

# Calculating Slope (Simplified Version) Teacher Notes

*This document is intended as a teacher guide for the simplified Calculating Slope exploration. This version of the student exploration does not contain most of the activity directions. This version was created for a cleaner student page, with the assumption that the classroom teacher would help student with the directions.*

Name: \_\_\_\_\_  
 Class/Block: \_\_\_\_\_ Date: \_\_\_\_\_

**Calculating Slope**

**Part I.**

**1.**    **A = ( 1 , 2 )**  
          **B = ( 3 , 4 )**

1a. Slope = \_\_\_\_\_

1b. Describe how the applet shows the slope calculated from the points:

1c. Explain what appears on the graph with Show  $\frac{\Delta y}{\Delta x}$  checked:

**2.**    **A = ( 2 , 2 )**  
          **B = ( 6 , 5 )**

2a. Complete:     $\frac{\Delta y}{\Delta x} = \frac{\boxed{\phantom{000}}}{\boxed{\phantom{000}}} = \frac{\boxed{\phantom{000}}}{\boxed{\phantom{000}}} = \boxed{\phantom{000}}$

**3.**    **A = ( 1 , 4 )**  
          **B = ( 5 , 2 )**

3a. Complete:     $\frac{\Delta y}{\Delta x} = \frac{\boxed{\phantom{000}}}{\boxed{\phantom{000}}} = \frac{\boxed{\phantom{000}}}{\boxed{\phantom{000}}} = \boxed{\phantom{000}}$

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Launch the **Calculating Slope** applet.

For problem 1, have students select the following checkboxes:

- **Options**
- **Line AB**
- **Ordered pairs with A&B selected**
- **Slope triangle(s)**

Move points A and B to the correct locations.

Before answering this question, select **Options** again and select the **Slope calculations(s)** check box and the check box for **line AB**.

*Students can uncheck Options afterward*

For problems 2 and 3, students can:

- Leave the check boxes as they were at the end of problem 1
- Move points A and B to the new coordinates
- Use the applet to fill in the boxes, which act as scaffolding for calculating the slope of the line



For problems 4, 5, and 6, students should:

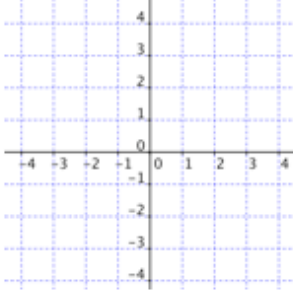

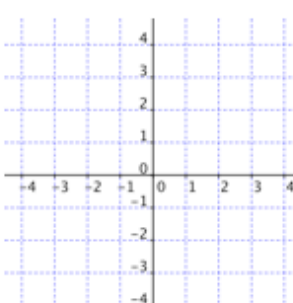
- Leave the check boxes as they were at the end of problems 1, 2, and 3
- Start WITHOUT the applet (close their laptop lids or minimize the applet)**
- Calculate the slope of the line given the two points.
- Plot the points and draw the line on the grid.
- Label the change in y and change in x on the graph, similar to how this is done in the applet.
- When done with each problem, check the slope and graph using the applet.

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 Class/Block: \_\_\_\_\_ Date: \_\_\_\_\_

**Part II.**

**# Calculate the slope**

**Graph the line**

<p>4. <b>A = ( 2 , 2 )</b>  <b>B = ( 3 , 4 )</b></p> $\frac{\Delta y}{\Delta x} = \frac{\square}{\square} = \frac{\square}{\square} = \square$ <p>Slope = _____</p>	
<p>5. <b>A = ( 0 , 1 )</b>  <b>B = ( 4 , 2 )</b></p> <p>Slope = _____</p>	
<p>6. <b>A = ( 1 , 4 )</b>  <b>B = ( 4 , 1 )</b></p> <p>Slope = _____</p>	

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For problems 7 and 8, students should:

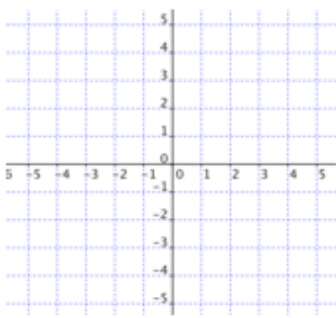
- Leave the check boxes as they were at the end of problems 1, 2, and 3
- Start WITHOUT the applet (close their laptop lids or minimize the applet)**
- Calculate the slope of both lines (line AB and line CD) given the two points for each line.
- Plot the points and draw and label the lines on the grid to the right.
- Answer the question, “Which line has a greater slope?” and explain their reasoning with evidence from the slope calculation and/or the graph.
- When done with each problem, check the slopes and graphs using the applet; select *Options* and turn on check boxes for line CD.

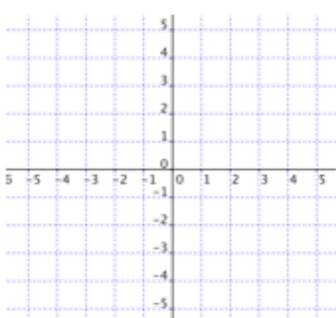
Name: \_\_\_\_\_  
 Class/Block: \_\_\_\_\_ Date: \_\_\_\_\_

**Part III.**

**# Calculate and compare slopes**

**Graph the lines**

<b>7.</b>	Line 1: <b>A = (0, 0)</b> <b>B = (2, 2)</b>  Slope = _____	
	Line 2: <b>C = (-1, 2)</b> <b>D = (1, 4)</b>  Slope = _____	
	Which line has a greater slope? How do you know?	

<b>8.</b>	Line 1: <b>A = (1, 2)</b> <b>B = (4, 4)</b>  Slope = _____	
	Line 2: <b>C = (2, 1)</b> <b>D = (4, 4)</b>  Slope = _____	
	Which line has a greater slope? How do you know?	

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