## Unit 7 Lesson 11: Constructing the Coordinate Plane

### 1 Guess My Line (Warm up)

#### Student Task Statement

1. Choose a horizontal or a vertical line on the grid. Draw 4 points on the line and label each point with its coordinates.
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1. Tell your partner whether your line is horizontal or vertical, and have your partner guess the locations of your points by naming coordinates.
* If a guess is correct, put an X through the point. If your partner guessed a point that is on your line but not the point that you plotted, say, “That point is on my line, but is not one of my points.”
* Take turns guessing each other’s points, 3 guesses per turn.

### 2 The Coordinate Plane

#### Student Task Statement

1. Label each point on the coordinate plane with an ordered pair.
* 
1. What do you notice about the locations and ordered pairs of $B$, $C$, and $D$? How are they different from those for point $A$?
2. Plot a point at $\left(-2,5\right)$. Label it $E$. Plot another point at $\left(3,-4.5\right)$. Label it $F$.
3. The coordinate plane is divided into four **quadrants**, I, II, III, and IV, as shown here.
* 
*
* $G=\left(5,2\right)$
* $H=\left(-1,-5\right)$
* $I=\left(7,-4\right)$
1. In which quadrant is point $G$ located? Point $H$? Point $I$?
2. A point has a positive $y$-coordinate. In which quadrant could it be?

### 3 Axes Drawing Decisions

#### Student Task Statement

1. Here are three sets of coordinates. For each set, draw and label an appropriate pair of axes and plot the points.
	1. $\left(1,2\right),\left(3,-4\right),\left(-5,-2\right),\left(0,2.5\right)$
	* 
	1. $\left(50,50\right),\left(0,0\right),\left(-10,-30\right),\left(-35,40\right)$
	* 
	1. $\left(\frac{1}{4},\frac{3}{4}\right),\left(\frac{-5}{4},\frac{1}{2}\right),\left(-1\frac{1}{4},\frac{-3}{4}\right),\left(\frac{1}{4},\frac{-1}{2}\right)$
	* 
2. Discuss with a partner:
	* How are the axes and labels of your three drawings different?
	* How did the coordinates affect the way you drew the axes and label the numbers?



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