

## Exploring Slope

### Learning Goals

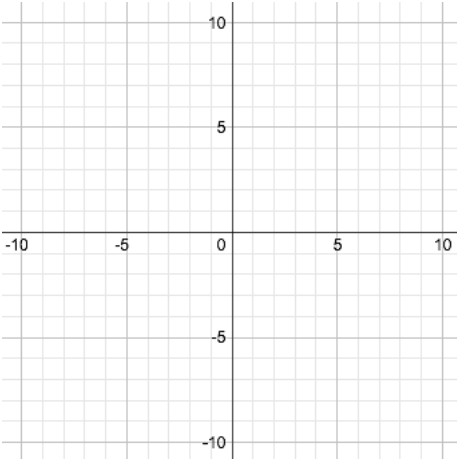
- Explain how the slope of a line is computed
- Determine the slope of a graphed line
- Calculate the slope of a line given two points on the line

1. **Explore** the slope screen for 5 minutes and write down 1–3 questions that you have.
2. **Create** three lines with different slopes. Sketch your lines and complete the table below.

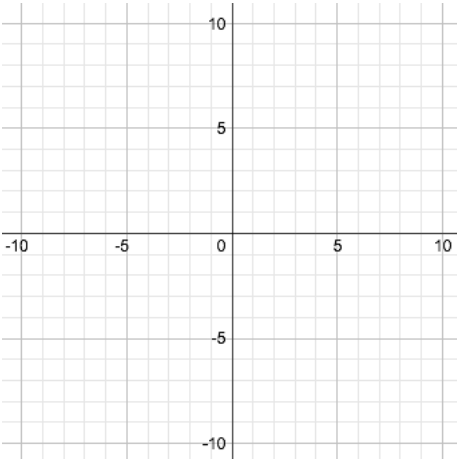
	<b>1</b>	<b>2</b>	<b>3</b>
<b>Sketch</b>			
<b>Coordinates of two points on line</b>	(     ,     ) and (     ,     )	(     ,     ) and (     ,     )	(     ,     ) and (     ,     )
<b>Calculate slope</b>			
<b>Type of slope</b>	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Zero <input type="checkbox"/> Undefined	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Zero <input type="checkbox"/> Undefined	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Zero <input type="checkbox"/> Undefined

3. In the fraction that represents slope, describe how the **top** and **bottom** numbers (numerator and denominator) relate to the graph.
  
4. Compare with your responses for **#2–3** with your partner. Write a **description of slope** that relates the fraction and the graph:

5. Use the **Save Line** feature to find two *distinct lines* whose slopes are the same. Sketch both lines and record your findings below.

Sketch both lines	Coordinates of two points on each line	Calculate slope	Observations to discuss with your partner
	Line 1 (     ,     ) and (     ,     )	$m = \frac{\square - \square}{\square - \square} = \frac{\square}{\square}$	
	Line 2 (     ,     ) and (     ,     )	$m = \frac{\square - \square}{\square - \square} = \frac{\square}{\square}$	

6. Find two different sets of points on the same line. Sketch the line and record your findings below.

Sketch	Coordinates of two points on each line	Calculate slope	Observations to discuss with your partner
	Line 1 (     ,     ) and (     ,     )	$m = \frac{\square - \square}{\square - \square} = \frac{\square}{\square}$	
	Line 2 (     ,     ) and (     ,     )	$m = \frac{\square - \square}{\square - \square} = \frac{\square}{\square}$	

7. Calculate the slope of a line between the points (-5, -3) and (1, 6).

8. Describe how to calculate the slope of a line between any two points.