BIOLOGY YEAR 12 - MODULE 6 - LESSON 12

Biotechnology Synthesis - Evaluating Benefit, Risk and Biodiversity

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

This lesson closes IQ2 by pulling the biotechnology strand together. The main skill is no longer defining individual terms. It is building a balanced judgement that weighs benefit, risk, biodiversity impact, stakeholder consequences and evidence quality across more than one case.

- Strong biotechnology judgements include benefit, risk, biodiversity and stakeholder dimensions.
- Biotechnology can be beneficial overall in one context and problematic in another.

2. Success Criteria

By the end, you should be able to:

- Strong biotechnology judgements include benefit, risk, biodiversity and stakeholder dimensions.
- Different case studies can point in different directions.
- Absolute answers are usually weaker than conditional ones.

3. Key Terms

Synthesis
Combining multiple ideas and examples into one coherent judgement.

Evidence-based evaluation
A judgement supported by relevant examples, conditions and limitations rather than absolute claims.

Trade-off
A situation where a benefit is associated with a cost, risk or competing consequence.

Stakeholder impact
How different groups are affected differently by the same biotechnology.

Biodiversity effect
The effect of a biotechnology on genetic, species or ecosystem diversity.

Qualified judgement
A conclusion using conditional language such as “to a large extent”, “in some contexts” or “provided that”.

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: "Strong biotechnology judgements include benefit, risk, biodiversity and stakeholder dimensions.". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "Different case studies can point in different directions.". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Biotechnology Synthesis - Evaluating Benefit, Risk and Biodiversity: "Absolute answers are usually weaker than conditional ones.".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Biotechnology Synthesis - Evaluating Benefit, Risk and Biodiversity 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 Biotechnology Synthesis - Evaluating Benefit, Risk and Biodiversity?

☐ 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 Biotechnology Synthesis - Evaluating Benefit, Risk and Biodiversity?

☐ 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: Strong biotechnology judgements include benefit, risk, biodiversity and stakeholder dimensions.

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: Different case studies can point in different directions.

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: Absolute answers are usually weaker than conditional ones.

BAND 5 4 MARKS

One thing I still need help with: