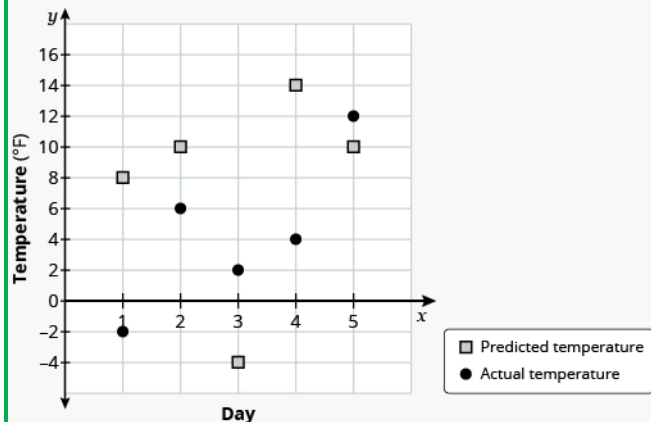# NWEA Assessment Item Illustrating 6.NS.C.8

Domain: The Number System
6.NS.C: Apply and extend previous understandings of numbers to the system of rational numbers.
Calculator Availability: No

Use the information to answer the question.

Serena learned about the science of weather predictions. Each night, she predicted the high temperature for the next day. Serena plotted her predicted high temperature and the actual high temperature on a coordinate plane for a period of 5 days.

During these 5 days, what was the greatest difference between Serena's predicted temperature and the actual temperature? Enter the answer in the box.

[____] °F

Alignment: 6.NS.C.8: Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

This knowledge is fundamental for building continued understanding of number systems. This item requires students to determine the distance between two points with the same x-coordinate within a real-world context.
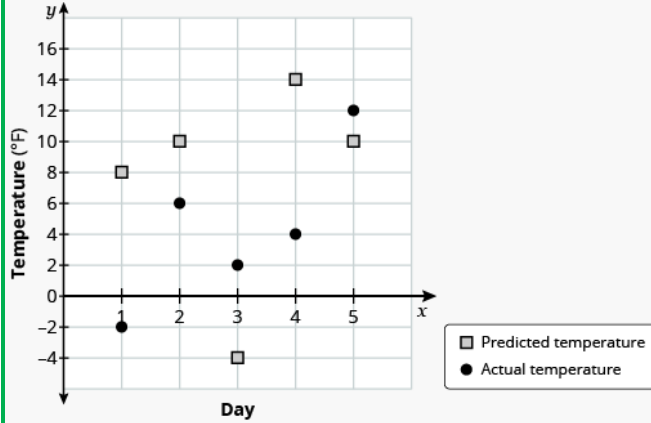
Coherence: Students began work with the number line in grade 2 and extended that understanding to graph points in the first quadrant in grade 5.[5.G.A.1] In grade 6, students must find the distance between two points on a number line, including points with negative coordinates. In grade 7, students will extend their knowledge of distance between two points with the same first or second coordinate to their understanding of operations with negative integers.[7.NS.A.1] In the work of grade 8, students will use their understanding of rational numbers to model with linear functions,[8.F.A/B] to develop slope understanding,[8.EE.B] and to use the distance formula to find segment lengths.[8.G.B.8]

Rigor: This item attends to conceptual understanding and application. Students recall the concept of a negative number and the number line to identify coordinates and to calculate the distance between the points. The context is provided to give meaning to the operations, and the required mathematics is directly indicated in a real-world scenario.

Answer Key:

Use the information to answer the question.

Serena learned about the science of weather predictions. Each night, she predicted the high temperature for the next day. Serena plotted her predicted high temperature and the actual high temperature on a coordinate plane for a period of 5 days.

During these 5 days, what was the greatest difference between Serena's predicted temperature and the actual temperature? Enter the answer in the box.

[10] °F