

6. Understand a rational number as a point on the number line. Use number lines and coordinate axes to represent points on a number line and in the coordinate plane with negative number coordinates.	<b>Coherence:</b> <a href="#">NY-5.G.1</a> → <a href="#">NY-6.NS.6</a> → <a href="#">NY-7.NS.1</a>
a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line. Recognize that the opposite of the opposite of a number is the number itself, and that 0 is its own opposite.	e.g., With the number 3, $-(-3) = 3$ .
b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane. Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.	
c. Find and position integers and other rational numbers on a horizontal or vertical number line. Find and position pairs of integers and other rational numbers on a coordinate plane.	
7. Understand ordering and absolute value of rational numbers.	<b>Coherence:</b> <a href="#">NY-5.NBT.3b</a> → <a href="#">NY-6.NS.7</a> → <a href="#">NY-7.NS.1</a>
a. Interpret statements of inequality as statements about the relative position of two numbers on a number line.	e.g., Interpret $-3 > -7$ as a statement that $-3$ is located to the right of $-7$ on a number line oriented from left to right.
b. Write, interpret, and explain statements of order for rational numbers in real-world contexts.	e.g., Write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that $-3^{\circ}\text{C}$ is warmer than $-7^{\circ}\text{C}$ .
c. Understand the absolute value of a rational number as its distance from 0 on the number line. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.	e.g., For an account balance of $-30$ dollars, write $ -30  = 30$ to describe the size of the debt in dollars.
d. Distinguish comparisons of absolute value from statements about order.	e.g., Someone with a balance of $\$100$ in their bank account has more money than someone with a balance of $-\$1,000$ , because $100 > -1,000$ . But, the second person's debt balance is much greater than the first person's credit balance because $ -1,000  >  100 $ .
8. Solve real-world and mathematical problems by graphing points on a coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	<b>Coherence:</b> <a href="#">NY-5.G.2</a> → <a href="#">NY-6.NS.8</a>

**Within-Grade Connections:**

- Students must be able to place rational numbers on a number line (NY-6.NS.7) before they can place ordered pairs of rational numbers on a coordinate plane (NY-6.NS.8).<sup>(14)</sup>
- Plotting rational numbers in the coordinate plane (NY-6.NS.8) is part of analyzing proportional relationships (NY-6.RP.3a).<sup>(14)</sup>