CHEMISTRY YEAR 12 - MODULE 8 - LESSON 3

Precipitation Reactions & Qualitative Analysis

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

A forensic team finds a white powder at a crime scene. It could be harmless, or it could matter a great deal. Before any advanced instrument is used, chemists can narrow the possibilities quickly by adding simple reagents, watching for precipitates, and interpreting colour and solubility clues with precision.

- How common anions and cations can be identified using precipitation reactions
- Why qualitative analysis is about presence or absence rather than amount

2. Success Criteria

By the end, you should be able to:

- How common anions and cations can be identified using precipitation reactions
- The difference between complete ionic equations and net ionic equations
- The characteristic flame colours for key metal ions

3. Key Terms

Before any advanced instrument
used, chemists can narrow the possibilities quickly by adding simple reagents, watching for precipitates, and interpreti

the white powder
tested in the lab

These tests
qualitative because

Why qualitative analysis
about presence or absence rather than amount

explain why certain reagents
chosen for tests

what
in this sample?" It does not, by itself, answer "how much is there?"

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: "How common anions and cations can be identified using precipitation reactions". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "The difference between complete ionic equations and net ionic equations". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Precipitation Reactions & Qualitative Analysis: "The characteristic flame colours for key metal ions".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Precipitation Reactions & Qualitative Analysis 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 Precipitation Reactions & Qualitative Analysis?

☐ 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 Precipitation Reactions & Qualitative Analysis?

☐ 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: How common anions and cations can be identified using precipitation reactions

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: The difference between complete ionic equations and net ionic equations

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: The characteristic flame colours for key metal ions

BAND 5 4 MARKS

One thing I still need help with: