Unit 6
Problem Solving with the Coordinate Plane

Grade 5
Math

Description:

In unit 6, students use the first quadrant of the coordinate plane to locate and plot points. They use the coordinate system to analyze relationships between points, ordered pairs, shapes and lines. Students apply their knowledge of the coordinate system to solve real world and mathematical problems.

Standards:

Geometry	
Classify two-dimensional figures into categories based on their properties.	
5.G.A.1	Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number in the ordered pair indicates how far to travel from the origin in the direction of one axis, and the second number in the ordered pair indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
5.G.A.2	Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
Operations and Algebraic Thinking	
Analyze patterns and relationships.	
5.OA.B.3	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

Enduring Understandings:	Essential Questions:
• A coordinate plane has two axes that cross at the origin. • The coordinate plane can be used to model and compare numerical patterns. • Real world situations may be represented on a graph. • Patterns and relationships can be represented numerically, graphically, symbolically, and verbally. • Graphical representations can be used to make predictions and interpretations about real world situations.	• How can you use ordered pairs to locate points in a coordinate plane? • How do coordinate grids help you organize information? • How can numerical patterns be plotted on a graph? • How can analyzing points plotted on a graph provide different types of information within a real world situation?