BIOLOGY YEAR 12 - MODULE 5 - LESSON 8

Meiosis - Reduction Division and Continuity Across Generations

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

If fertilisation joins two gametes together, chromosome number would double every generation unless gametes were made differently from ordinary body cells. Meiosis solves that problem by halving chromosome number before fertilisation restores it.

- The difference between diploid and haploid cells.
- Why meiosis is essential for chromosome-number stability across generations.

2. Success Criteria

By the end, you should be able to:

- The difference between diploid and haploid cells.
- The broad sequence of meiosis I and meiosis II.
- That meiosis halves chromosome number.

3. Key Terms

Meiosis
Cell division that halves chromosome number to produce haploid gametes for sexual reproduction.

Homologous chromosomes
A matching pair of chromosomes carrying the same genes in the same positions, one inherited from each parent.

Diploid
Having two sets of chromosomes, one from each parent.

Haploid
Having one set of chromosomes.

Crossing over
Exchange of corresponding chromosome segments between homologous chromosomes during meiosis.

Independent assortment
Random orientation of homologous chromosome pairs during meiosis, producing different chromosome combinations in gametes.

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: "The difference between diploid and haploid cells.". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "The broad sequence of meiosis I and meiosis II.". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Meiosis - Reduction Division and Continuity Across Generations: "That meiosis halves chromosome number.".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Meiosis - Reduction Division and Continuity Across Generations 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 Meiosis - Reduction Division and Continuity Across Generations?

☐ 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 Meiosis - Reduction Division and Continuity Across Generations?

☐ 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: The difference between diploid and haploid cells.

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: The broad sequence of meiosis I and meiosis II.

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: That meiosis halves chromosome number.

BAND 5 4 MARKS

One thing I still need help with: