**Interactive Learning**

**Overview**
Students use tables of values to graph linear equations.

**Essential Question**
How can you graph an equation on a coordinate grid?

**Materials**
Interactive Learning Record Sheet 20, 1 per group; transparency of grid paper

**Vocabulary**
linear equation, x-value, y-value

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**Set the Purpose**
You already know how to make a table of values for an equation and how to plot ordered pairs on a coordinate grid. Today you will learn to graph an equation on a coordinate grid.

**Connect**
What steps do you use to make a line graph? [Label and number the axes; plot ordered pairs of data; connect the points with lines.]

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**Pose the Problem**
On the board, write: \( y = x + 2 \). Work with a partner. Complete the table of values for this equation. Then graph the point represented by each pair of numbers. Give students time to work and to share their graphs.

**Link to Prior Knowledge**
Copy the first table from the Recording Sheet on the board. How can you use the equation to complete the table? [Substitute each value of \( x \) in the table and solve for the corresponding \( y \) value.] Complete the table of values with the class. What point on the coordinate grid corresponds to the \( x \)-value of 1 and the \( y \)-value of 3? Plot that point. Similarly, elicit from students how to plot the other points. Plot the points and draw a line through them.

**Academic Vocabulary**
The graph of this equation is a straight line, so the equation is called a **linear equation**. Write “linear” on the board and highlight the word “line” within it.

**Small-Group Interaction**
On the board, write: \( y = x - 5 \). Work with your partner. Use this equation to complete the second table on your Recording Sheet. Then graph the equation.

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**Extend**
Make a table of values for \( y = x + 3 \) and \( y = x + 5 \). Let \( x = 1, 4, \) and 8. Graph these equations on the first coordinate grid of your recording sheet. What do you notice? [All the lines are parallel.]

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**Link to Investigations, Second Edition**
Joint-Usage Master Plan
Blended Instruction (Plan 1):
Topic 17 and Units 3, 6, and 9

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**Graphing Equations**