# Exploring Linear Equations

## Overview:
This is meant to be an introduction to the equation of a line from the slope and y-intercept of the line.

## Objectives:
- Understand relationship of slope and y-intercept of line to the equation of the line

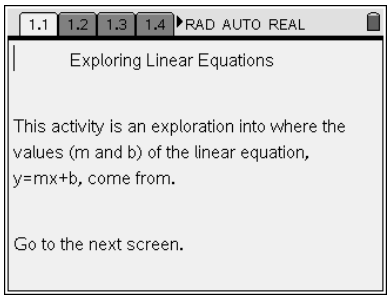
## Materials:
- TI-Nspire™ computer software *****
- TI-Nspire™ *****
- Exploring Linear Equations student worksheet (a copy for each student) (Exploring Linear Equations SW.doc)
- Exploring_Linear_Equations.tns

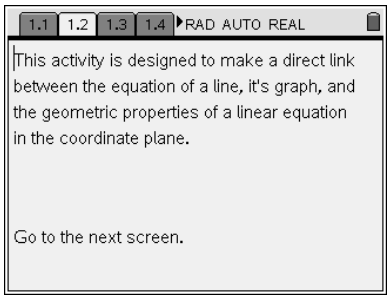
*****Note – This activity can be done:
1. By teacher demonstration using the TI-Nspire™ computer software,
2. By teacher demonstration using the TI-Nspire™ viewscreen, or
3. By the student with their own TI-Nspire™ at their desk.

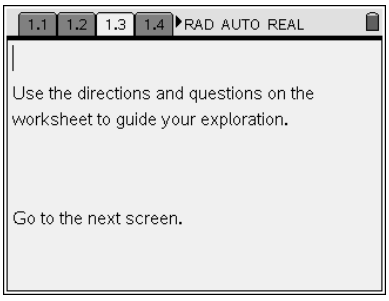
## Procedure:

1. If the students will be doing the exploration on their own, the file ***Exploring_Linear_Equations.tns*** will need to be transferred to each calculator. Each student will need a copy of the Exploring Linear Equations Student Worksheet (***Exploring Linear Equations SW.doc***).

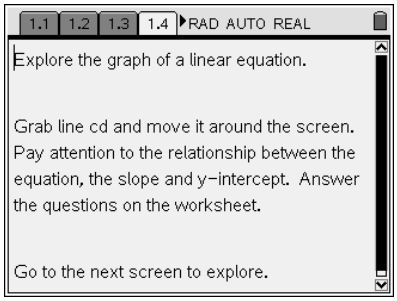
2. Open the file ***Exploring_Linear_Equations.tns*** in TI-Nspire™. The first couple of screens give a brief overview of the activity and some basic directions.



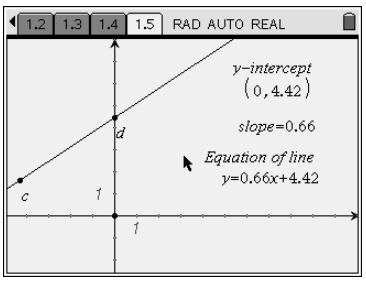




3. Have students refer to the student worksheet to guide their exploration and answer the questions. Screen (1.4) gives them a brief overview of what they will be doing. This screen refers them to their student worksheet to do their exploration.



4. Moving to screen 1.5, the students will see the initial graph of a linear equation that they will use in their exploration. They will also see the slope, y-intercept and the equation labeled. (Depending on the level of the student, available time and what you want to accomplish, you could change this activity by having the students construct their own line, label the slope, y-intercept and equation before doing the exploration questions on the worksheet)




5. When students finish the questions about the equation of the line, have a brief class discussion as to what they learned through their exploration.

**Sample answers to Student Worksheet Questions**

Exploring Linear Equations

2. Slope and y-intercept values are the same as those values in the equation.
3. Slope is next to (attached to) the *x* variable. Being multiplied by *x*.
4. The number being added or subtracted from the *x* term.
6. The negative slope equation slants down to the right. The positive slope equation slants up to the right.
7. The relationship of the values to the equation stays the same. Slope is just negative.
9. The slope stays the same, the y-intercept changes with the location of *d*.
10. The equation of the line contains the values of the slope and y-intercept.