BIOLOGY YEAR 11 - MODULE 4 - LESSON 7

Population Growth — Exponential, Logistic and Carrying Capacity

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 1859, Thomas Austin released 24 European rabbits onto his Victorian property for sport hunting. Within 70 years, their descendants numbered over 600 million and had spread across two-thirds of Australia. How does a population explode from 24 to 600 million — and why does every population eventually stop growing?

- Key facts and terms for Population Growth — Exponential, Logistic and Carrying Capacity
- How the main ideas in Population Growth — Exponential, Logistic and Carrying Capacity connect

2. Success Criteria

By the end, you should be able to:

- Key facts and terms for Population Growth — Exponential, Logistic and Carrying Capacity
- Where this lesson fits in Module 4
- How the main ideas in Population Growth — Exponential, Logistic and Carrying Capacity connect

3. Key Terms

Key idea
The central concept from Population Growth — Exponential, Logistic and Carrying Capacity.

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. Starting with 24 rabbits, assume each breeding pair produces 4 surviving offspring per year and rabbits begin breeding at age 1. Without any predation, disease or food shortage, roughly how many rabbits would there be after 10 years? Show your rough calculation.

BAND 3 3 MARKS

2. Q2. The actual rabbit population in Australia peaked around 600 million and then stabilised, rather than growing forever. What factors do you think stopped the growth? List at least three.

BAND 4 3 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Population Growth — Exponential, Logistic and Carrying Capacity 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 Population Growth — Exponential, Logistic and Carrying Capacity?

☐ 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 Population Growth — Exponential, Logistic and Carrying Capacity?

☐ 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 Population Growth — Exponential, Logistic and Carrying Capacity

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 Population Growth — Exponential, Logistic and Carrying Capacity connect

BAND 5 4 MARKS

One thing I still need help with: