Lesson 85 MIXED

Translating shapes on the co-ordinate plane

WHAT THIS LESSON TEACHES

A translation slides every point of a shape the same distance in the same direction. The shape never turns or flips.

→ Sliding a triangle 4 squares right and 2 squares down.
→ A triangle at (2,2), (4,2), (3,5) slid 3 right becomes an image at (5,2), (7,2), (6,5).

MODEL THIS ON THE BOARD

TRANSLATING A TRIANGLE ON THE GRID

1. Start with vertices at (1,1), (3,1) and (2,4).
2. Add 3 to each x-coordinate for a slide 3 right.
3. Subtract 2 from each y-coordinate for a slide 2 down.
4. The image vertices are now at (4,-1), (6,-1) and (5,2).

ANSWER KEY

Scaffold: visual check on the page

Q1: (8,2), (10,2), (9,5)

Q2: (7,2), (9,2), (8,5)

Q3: (3,6), (5,6), (4,9)

Q4: (2,5), (4,5), (3,8)

Q5: (5,-3), (7,-3), (6,0)

a) Always — This is the definition of translation.

b) Always — Translation never turns or flips the shape.

c) Always — Opposite translations cancel exactly.

d) Never — Side lengths stay exactly the same.

EXTENSION SHEET · STRETCH ANSWERS

S1: reflection

S2: reflection

S3: reflection

S4: reflection

S5: rotation