

# Translations in the Coordinate Plane

The contents of this content module were developed by special educator Bethany Smith, PhD and validated by content expert Drew Polly, PhD at University of North Carolina at Charlotte under a grant from the Department of Education (PR/Award #: H373X100002, Project Officer, [Susan.Weigert@Ed.gov](mailto:Susan.Weigert@Ed.gov)). However, the contents do not necessarily represent the policy of the Department of Education and no assumption of endorsement by the Federal government should be made

# What is a translation?

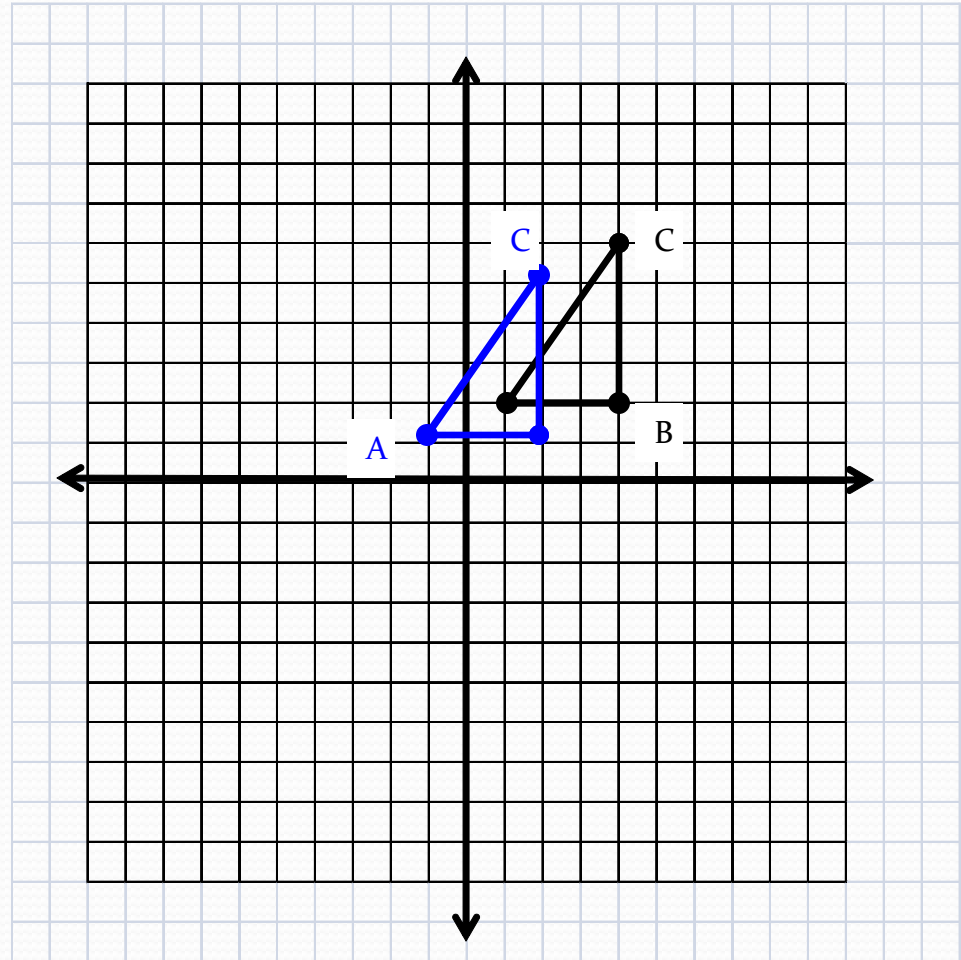
- A translation occurs when a figure slides along a line without turning
- The line a figure slides along **MUST** be a straight line

# Working through an example

Translate each vertex 2 units left and 1 unit down

Original coordinates  $A(1,2)$ ,  $B(4,2)$ , and  $C(4,6)$

Once translated, the new coordinates are  $(-1,1)$ ,  $(2,1)$ , and  $(2,5)$



# Ideas for application

- Have students spread out and give them directions that cause them to translate their body (e.g., Slide one step to the right)
- Using construction and tissue paper, make a mock quilt using reflections, rotations, and transformation of different shapes (have a different quilts for different polygons)
- Use photo program and have students orient the pictures correctly

# Making Connections

- Exploring translations in the coordinate plane address the following 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade Core Content Connectors
  - 6.GM.1c4 Locate points on a graph
  - 6.GM.1c5 Use order pairs to graph given points
  - 6.GM.1c6 Find coordinate values of points in the context of a situation
  - 6.GM.1c7 Use coordinate points to draw polygons
  - 6.NO.1d5 find given points between -10 and 10 on both axis of a coordinate plane
  - 6.NO.1d6 Label points between -10 and 10 on both axis of coordinate plane
  - 7.GM.1e1 Construct or draw plane figures using properties
  - 8.GM.1f1 Recognize a rotation, reflection, or translation of a figure
  - 8.GM.1f2 Identify a rotation, reflection, or translation of a plane figure when given coordinates