH than dilute strong acid

2. Success Criteria

By the end, you should be able to:

- The four most common exam errors in Module 6 and their fixes
- The salt hydrolysis rule: conjugate source determines salt solution pH
- Degree of ionisation as the precise measure of acid/base strength

3. Key Terms

Brønsted-Lowry acid
A proton (H^+) donor in an acid-base reaction.

Brønsted-Lowry base
A proton (H^+) acceptor in an acid-base reaction.

Conjugate acid-base pair
Two species differing by one H^+ that interconvert.

pH
The negative logarithm of hydronium ion concentration.

Buffer
A solution resisting pH change upon addition of small amounts of acid or base.

Titration
A technique to determine concentration by reaction with a standard solution.

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 four most common exam errors in Module 6 and their fixes". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "The salt hydrolysis rule: conjugate source determines salt solution pH". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding ★ Strong/Weak Mastery — Analogies, Models & Common Errors: "Degree of ionisation as the precise measure of acid/base strength".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about ★ Strong/Weak Mastery — Analogies, Models & Common Errors 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 ★ Strong/Weak Mastery — Analogies, Models & Common Errors?

☐ 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 ★ Strong/Weak Mastery — Analogies, Models & Common Errors?

☐ 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 four most common exam errors in Module 6 and their fixes

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: The salt hydrolysis rule: conjugate source determines salt solution pH

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: Degree of ionisation as the precise measure of acid/base strength

BAND 5 4 MARKS

One thing I still need help with: