

What's My Line?

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ACTIVITY OVERVIEW

Students will explore the slope of a line and write linear equations given two points using the TI-Navigator. This lesson is designed for Introduction to Algebra I and/or Algebra IX students.

VIRGINIA SOL OBJECTIVES

SOL A.6 The student will select, justify, and apply an appropriate technique to graph linear functions and linear inequalities in two variables. Techniques will include slope-intercept, x - and y -intercepts, graphing by transformation, and the use of the graphing calculator.




SOL A.7 The student will determine the slope of a line when given an equation of the line, the graph of the line, or two points on the line. Slope will be described as rate of change and will be positive, negative, zero, or undefined. The graphing calculator will be used to investigate the effect of changes in the slope on the graph of the line.

SOL A.8 The student will write an equation of a line when given the graph of the line, two points on the line, or the slope and a point on the line.


TI-NAVIGATOR APPLICATIONS


TI-83/84 Graphing Calculator, Learning Check Software, Activity Center, Quick Poll

LESSON OVERVIEW

Launch the TI-Navigator  and begin class  or .

Instruct students to log into Navnet.

Begin Warm Up with Activity Center  to review students on slope as a rate of change.

Send Quick Poll  on slope.


Begin the lesson with Activity Center  exploring writing equations of lines.

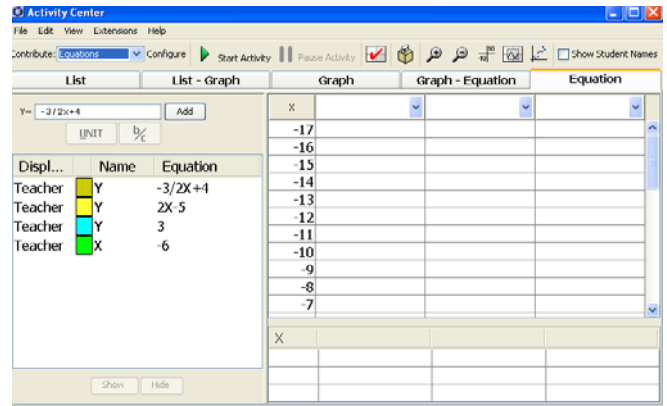
Send the Learning Check  on Slopes and Equations of Lines.

What's my Line?

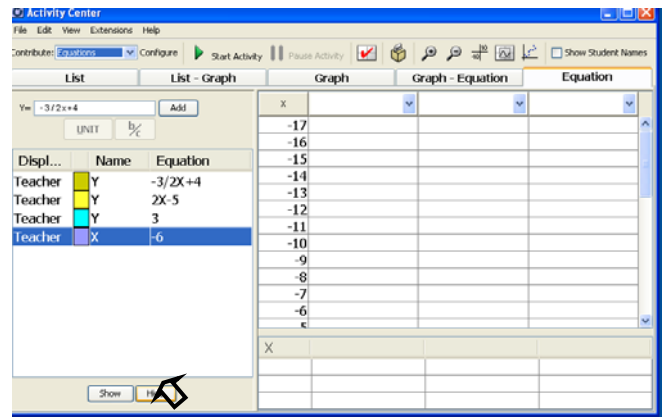
Teacher's Handout

Preparation of the Warm Up Activity:

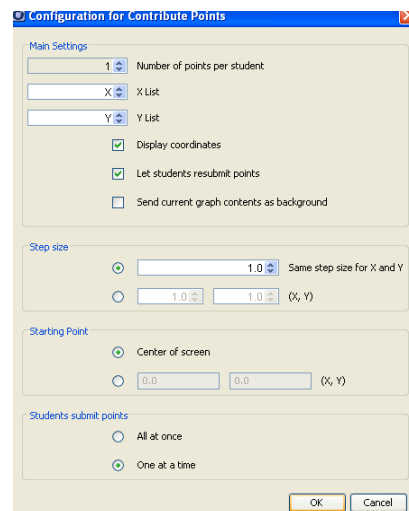
- Go to Activity Center ; in the **Equation** tab, type in at least 4 linear equations. Make sure to hit ADD after each linear equation. Assign different colors for each linear equation by choosing from the color palette.



- Allow only one linear equation to show by hiding the other equations.

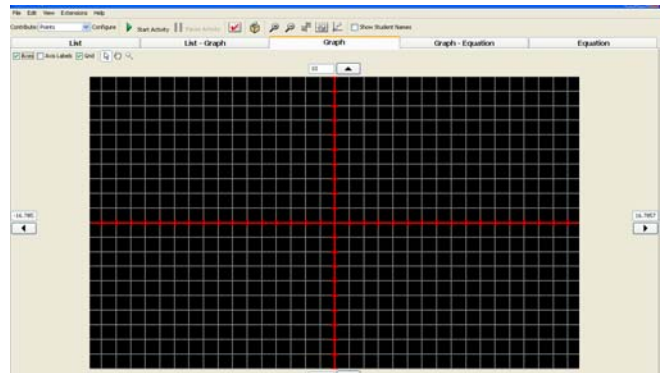


- Configure the activity to allow students to contribute one point. Do not allow students to resubmit points.



- Configure step size to one. Use all other default settings. Hit OK.

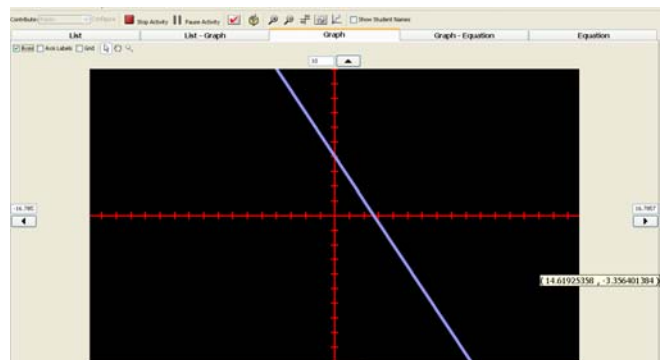
Save the activity center setting.



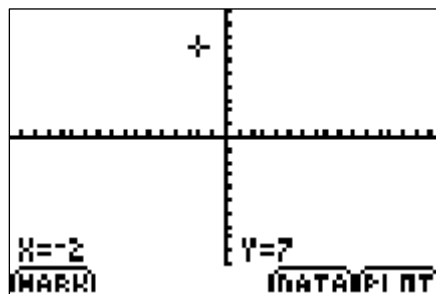
WARM UP ACTIVITY:

1. Go to Graph. Turn the grid off. Start activity; show one line at a time and allow students to submit a point on the line. Encourage them to be sure that their point is directly on the line.

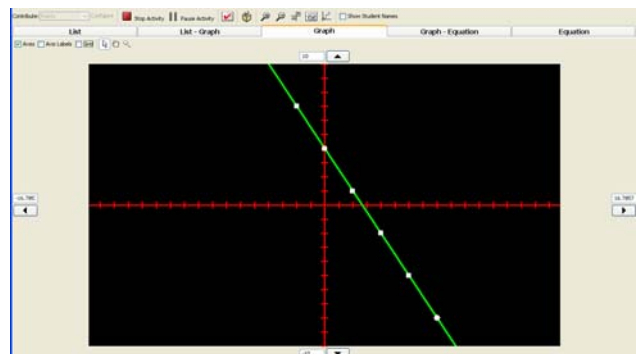
Overhead view:



Student's calculator view:

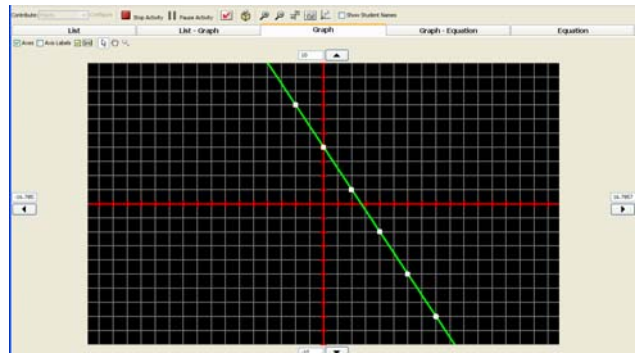



2. Pause the activity and go to List Graph tab and discuss the ratio of the change in y over the of change in x.
3. Highlight a pair of points at a time by clicking on the first point and control click on the second point and guide students in finding the slope using the slope formula.



4. Turn on the grid and have students come up and count rise over run to verify the slope found using the formula.

5. Repeat the process and be sure to include horizontal and vertical lines.



6. Insert a Quick Poll  question about the slope of a given line as needed. Please refer to the Learning Check file for the Warm Up Activity.

Lesson:

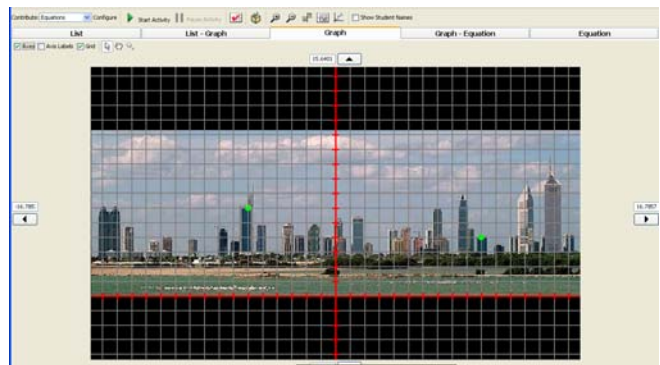
1. Go to Activity Center .

2. Configure the activity to allow students to contribute one equation. Use all other default settings.



3. Go to the Graph tab and start the activity prompting the students to submit an equation with two given points.

4. Pause the activity and go to the Graph Equation tab. Click on a line to show its equation and discuss the differences.

5. Open another Activity Center setting and repeat the process up to Skyline Activity 4.



Evaluation:

1. Open Learning Check  and send  the Final Evaluation to the class.