CHEMISTRY YEAR 11 - MODULE 3 - LESSON 3

Precipitation & Solubility Rules

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

Every time a water treatment plant removes lead or mercury from drinking water, it's using a precipitation reaction — chemistry that turns dissolved poisons into harmless solids that can be filtered out. Clear solution in, clean water out.

- The NAGSAG solubility rules and their exceptions
- Why mixing two clear solutions can produce a solid

2. Success Criteria

By the end, you should be able to:

- The NAGSAG solubility rules and their exceptions
- Common precipitates and their colours
- What spectator ions are

3. Key Terms

Solubility rules (NAGSAG)
The maximum amount of solute that can dissolve in a given amount of solvent at a specific temperature.

Net ionic equation
Explain what a spectator ion is and why it does not appear in the net ionic equation.

Precipitation indicator
A weak acid whose acid and conjugate base forms have different colours, used to signal the endpoint of a titration.

Synthesis reaction
A reaction where two or more reactants combine to form a single product.

Decomposition reaction
A reaction where a single compound breaks down into simpler substances.

Precipitation reaction
A reaction in which an insoluble solid forms when two solutions are mixed.

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 NAGSAG solubility rules and their exceptions". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "Common precipitates and their colours". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Precipitation & Solubility Rules: "What spectator ions are".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Precipitation & Solubility Rules 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 & Solubility Rules?

☐ 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 & Solubility Rules?

☐ 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 NAGSAG solubility rules and their exceptions

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: Common precipitates and their colours

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: What spectator ions are

BAND 5 4 MARKS

One thing I still need help with: