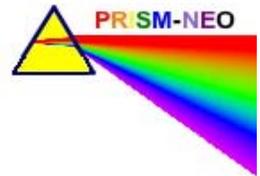


Coordinates

<---Sketch Title



Sketch Filename:

Movie Filename:

Math Concept(s)

Suggested Grades

7
 8
 9 Applied

Sketchpad Level

Easy
- drag points and click buttons

*Beginner
Intermediate
Experienced*

Learning Goals:

- to practice naming coordinates

“Sketchy” Description:

A map is used as a context for naming coordinates of points in the Cartesian plane. Four sketches are presented in an increasing level of difficulty:

- 1) naming whole number coordinates
- 2) naming positive rational number coordinates i.e. points in Quadrant 1
- 3) naming integer coordinates
- 4) naming rational number coordinates i.e. points in all four quadrants

Lesson Plan Suggestions

- description of how the sketch might be used in each of the three lesson parts - *Minds On, Action!, Consolidate.*
- includes student groupings, instructional strategies, and connections to manipulatives or other technologies.

Minds On

- activities 1 and 2 involve plotting points in the first quadrant so they can be used to assess prior learning during a Minds On activity

Action

- students can work in pairs to determine how to plot integer and rational coordinates using all four quadrants of the plane

Consolidate

- students could work in pairs to practice plotting points and to practice naming coordinates.

Extensions:

Invite students to create a system for naming points/locations in 3D space. Then allow students to use the extension activity to discover how to name points in 3D space.

Replace the map in any of the sketches with a different map or a picture.

Questions or activities for students/parents to explore together:

1. What is always true about any point that is:
 - a) in Quadrant 1? Quadrant 2? Quadrant 3? Quadrant 4?
2. What do you notice about the coordinates of points on the vertical axis? the horizontal axis?
3. How would you teach someone else to plot points? Test your teaching method using the points (2, -5) and (-4, -5).
4. Create a game using any of the 4 map activities and play the game with a sibling, friend or parent.