

Richmond Public Schools
Curriculum Framework
Grade 6 Honors (6/7)

Strand: Measurement and Geometry	
<p>6.8 The student will</p> <p>a) identify the components of the coordinate plane; and</p> <p>b) identify the coordinates of a point and graph ordered pairs in a coordinate plane.</p>	
Suggested Pacing	
Related Standards	
<p>Spiral Down:</p>	<p>Spiral Up:</p> <p>7th Grade:</p> <ul style="list-style-type: none"> • SOL 7.7 • SOL 7.10 b, d <p>8th Grade:</p> <ul style="list-style-type: none"> • SOL 8.7 • SOL 8.16d
Essential Questions	Common Misconceptions
<ul style="list-style-type: none"> • How does the coordinate system work? • How do coordinate grids help you organize information? • What patterns can you find on the coordinate grid? • How can you use ordered pairs to locate points in a coordinate plane? • How can a coordinate grid help you give directions? • How can the coordinate system help you better understand other map systems? 	<p>Students may have misconceptions about:</p> <ul style="list-style-type: none"> • where the negative and positive numbers are located • which direction to go in first (up, down, right, or left) • how to plot numbers with zero as a coordinate (ie. (0,4), or (-5, 0))
Understanding the Standard	Essential Knowledge and Skills
<ul style="list-style-type: none"> • In a coordinate plane, the coordinates of a point are typically represented by the ordered pair (x, y), where x is the first coordinate and y is the second coordinate. • Any given point is defined by only one ordered pair in the coordinate plane. 	<ul style="list-style-type: none"> • Identify and label the axes, origin, and quadrants of a coordinate plane. (a) • Identify the quadrant or the axis on which a point is positioned by examining the coordinates (ordered pair) of the point. Ordered pairs will be limited to coordinates expressed as integers. (a)

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<ul style="list-style-type: none"> • The grid lines on a coordinate plane are perpendicular. • The axes of the coordinate plane are the two intersecting perpendicular lines that divide it into its four quadrants. The x-axis is the horizontal axis and the y-axis is the vertical axis. • The quadrants of a coordinate plane are the four regions created by the two intersecting perpendicular lines (x- and y-axes). Quadrants are named in counterclockwise order. The signs on the ordered pairs for quadrant I are (+,+); for quadrant II, (-,+); for quadrant III, (-, -); and for quadrant IV, (+,-). • In a coordinate plane, the origin is the point at the intersection of the x-axis and y-axis; the coordinates of this point are (0, 0). • For all points on the x-axis, the y-coordinate is 0. For all points on the y-axis, the x-coordinate is 0. • The coordinates may be used to name the point. (e.g., the point (2, 7)). It is not necessary to say “the point whose coordinates are (2, 7).” The first coordinate tells the location or distance of the point to the left or right of the y-axis and the second coordinate tells the location or distance of the point above or below the x-axis. For example, (2, 7) is two units to the right of the y-axis and seven units above the x-axis. • Coordinates of points having the same x-coordinate are located on the same vertical line. For example, (2, 4) and (2, -3) are both two units to the right of the y-axis and are vertically seven units from each other. • Coordinates of points having the same y-coordinate are located on the same horizontal line. For example, (-4, -2) and (2, -2) are both two units below the x-axis and are horizontally six units from each other. 	<ul style="list-style-type: none"> • Graph ordered pairs in the four quadrants and on the axes of a coordinate plane. Ordered pairs will be limited to coordinates expressed as integers. (b) • Identify ordered pairs represented by points in the four quadrants and on the axes of the coordinate plane. Ordered pairs will be limited to coordinates expressed as integers. (b) • Relate the coordinates of a point to the distance from each axis and relate the coordinates of a single point to another point on the same horizontal or vertical line. Ordered pairs will be limited to coordinates expressed as integers. (b) • Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to determine the length of a side joining points with the same first coordinate or the same second coordinate. Ordered pairs will be limited to coordinates expressed as integers. Apply these techniques in the context of solving practical and mathematical problems. (b) 			
Vocabulary	Instructional Activities Organized by Learning Objective			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; text-align: center;">Coordinate Plane</td> <td style="width: 33%; text-align: center;">Ordered Pair</td> <td style="width: 33%; text-align: center;">Coordinates</td> </tr> </table>	Coordinate Plane	Ordered Pair	Coordinates	Textbook
Coordinate Plane	Ordered Pair	Coordinates		

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x-axis	y-axis	origin	Notes
Quadrants	Grid Lines		
Assessment			Resources <ul style="list-style-type: none"> ● Print ● Technology-based
			Station Activities
Cross-Curricular Connections			Tiered Differentiations