BIOLOGY YEAR 12 - MODULE 5 - LESSON 14

Mendelian Patterns - Autosomal Inheritance, Sex Linkage, Punnett Squares

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

Inheritance questions are about probability, not certainty. Punnett squares and pedigrees let us model likely genotype combinations, then interpret whether a trait is autosomal, recessive, dominant or X-linked.

- How to model monohybrid crosses using Punnett squares.
- That dominant does not mean common, stronger or better.

2. Success Criteria

By the end, you should be able to:

- How to model monohybrid crosses using Punnett squares.
- Key features of autosomal dominant, autosomal recessive and X-linked inheritance.
- That dominant does not mean common, stronger or better.

3. Key Terms

Genotype
The allele combination an organism has for a gene.

Phenotype
The observable trait produced by genotype interacting with environment.

Autosomal
A gene located on a non-sex chromosome.

Dominant
An allele expressed in the phenotype when present in a heterozygous genotype.

Recessive
An allele expressed phenotypically only when no dominant allele is present.

Sex-linked
A trait controlled by a gene on a sex chromosome, usually the X chromosome at HSC level.

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 model monohybrid crosses using Punnett squares.". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "Key features of autosomal dominant, autosomal recessive and X-linked inheritance.". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Mendelian Patterns - Autosomal Inheritance, Sex Linkage, Punnett Squares: "That dominant does not mean common, stronger or better.".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Mendelian Patterns - Autosomal Inheritance, Sex Linkage, Punnett Squares 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 Mendelian Patterns - Autosomal Inheritance, Sex Linkage, Punnett Squares?

- [ ] 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 Mendelian Patterns - Autosomal Inheritance, Sex Linkage, Punnett Squares?

- [ ] 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 model monohybrid crosses using Punnett squares.

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: Key features of autosomal dominant, autosomal recessive and X-linked inheritance.

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: That dominant does not mean common, stronger or better.

BAND 5 4 MARKS

One thing I still need help with: