

Project 37

The Plots Thicken

Objective: Child will be able to practice plotting points on a coordinate plane.

Essential Question: How might we plot points in a coordinate plane?

Special Materials: None

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

Project Structure:

Engage/Explain:

1. Ask child to create a horizontal number line extending in both - and + directions. Ask that the zero be a different color brick.
 - a. Have child practice plotting numbers along this number line (a skill they should already have).
 - b. Monitor child and check for misconceptions.
2. Have child create a vertical number line using the same zero point and extending in both - and + directions.
 - a. Child will have created an x - y coordinate system.
3. Have child practice plotting on the horizontal and vertical axes separately to make sure they are able to identify each axis. You may choose to refer to these as vertical/horizontal, up-down/left-right, or as x and y .
4. Once child gets the hang of things, provide them coordinates in pairs (x,y) .
 - a. As child plots each point, circulate and check for and correct misconceptions.

Explore:

1. Have child clear their graph of any previous points.
2. Provide child a set of coordinates:
 - a. $(2,2)$ $(-2,2)$ $(2,-2)$ $(-2,-2)$
3. Ask child to plot these points and reflect upon them.
 - a. What is different about them?
 - b. What happens to the point when a negative is added?
4. Have child converse with you about coordinates, quadrants and signs.
5. Have child translate their work onto conventional graph paper, with proper labels and coordinates and quadrants labeled.
6. Provide additional problems on brick graph and paper graph, slowly scaffolding away from the brick graph.

