Combined Transformations

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 a video game, every character on screen is just a basic image that has been stretched, flipped, rotated, and moved into position. Game developers do not redraw the character for every frame — they apply combined transformations. In this lesson, you will learn to do the same thing with functions: stack multiple transformations together and read the result like a pro.

- How to combine translations, reflections, and dilations in one equation
- Why the order of reading transformations matters

2. Success Criteria

By the end, you should be able to:

- How to combine translations, reflections, and dilations in one equation
- The standard form $y = af(b(x - h)) + k$
- How each parameter affects the graph

3. Key Terms

Function
A relation where each input has exactly one output.

Domain
The set of all possible input values for a function.

Range
The set of all possible output values for a function.

Inverse Function
A function that reverses the effect of the original function.

Quadratic
A polynomial of degree 2, in the form $ax^2 + bx + c$.

Discriminant
The expression $b^2 - 4ac$ that determines the nature of quadratic roots.

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 combine translations, reflections, and dilations in one equation". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "The standard form $y = af(b(x - h)) + k$". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Combined Transformations: "How each parameter affects the graph".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Combined Transformations 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 Combined Transformations?

☐ 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 Combined Transformations?

☐ 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 combine translations, reflections, and dilations in one equation

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: The standard form $y = af(b(x - h)) + k$

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: How each parameter affects the graph

BAND 5 4 MARKS

One thing I still need help with: