

Microbial Testing

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

In remote Australian communities, tap water that looks clear can carry E. coli. Regular microbial testing of water and food is the only reliable way to detect contamination before people get sick — and the method used in a school lab is the same one used by public health authorities.

- The purpose of microbial testing of water and food
- Why serial dilution is necessary before plating

2. Success Criteria

By the end, you should be able to:

- The purpose of microbial testing of water and food
- The standard method: serial dilution, plating, colony counting
- Key variables: independent, dependent, controlled

3. Key Terms

water and food

the only reliable way to detect contamination before people get sick — and the method used in a school lab is the same o

Why serial dilution

necessary before plating

Why colony counts

estimates, not exact counts

Contaminated water and food

among the leading causes of infectious disease globally

microbial contamination

invisible — water containing dangerous levels of E

way to detect it

through microbial testing

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 purpose of microbial testing of water and food". Use one specific example from the lesson.

BAND 3 **2 MARKS**

2. Apply this idea to a new example: "The standard method: serial dilution, plating, colony counting". Show your reasoning clearly.

BAND 4 **3 MARKS**

3. Analyse why this idea matters for understanding Microbial Testing: "Key variables: independent, dependent, controlled".

BAND 5 **4 MARKS**

6. Extend: Apply the Idea

BAND 5/6

5 MARKS

A student gives a memorised answer about Microbial Testing 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 Microbial Testing?

- 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 Microbial Testing?

- 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 purpose of microbial testing of water and food

BAND 3 **2 MARKS**

SUCCESS CRITERION 2

Prove that you can: The standard method: serial dilution, plating, colony counting

BAND 4 **3 MARKS**

SUCCESS CRITERION 3

Prove that you can: Key variables: independent, dependent, controlled

BAND 5 **4 MARKS**

One thing I still need help with:
