

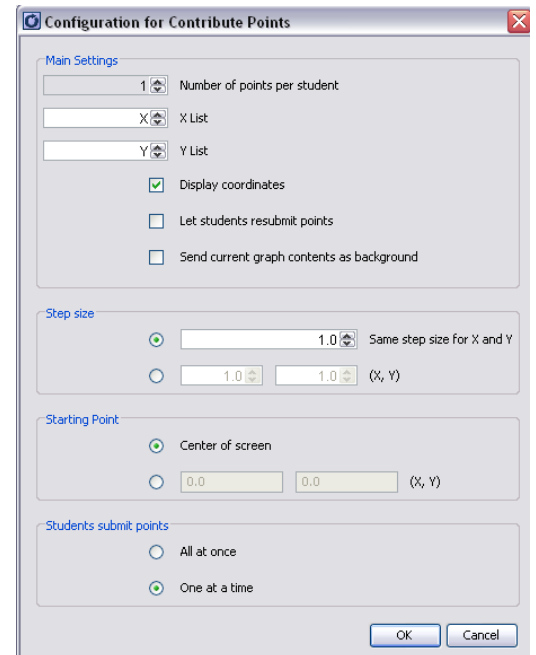
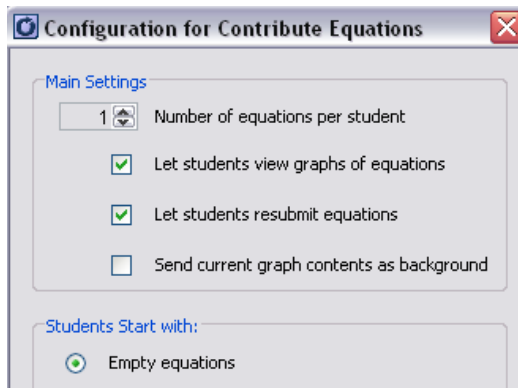
Gettin' Linear: Phase 1

Overview: Designed for beginning Algebra students to introduce the concepts of slope and y-intercepts, this activity has students try to match a given line by typing in the equation. In the process, they will build their understanding of the meanings of slope and y-intercept, and writing equations in slope-intercept form. Using Activity Center, students try to write an equation that matches a given line.

Prerequisite skills: Students should understand how to graph a function on the coordinate plane from an input-output table and know that the graph of a linear function is a line.

Procedures:

1. Launch TI-Navigator and Begin Class. Load the attached Activity Settings file (Activity Square Grid.act). [The activity center shows a square grid, with the graph of $y=x$].
2. Ask the students to determine the coordinates of various points on the line. This can be done as a group with the teacher or a student marking the points on the projected image, or as an Activity Center Activity, with the students contributing points to the graph. Suggested configuration settings:
3. Then ask students to determine the equation for the line, based on their points. Change the **Contribute** pull-down to **"Equations."** Suggested configuration settings:



4. When the majority of students have correctly determined the equation, **Stop Activity**.
5. Hide the screen from the students, switch the view to **Graph – Equation**, and you will see that $y=x$ is visible (indicated by bold, non-italic type), but several other equations are hidden (non-bold, but italic). Note that these equations have various slopes and y-intercepts. Choose the next equation you wish to work with, click that equation, and then click **Show** at the bottom of the equation window. You can click **View – Mask Teacher Input** to hide the equations from view. Repeat steps 2, 3 and 4 with the students.

Displ...	Name	E... ↕
Teacher	Y	$X+4$
Teacher	Y	X ←
Teacher	Y	<i>$3X-4$</i>
Teacher	Y	<i>$3X+4$</i>
Teacher	Y	<i>$3X$</i>
Teacher	Y	<i>$.5X$</i>
Teacher	Y	<i>$-X$</i>
Teacher	Y	<i>$-3X$</i>

- 6. Drawing conclusions:** Ask students what they have discovered about the coefficient of x and its relationship to the line, and what they have discovered about the number added or subtracted from x and its relationship to the line. This should lead to definitions for slope and y -intercept and lead to discussion of slope-intercept form of linear equations.

Next step: “Gettin’ Linear: Phase 2” in which students determine the slope of a line, and **“Gettin’ Linear: Phase 3”** in which students determine the equation of a line, given two points.