

Transformations

8th Grade

Four ways to move a shape, and which ones preserve congruence.

A transformation maps every point of a shape to a new position.

Transformation	Plain word	Rule
Translation	slide	$(x, y) \rightarrow (x+a, y+b)$
Reflection over x-axis	flip	$(x, y) \rightarrow (x, -y)$
Reflection over y-axis	flip	$(x, y) \rightarrow (-x, y)$
Rotation 90° about origin	turn	$(x, y) \rightarrow (-y, x)$
Rotation 180°	turn	$(x, y) \rightarrow (-x, -y)$
Dilation	resize	$(x, y) \rightarrow (kx, ky)$

Translations, reflections and rotations preserve congruence. Dilations produce similar figures instead.