BIOLOGY YEAR 11 - MODULE 4 - LESSON 5

Ecological Pyramids — Numbers, Biomass and Energy

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

Walk through Australian bushland and you will see thousands of native bees for every lace monitor. Why? The answer lies in ecological pyramids — graphical models that reveal the hidden structure of ecosystems. This consolidation lesson brings together food chains, trophic efficiency and energy flow to explain the relative abundance of organisms at every level.

- Key facts and terms for Ecological Pyramids — Numbers, Biomass and Energy
- How the main ideas in Ecological Pyramids — Numbers, Biomass and Energy connect

2. Success Criteria

By the end, you should be able to:

- Key facts and terms for Ecological Pyramids — Numbers, Biomass and Energy
- Where this lesson fits in Module 4
- How the main ideas in Ecological Pyramids — Numbers, Biomass and Energy connect

3. Key Terms

Key idea
The central concept from Ecological Pyramids — Numbers, Biomass and Energy.

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. A student examines a single eucalyptus tree in the Australian bush and counts 2,000 leaf-eating beetles, 200 spiders that eat the beetles, and 20 kookaburras that eat the spiders. Sketch the rough shape of the pyramid of numbers for this food chain. Is it upright or inverted? Explain your reasoning.

BAND 3 3 MARKS

2. Q2. In the open ocean, the total mass of zooplankton (tiny drifting animals) at any moment can exceed the total mass of phytoplankton (microscopic drifting plants). A student concludes from this that energy must flow from zooplankton to phytoplankton. Is this conclusion valid? What else could explain the observation?

BAND 4 3 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Ecological Pyramids — Numbers, Biomass and Energy 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 Ecological Pyramids — Numbers, Biomass and Energy?

☐ 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 Ecological Pyramids — Numbers, Biomass and Energy?

☐ 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 Ecological Pyramids — Numbers, Biomass and Energy

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 Ecological Pyramids — Numbers, Biomass and Energy connect

BAND 5 4 MARKS

One thing I still need help with: