

# Current Genetic Technologies That Induce Genetic Change

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

IQ3 begins with a survey lesson. The goal is not to memorise a random list of technologies. It is to understand what each technology changes, where it acts, why it is used, and how technologies that manipulate reproduction differ from technologies that directly manipulate DNA.

- Current technologies include reproductive technologies, cloning and recombinant DNA methods.
- Technology categories need to be distinguished clearly for HSC responses.

## 2. Success Criteria

By the end, you should be able to:

- Current technologies include reproductive technologies, cloning and recombinant DNA methods.
- These technologies do not all work at the same biological level.
- Some redirect which alleles combine, while others alter DNA directly.

## 3. Key Terms

### Genetic technology

A technology used to analyse, manipulate or direct inheritance and genetic change.

### Reproductive technology

A technology that controls how gametes or reproductive material are brought together.

### Cloning

Producing a genetically identical copy of DNA, a cell or sometimes a whole organism.

### Recombinant DNA

DNA formed by combining genetic material from different sources.

### Transgenic organism

An organism that contains inserted DNA originating from another species or external source.

### Induce genetic change

To intentionally produce or direct a genetic outcome rather than waiting for change by chance alone.

## 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: "Current technologies include reproductive technologies, cloning and recombinant DNA methods.". Use one specific example from the lesson.

**BAND 3** **2 MARKS**

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2. Apply this idea to a new example: "These technologies do not all work at the same biological level.". Show your reasoning clearly.

**BAND 4** **3 MARKS**

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3. Analyse why this idea matters for understanding Current Genetic Technologies That Induce Genetic Change: "Some redirect which alleles combine, while others alter DNA directly.".

**BAND 5** **4 MARKS**

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## 6. Extend: Apply the Idea

BAND 5/6

5 MARKS

**A student gives a memorised answer about Current Genetic Technologies That Induce Genetic Change 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.

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## 7. Multiple Choice

1. What is the best first step when answering a question about Current Genetic Technologies That Induce Genetic Change?

- 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 Current Genetic Technologies That Induce Genetic Change?

- 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: Current technologies include reproductive technologies, cloning and recombinant DNA methods.**

**BAND 3** **2 MARKS**

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### SUCCESS CRITERION 2

**Prove that you can: These technologies do not all work at the same biological level.**

**BAND 4** **3 MARKS**

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### SUCCESS CRITERION 3

**Prove that you can: Some redirect which alleles combine, while others alter DNA directly.**

**BAND 5** **4 MARKS**

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**One thing I still need help with:**

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