BIOLOGY YEAR 11 - MODULE 4 - LESSON 12

Abiotic and Biotic Factors Synthesis — Predicting Distribution

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

In 2019, fish kills swept through the Murray-Darling River system. Over a million dead fish floated to the surface near Menindee. The immediate cause was a blue-green algal bloom that deoxygenated the water. But the underlying causes were hotter temperatures, reduced flows, and rising salinity — abiotic changes that cascaded through the food web. This lesson integrates everything you have learned in IQ2 to predict how multiple factors together determine where organisms live, thrive, and die.

- Key facts and terms for Abiotic and Biotic Factors Synthesis — Predicting Distribution
- How the main ideas in Abiotic and Biotic Factors Synthesis — Predicting Distribution connect

2. Success Criteria

By the end, you should be able to:

- Key facts and terms for Abiotic and Biotic Factors Synthesis — Predicting Distribution
- Where this lesson fits in Module 4
- How the main ideas in Abiotic and Biotic Factors Synthesis — Predicting Distribution connect

3. Key Terms

Key idea
The central concept from Abiotic and Biotic Factors Synthesis — Predicting Distribution.

Evidence
Information, observations or calculations used to support an answer.

Explain
Give a reasoned answer that links cause and effect.

Apply
Use a learned idea in a new example, problem or scenario.

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. Q1. The Murray-Darling River system is predicted to warm by 3°C and experience increased salt levels over the next 50 years. Predict which native species would be most at risk of local extinction and which introduced species might thrive. Justify your prediction using at least three factors from IQ2.

BAND 3 3 MARKS

2. Q2. Many students believe that carrying capacity is a fixed number for any given ecosystem. Explain why this belief is incorrect, using a real example to support your answer.

BAND 4 3 MARKS

3. Q1. The Murray-Darling River system is predicted to warm by 3°C and experience increased salt levels over the next 50 years. Predict which native species would be most at risk of local extinction and which introduced species might thrive. Justify your prediction using at least three factors from IQ2.

BAND 5 3 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Abiotic and Biotic Factors Synthesis — Predicting Distribution 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 Abiotic and Biotic Factors Synthesis — Predicting Distribution?

☐ 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 Abiotic and Biotic Factors Synthesis — Predicting Distribution?

☐ 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: Key facts and terms for Abiotic and Biotic Factors Synthesis — Predicting Distribution

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: Where this lesson fits in Module 4

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: How the main ideas in Abiotic and Biotic Factors Synthesis — Predicting Distribution connect

BAND 5 4 MARKS

One thing I still need help with: