BIOLOGY YEAR 12 - MODULE 5 - LESSON 10

Transcription - From DNA to mRNA

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

Genes stay in DNA, but the instructions for building a protein need a portable copy. Transcription produces mRNA from a DNA template strand so coded information can move on to the next stage of polypeptide synthesis.

- A gene is a DNA sequence that codes for a product.
- Why mRNA is needed as a temporary copy rather than moving DNA itself.

2. Success Criteria

By the end, you should be able to:

- A gene is a DNA sequence that codes for a product.
- Transcription forms mRNA from a DNA template strand.
- Why mRNA is needed as a temporary copy rather than moving DNA itself.

3. Key Terms

Gene
A section of DNA that contains coded information for a product, usually a polypeptide.

Transcription
The process of producing an mRNA copy from a DNA template strand.

mRNA
Messenger RNA, a temporary RNA copy that carries coded information from DNA.

Template strand
The DNA strand used to determine the complementary mRNA sequence.

Codon
A three-base sequence on mRNA that carries transferable coded information.

Uracil
The RNA base that pairs with adenine instead of thymine.

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: "A gene is a DNA sequence that codes for a product.". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "Transcription forms mRNA from a DNA template strand.". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Transcription - From DNA to mRNA: "Why mRNA is needed as a temporary copy rather than moving DNA itself.".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Transcription - From DNA to mRNA 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 Transcription - From DNA to mRNA?

- [ ] 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 Transcription - From DNA to mRNA?

- [ ] 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: A gene is a DNA sequence that codes for a product.

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: Transcription forms mRNA from a DNA template strand.

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: Why mRNA is needed as a temporary copy rather than moving DNA itself.

BAND 5 4 MARKS

One thing I still need help with: