

## Core Content

<b>Cluster Title: Apply and extend previous understandings of numbers to the system of rational numbers.</b>
<b>Standard 6:</b> Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.  c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
<b>MASTERY Patterns of Reasoning:</b>
<b>Conceptual:</b> Understand a rational number as a point on a number line.
<b>Procedural:</b> Place rational numbers on horizontal and vertical number lines. Write an ordered pair using rational numbers to represent a point on the coordinate plane.
<b>Representational:</b> Plot points on a coordinate plane given an ordered pair using rational numbers. Extend number line diagrams and coordinate axes to represent points with rational number coordinates.

## Supports for Teachers

<b>Critical Background Knowledge</b>
<b>Conceptual:</b> Have experience with the coordinate plane. Understand that an ordered pair is composed of two parts: the first coordinate refers to the x-axis, the second coordinate refers to the y-axis.
<b>Procedural:</b> Identify the coordinates of plotted points.
<b>Representational:</b> Plot points for given ordered pairs.

<b>Academic Vocabulary and Notation</b>	
+, −, coordinate plane, ordered pair, x-axis, y-axis	
<b>Instructional Strategies Used</b>	<b>Resources Used</b>
Play coordinate plane battleship as a whole class and then with partners.	<a href="http://www.lessonplanspage.com/MathBattleshipPlotCoordinates79.htm">http://www.lessonplanspage.com/MathBattleshipPlotCoordinates79.htm</a> (Note: Modify the lesson plan to include rational numbers within a limited range; for example, halves and fourths between -2 and 2.)
<b>Assessment Tasks Used</b>	
<b>Skill-based Task:</b> Plot the following ordered pairs: (3, 2), (-4, 5), (-8, -3), (4, -6), ( $2\frac{1}{2}$ , -5), (-9.75, 0) (Note: Approximation is appropriate.)  Create a graph of several points and have students write the ordered pair for each point.	<b>Problem Task:</b>