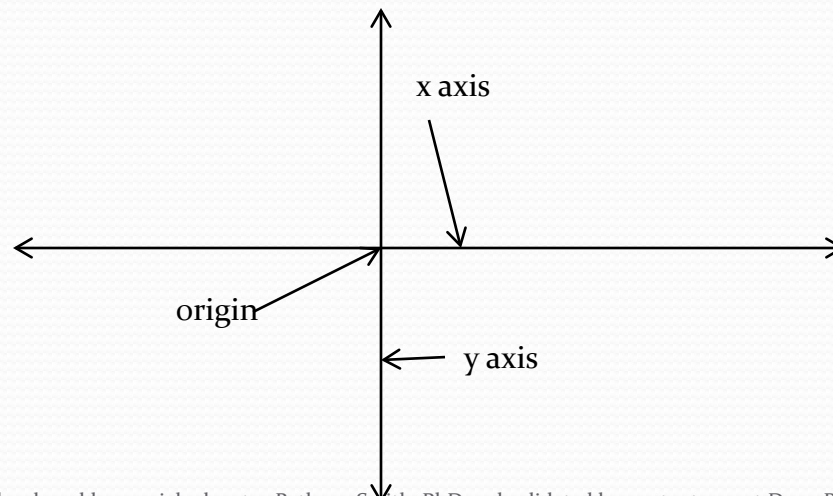


Graphing in the Coordinate Plane

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). 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 the coordinate plane

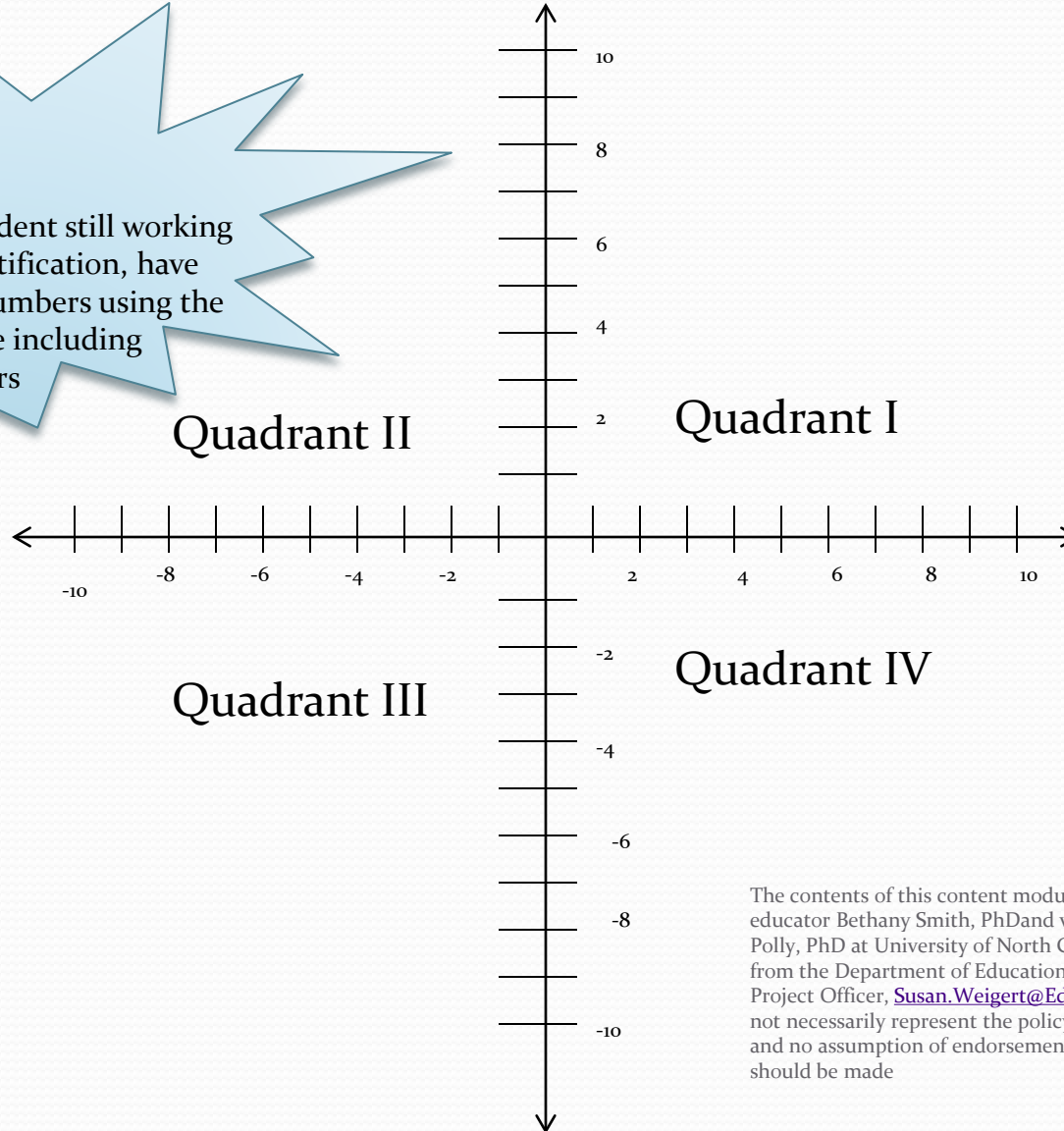
- The coordinate plane is formed when two number lines intersect at zero
- The point where they intersect is called the origin



