

Reflection in the axes and lines of symmetry

WHAT THIS LESSON TEACHES

A reflection flips a shape across a mirror line so the image faces the opposite way but stays the same size.

→ A triangle at (1, 2) reflected in the y-axis becomes (-1, 2).

→ A point (3, 4) reflected in the x-axis becomes (3, -4).

MODEL THIS ON THE BOARD

REFLECT A GAME TOKEN IN THE Y-AXIS

- 1 Start with the point (3, 2) on the right of the y-axis.
- 2 The y-axis is the mirror line so the x-number changes sign.
- 3 The image point is at (-3, 2).

ANSWER KEY

Scaffold: visual check on the page

Q1: (-1, 2)

Q2: (-6, 7)

Q3: (8, -9)

Q4: (7, -8)

Q5: (-1, -2)

a) Always — The y-coordinate stays the same as the mirror is vertical.

b) Always — Reflection is a rigid transformation that keeps size and shape.

c) Never — The x-axis mirror changes only the y sign so the image is (4, -3).

d) Always — The flip reverses the direction the shape faces.

EXTENSION SHEET · STRETCH ANSWERS

S1: 10 lines

S2: 0 lines

S3: 0 lines

S4: 1 line

S5: 6 lines