CHEMISTRY YEAR 12 - MODULE 8 - LESSON 10

Water Treatment Processes

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

Water from Warragamba Dam is not automatically safe to drink just because it looks clear. At a Sydney Water treatment plant, chemists use a sequence of physical and chemical steps to remove particles, reduce microbes, control risks from organic matter, and deliver water that stays safe as it moves through the distribution system.

- The main stages of drinking water treatment in NSW facilities
- How alum forms Al(OH) 3 and removes suspended particles

2. Success Criteria

By the end, you should be able to:

- The main stages of drinking water treatment in NSW facilities
- The reagents and processes involved in coagulation and disinfection
- The meaning of DBPs and the basic idea of reverse osmosis desalination

3. Key Terms

HOCl
the more effective disinfecting species

desalination
also part of water supply strategy

Water from Warragamba Dam
not automatically safe to drink just because it looks clear

The sample
cloudy, contains organic matter from the catchment, and may contain microorganisms

Why HOCl
the active chlorinating species and why pH matters

Concentration
amount per unit volume; the same amount of solute can produce different concentrations in different volumes

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 main stages of drinking water treatment in NSW facilities". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "The reagents and processes involved in coagulation and disinfection". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Water Treatment Processes: "The meaning of DBPs and the basic idea of reverse osmosis desalination".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Water Treatment Processes 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 Water Treatment Processes?

☐ 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 Water Treatment Processes?

☐ 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 main stages of drinking water treatment in NSW facilities

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: The reagents and processes involved in coagulation and disinfection

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: The meaning of DBPs and the basic idea of reverse osmosis desalination

BAND 5 4 MARKS

One thing I still need help with: