CHEMISTRY YEAR 12 - MODULE 5 - LESSON 16

Solubility Rules & Precipitation Reactions

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

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- The NAGSAG solubility rules framework
- Why the four-ion method reliably predicts precipitation

2. Success Criteria

By the end, you should be able to:

- The NAGSAG solubility rules framework
- The three NESA-specified precipitation reactions
- How to write balanced molecular, complete ionic, and net ionic equations

3. Key Terms

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

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

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

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 NAGSAG solubility rules framework". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "The three NESA-specified precipitation reactions". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Solubility Rules & Precipitation Reactions: "How to write balanced molecular, complete ionic, and net ionic equations".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

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

☐ 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 Solubility Rules & Precipitation Reactions?

☐ 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 framework

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: The three NESA-specified precipitation reactions

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: How to write balanced molecular, complete ionic, and net ionic equations

BAND 5 4 MARKS

One thing I still need help with: