6.2 Interpreting Graphs

Explore Using a Graph to Solve Problems

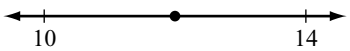
The following notes provide guidelines to help you adapt the Explore Using a Graph to Solve Problems section in *MathLinks 9*.

- Have students begin by completing the Warm Up to review writing coordinates of points and interpreting graphs.
- Provide students with an enlarged copy of the graph on page 220 of *MathLinks 9*, as well as a ruler. Show the steps for interpolating using the ruler and various points along the x- or y-axis.
- For #3, use the equation to show students how their estimates were close to the actual value. Show the substitution to the class, and then have students do the same with another value from the table in #1.
- Review students' answers to #4. Have students share their answers so they understand that there are many ways of explaining when points can and cannot be connected.

Examples

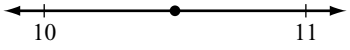
Working Example 1:

- Encourage students to pay attention to the scale on each axis. Before beginning the Example, have students estimate the value between numbers on various scales. Draw a number line on the board, label two numbers on it, and plot a point in between for them to estimate. For example,



Working Example 2:

- Review decimals with students. Draw a number line and label it with two consecutive integers. Plot a point between the two integers and have students estimate the value to the nearest tenth. For example,



Communicate the Ideas, Practise, and Apply

- For #10, students may be unsure whether it is appropriate to join the points. To interpolate, they will be drawing a straight line. However, the points in this scenario are discrete, since you cannot have half of a program.
- Provide students who need additional practice with **BLM 6–3 Section 6.2 Extra Practice**.

Math Link

- Read and discuss the introduction. Discuss the use and meaning of *kedge* and *anchoring*.
- You may need to tell students what intervals are appropriate for their graph.

Common Errors

- Some students may not get accurate results when they interpolate or extrapolate.

R$_x$ Encourage students to keep their ruler parallel to the grid lines. When extending the line to extrapolate, remind students to put the ruler on the full length of the original line. Less dexterous students may need the line extended for them.

- Some students may forget when to connect the points with a straight line to interpolate or extrapolate.

R$_x$ Review how to determine whether points are included between other points. Use simple examples, such as distance and number of books. Can you have half a metre? Can you have half a book?