

Core Content

Cluster Title: Apply and extend previous understandings of numbers to the system of rational numbers.

Standard:8. Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

MASTERY Patterns of Reasoning:

Conceptual:

Understand that a line segment from one coordinate pair to another represents a distance.

Understand that if two coordinates have the same x or y value they are on the same line.

Understand that the distance from a point on a coordinate plane to an axis is an absolute value.

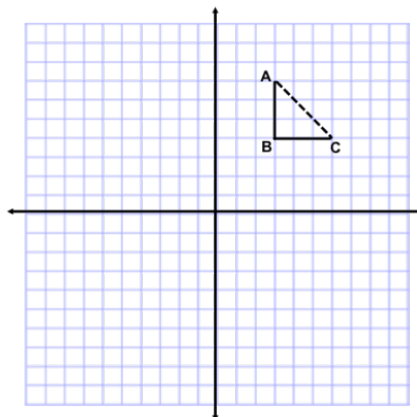
Understand that the units on a coordinate plane define the unit of distance measure.

Understand that the coordinate plane can be used to represent real world contexts (e.g. streets)

Procedural:

Find the distance between two points.

Find the length BA and BC.



Representational:

Plot points with the same first or second coordinate in all four quadrants of the Cartesian Coordinate Plane.

Supports for Teachers

Critical Background Knowledge	
Conceptual: Understand that absolute value refers to a number's distance from zero Understand that it takes two rational numbers to create a point on a coordinate plane. Procedural: Be able to use a coordinate plane to solve a real world and mathematical problems. Representational: Graph on a coordinate plane	
Academic Vocabulary	
Coordinate plane, Absolute value, Coordinate, Point	
Instructional Strategies Used	Resources Used
Make a coordinate grid on the floor and have students stand on points then find the distance between students. Make sure that the two points have either the same first coordinate or the same second coordinate. Have the students figure out that when you are on the same x or the same y you are on the same line.	
Assessment Tasks Used	
Skill-based Task What is the distance between $(-8, 7)$ and $(-8, -2)$?	Problem Task Bills house is at $(-4, 6)$, the library is at $(-4, -2)$ and the Bakery is at $(3, -2)$. What is the distance between Bill's house and the library? The library and the bakery? Show two different methods to find the difference.