BIOLOGY YEAR 12 - MODULE 5 - LESSON 16

Frequency Data and SNP Analysis

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

Population data can show trends in inherited characteristics, but interpretation must stay cautious. Single nucleotide polymorphisms, or SNPs, are useful genetic markers, yet one marker alone does not prove complete relatedness or complete difference.

- How to read population trait frequency tables.
- Why trends in data are not the same as absolute claims.

2. Success Criteria

By the end, you should be able to:

- How to read population trait frequency tables.
- What SNPs are and why they are useful markers.
- Why trends in data are not the same as absolute claims.

3. Key Terms

Frequency data
Data showing how common a characteristic or allele is within a sample or population.

Trend
A general pattern visible in the data rather than a claim about every individual.

Sample size
The number of individuals measured in a study.

Bias
A systematic problem in data collection that makes the sample unrepresentative.

SNP
Single nucleotide polymorphism, a one-base difference at a specific DNA position.

Marker
A DNA feature used to compare individuals, populations or species.

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 to read population trait frequency tables.". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "What SNPs are and why they are useful markers.". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Frequency Data and SNP Analysis: "Why trends in data are not the same as absolute claims.".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Frequency Data and SNP Analysis 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 Frequency Data and SNP Analysis?

☐ 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 Frequency Data and SNP Analysis?

☐ 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 to read population trait frequency tables.

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: What SNPs are and why they are useful markers.

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: Why trends in data are not the same as absolute claims.

BAND 5 4 MARKS

One thing I still need help with: