

Combining transformations

WHAT THIS LESSON TEACHES

A slide moves a shape without turning it, a flip mirrors it across a line, and a turn rotates it around a point. The size and shape never change.

→ Slide a triangle 3 squares right then flip it across the y-axis.

→ Flip a triangle across the y-axis then slide the flipped triangle 3 squares down.

MODEL THIS ON THE BOARD

TWO-STEP TRANSFORMATION ON A GRID

- 1 Start with triangle vertices A at (2,4), B at (4,4), C at (3,6).
- 2 Apply a flip across the y-axis: A moves to (-2,4), B to (-4,4), C to (-3,6).
- 3 Then slide 3 squares down: A ends at (-2,1), B at (-4,1), C at (-3,3).

ANSWER KEY

b) A(-1,5) B(-5,5) C(-3,8)

c) A(-1,2) B(-5,2) C(-3,5)

Q1: (-4, 3)

Q2: (none)

Q3: (none)

Q4: (7, -1)

Q5: Yes, same position (order does not matter)

a) **Never** — The order of a slide and flip usually changes the final position.

b) **Always** — Slides commute so order does not matter.

c) **Always** — All transformations in this lesson preserve size and shape.

d) **Always** — Order of turn and flip often matters.