

Name _____

Chapter
10

Integers, Number Line, and the Coordinate Plane

Dear Family,

Have you ever watched the countdown for a space shuttle launch? The time remaining to the launch gets smaller and smaller as the launch approaches, ending in the countdown "3....2....1....Blastoff!" For those working on the mission, time is divided into time before and after the launch. Blastoff is the zero. Time before the launch is negative, and time after the launch is positive.

We use a similar method with temperature—both the Fahrenheit and Celsius scales set a zero that is within the normal range of temperatures for a cold climate. Warmer temperatures are positive, and temperatures colder than zero are negative. A similar method is used to describe elevation, with sea level as the zero and positive and negative elevations on either side. Geographically the equator is set as zero latitude, and other latitudes reference north and south of that zero. For longitude the choice of a natural zero was less apparent, and so the zero was set through the Royal Astronomical Observatory in Greenwich, England. Other longitudes are measured east and west of this zero. Richmond, Virginia, for example, is located at 37° north latitude and 77° west longitude. Its sister city Windhoek, in Namibia, is found at 22° south latitude and 17° east longitude.

You can explore the idea of plotting with integers using a globe. First find the point that is 0° latitude and 0° longitude. How would you describe the location of a favorite spot, such as your home or a favorite vacation destination? What is on the opposite side of the globe from that place?

Happy hunting!

| Lesson | Learning Target | Success Criteria |
|---------------------------------------|---|--|
| 10.1 Integers | Understand the concept of negative numbers and that they are used along with positive numbers to describe quantities. | <ul style="list-style-type: none"> I can write integers to represent quantities in real life. I can graph integers on a number line. I can find the opposite of an integer. I can apply integers to model real-life problems. |
| 10.2 Comparing and Ordering Integers | Compare and order integers. | <ul style="list-style-type: none"> I can explain how to determine which of two integers is greater. I can order a set of integers from least to greatest. I can interpret statements about order in real-life problems. |
| 10.3 Rational Numbers | Compare and order rational numbers. | <ul style="list-style-type: none"> I can explain the meaning of a rational number. I can graph rational numbers on a number line. I can determine which of two rational numbers is greater. I can order a set of rational numbers from least to greatest. |
| 10.4 Absolute Value | Understand the concept of absolute value. | <ul style="list-style-type: none"> I can find the absolute value of a number. I can make comparisons that involve absolute values of numbers. I can apply absolute value in real-life problems. |
| 10.5 The Coordinate Plane | Plot and reflect ordered pairs in all four quadrants of a coordinate plane. | <ul style="list-style-type: none"> I can identify ordered pairs in a coordinate plane. I can plot ordered pairs in a coordinate plane and describe their locations. I can reflect points in the x-axis and the y-axis. I can apply plotting points in all four quadrants to solve real-life problems. |
| 10.6 Polygons in the Coordinate Plane | Draw polygons in the coordinate plane and find distances between points in the coordinate plane. | <ul style="list-style-type: none"> I can draw polygons in the coordinate plane. I can find distances between points in the coordinate plane with the same x-coordinates or the same y-coordinates. I can find horizontal and vertical side lengths of polygons in the coordinate plane. I can draw polygons in the coordinate plane to solve real-life problems. |