

Project 36

Why Coordinate?

Objective: Child will be able to plot and draw polygons on a coordinate plane given a set of vertices. They will be able to determine side lengths using their graphs

Essential Question: How might we represent polygons and measure sides using coordinate planes?

Special Materials: None

Bricks Required: 1x bricks of various sizes; two brick plates

Project Structure:

Engage/Explain

1. Have child create a coordinate plane using SOHO Bricks.
2. Provide them a set of vertices to represent a square: $(-3,3)$ $(3,3)$ $(3,-3)$ $(-3,-3)$
3. Ask child to identify the polygon shape they see.
 - a. If child has trouble visualising the shape, they may connect the lines from point to point using a different color brick.

Explore

1. Ask child to determine the length of the side and explain how they got their answer.
 - a. Most children will probably count the studs to determine their answers; be careful to facilitate thinking on counting so they arrive at the correct answers.
2. Ask child if they can devise a "formula" for determining the correct length using the coordinates.
 - a. Provide time for child to explore various formulas of their creation, always checking the correct answer to see if they match.
 - b. The equation they should arrive at is the absolute difference between the two coordinates (i.e. $|x_2-x_1|$).

Explain/Elaborate

1. Provide child additional paper practice problems to determine polygon shapes and length of sides.

