CHEMISTRY YEAR 12 - MODULE 8 - LESSON 7

Monitoring Dissolved Oxygen & BOD

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

After an algal bloom in the Hawkesbury River, the key question is not just “what grew?” but “how much oxygen is left?” Chemists answer that by measuring dissolved oxygen directly and by asking how much oxygen microbes will consume as they break down the organic load.

- How dissolved oxygen can be measured using a DO meter or Winkler titration
- Why dissolved oxygen is a key ecological water-quality parameter

2. Success Criteria

By the end, you should be able to:

- How dissolved oxygen can be measured using a DO meter or Winkler titration
- The sequence of reactions in the Winkler method
- The meaning and formula for BOD 5

3. Key Terms

DO meter
a convenient field instrument that provides a rapid dissolved oxygen reading

Winkler titration
a classical chemical method that converts the dissolved oxygen in the sample into a titre value through a chain of redox

river sample
taken after a bloom

and dead fish
reported downstream

value suggest about what
happening in that river?

Why dissolved oxygen
a key ecological water-quality parameter

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 dissolved oxygen can be measured using a DO meter or Winkler titration". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "The sequence of reactions in the Winkler method". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Monitoring Dissolved Oxygen & BOD: "The meaning and formula for BOD 5".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Monitoring Dissolved Oxygen & BOD 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 Monitoring Dissolved Oxygen & BOD?

☐ 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 Monitoring Dissolved Oxygen & BOD?

☐ 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 dissolved oxygen can be measured using a DO meter or Winkler titration

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: The sequence of reactions in the Winkler method

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: The meaning and formula for BOD 5

BAND 5 4 MARKS

One thing I still need help with: