

Exploring Slope-Intercept Form of a Line

Learning Goals

- Identify the slope and y-intercept of a line given its graph or equation
- Write the equation of a line in slope-intercept form
- Graph a line given an equation in slope-intercept form

Activity

1. **Explore** the slope-intercept screen for 5 minutes and think of 1–3 questions or observations.
2. Manipulate parts of the **equation or graph** and describe the effects of each action below.

Action	Action on...	How the equation is affected	How the graph is affected
Increase the numerator of m	<input checked="" type="checkbox"/> The equation <input type="checkbox"/> The graph		
	<input type="checkbox"/> The equation <input type="checkbox"/> The graph		
	<input type="checkbox"/> The equation <input type="checkbox"/> The graph		
	<input type="checkbox"/> The equation <input type="checkbox"/> The graph		
	<input type="checkbox"/> The equation <input type="checkbox"/> The graph		

3. **Pair-Share:** Compare your actions in #2 with your partner. Describe an action that your partner took that you didn't.

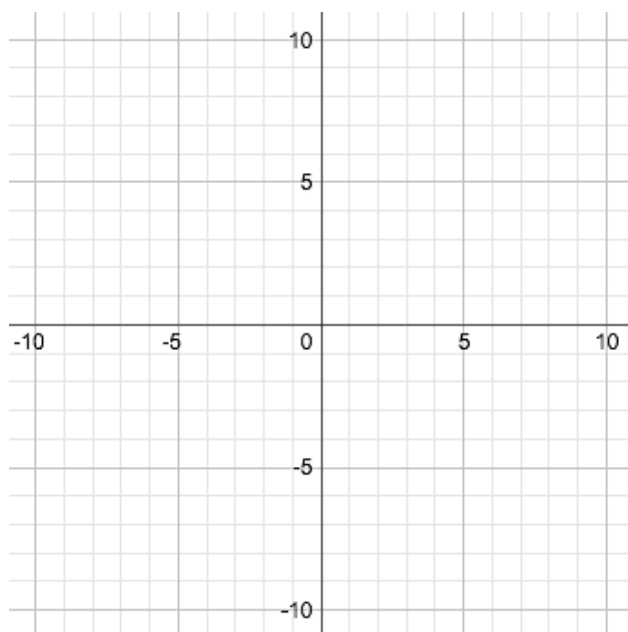
4. Describe how m in the equation $y = mx + b$ relates to the graph.

5. Describe how b in the equation $y = mx + b$ relates to the graph.

6. Complete the table below.

How can you...	Explain what you changed	What other changes did you notice?
Make a line steeper?		
Make a line less steep?		
Shift a line up?		
Shift a line down?		

7. Without using the sim, describe how you would graph a line with the equation $y = \frac{1}{5}x - 2$ and graph it on the grid provided.



8. Describe how you would graph any line with the equation $y = mx + b$.