Quadrants within the coordinate plane

Helpful Hints:

If you have a student still working on number identification, have them identify numbers using the coordinate plane including negative numbers

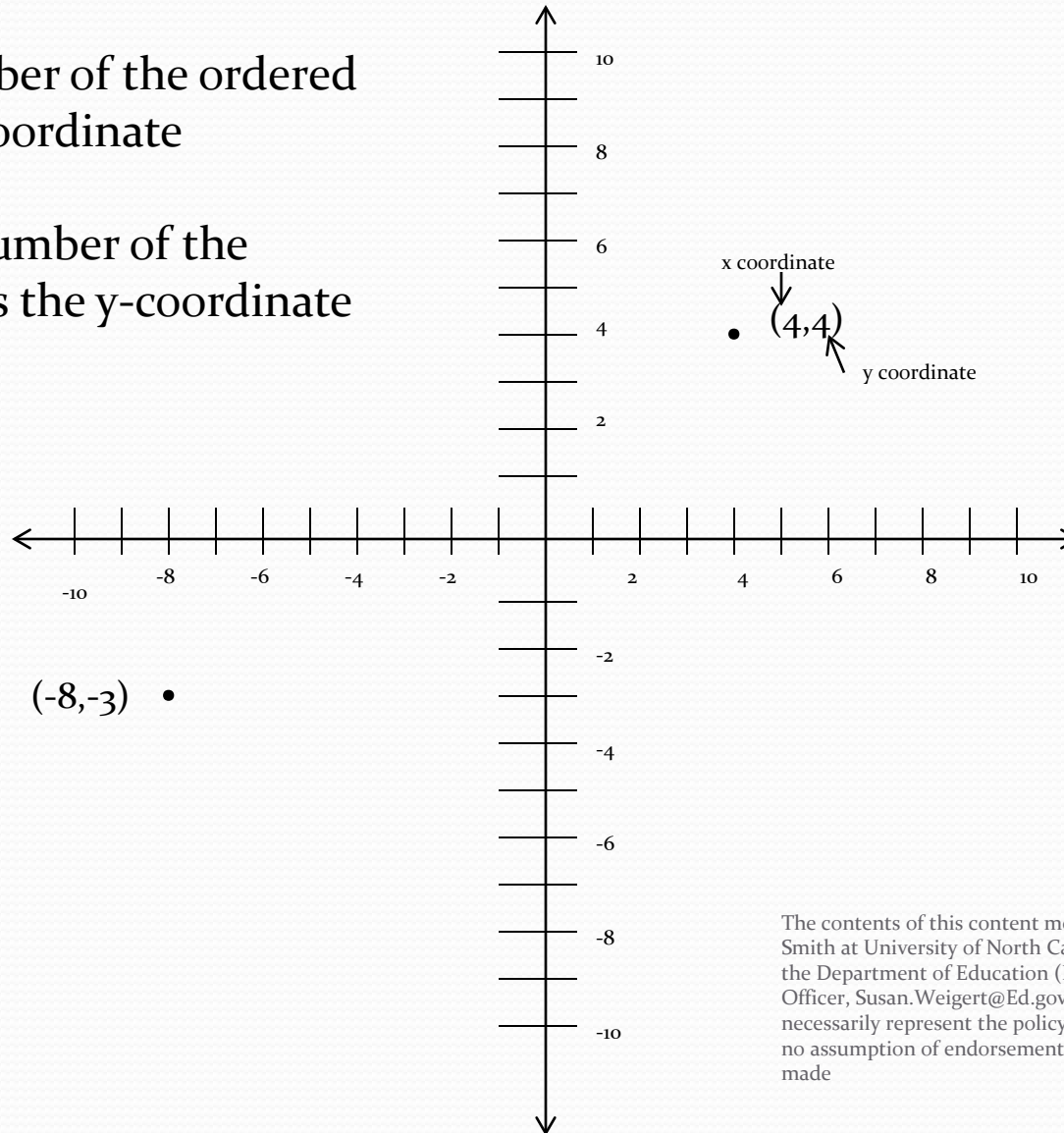


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Graphing ordered pairs

The first number of the ordered pair is the x-coordinate

The second number of the ordered pair is the y-coordinate

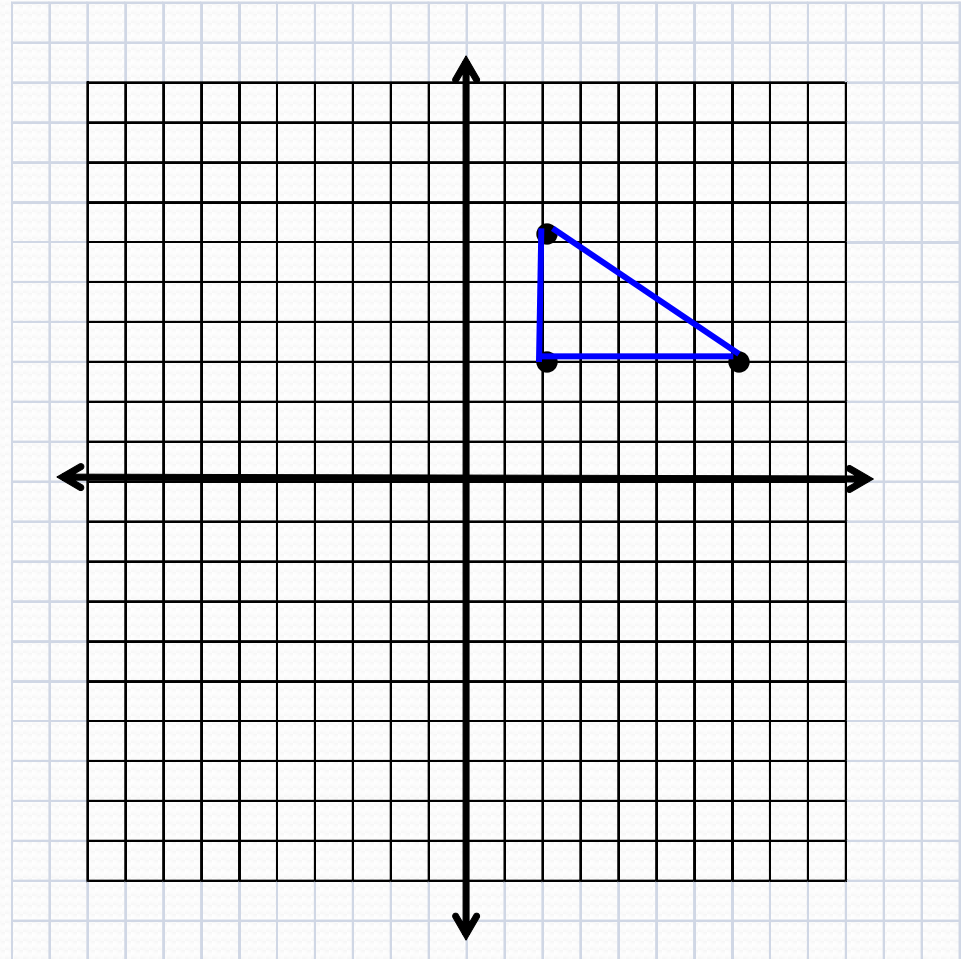


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Graphing polygons in the coordinate plane

To graph a triangle:

1. Provide students with 3 ordered pairs
Ex: (2, 6) (2,3) (7,3)
2. Plot all three points
3. Connect the points using line segments



Ideas for application

- If your classroom has floor tiles, use tape to make the x and y axis creating your own coordinate plane on the floor. Then ask students to find ordered pairs using their own body as the point
- Allow students to play the game “Battleship” with a peer. The game requires students to try and hit an opponents ship by calling out coordinates similar to ordered pairs.

Ideas for increasing the difficulty

- Provide students two ordered pairs and require students to graph those coordinates on the coordinate plane
- Provide or tell the student what kind of polygon you want and require the student to identify another point that would complete the polygon
 - For example, point A (2,6,) and point B (2,3). To make a triangle, what could be the coordinates for point C?

Making connections

- Graphing figures on the coordinate plane addressed the following 5th and 6th grade Core Content Connectors
 - 5.GM.1c1 Locate the x and y axis on a graph
 - 5.GM.1c2 Locate points on a graph
 - 5.GM.1c3 Use ordered pairs to graph given points
 - 6.GM.c4 Locate points on a graph
 - 6.GM.1c5 Use ordered 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