

# Reflections 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 reflection?

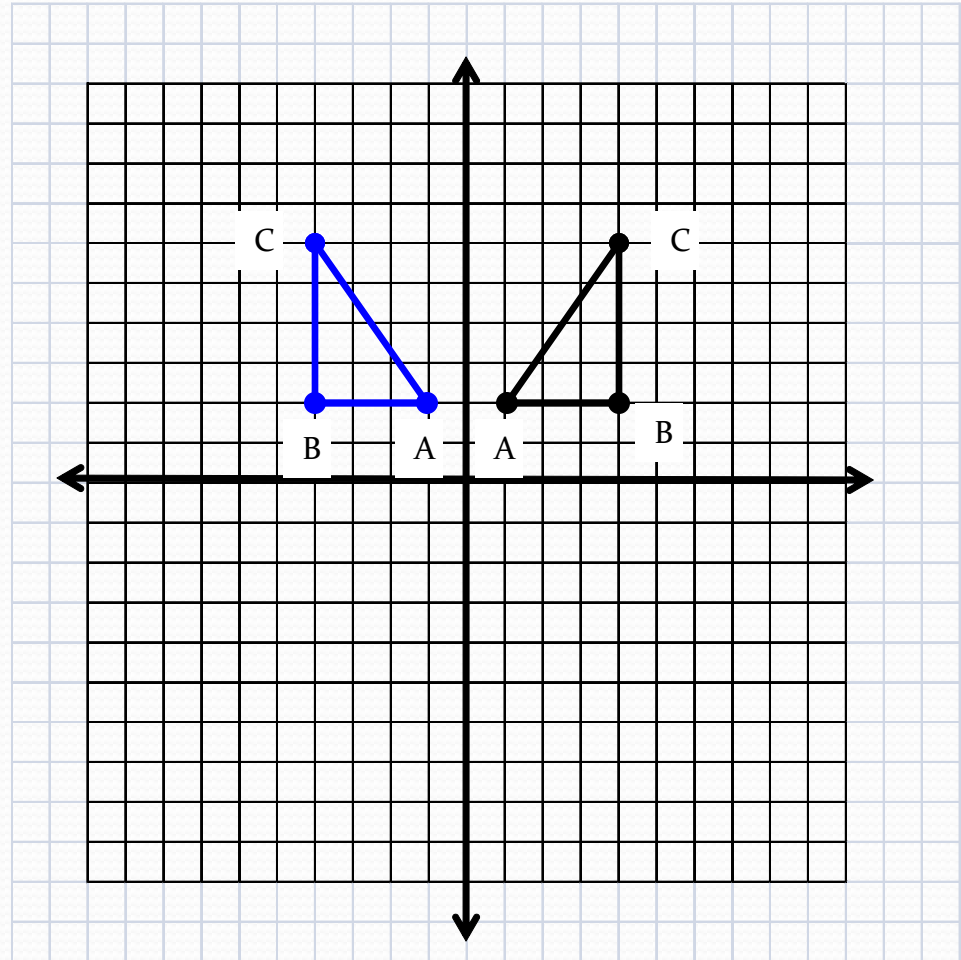
- A reflection occurs when a shape is flipped over a line to create a mirror image
- Typically figures are reflected across the x or y axis,
  - If a figure is reflected across the x axis, only the y-coordinates change
  - If a figure is reflected across the y axis, only the x-coordinates change

# Working through an example

Reflect the triangle across the  
y-axis

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

Once reflected across y-axis,  
new coordinates are  $A(-1,2)$ ,  
 $B(-4,2)$ , and  $C(-4,6)$



# Ideas for application

- Have students trace the reflection of objects in a mirror with a dry erase marker
- Have students look for letters or words in that look the same when reflected in a mirror (e.g., MOM or TOOT)

# Making Connections

- Exploring reflections 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