

## TI- Exploration Lesson Plan

Name: Renee Gambino
Grade level(s)/Subject taught: 9 <sup>th</sup> Grade Algebra
Objectives: <ul style="list-style-type: none"><li>• The students will use their knowledge of systems of equations and inequalities to explore different ways of seeing and interpreting the solutions to given problems using the graphing calculator.</li></ul>

1. Write the Mathematical Concept or “key idea” that modeling will be used to teach: (e.g. Students use mathematical modeling/ multiple representation to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships)

The Students will explore systems of inequalities by:

- Entering inequalities using symbols
- Plot their graphs (including union and intersection shades)
- Store (x, y) coordinate pairs as lists
- Enter inequalities with vertical lines in an X= editor
- Trace points of interest (such as intersections) between functions

Materials: Overhead calculator projector, class set of graphing calculators, paper, pen or pencil, and activity WKS (provided by teacher).

“...a rich **one-page, single-spaced**, description or a *vision* of your best thinking...”

After spending about a week on systems of linear equations and inequalities, showing the students both algebraically and graphically how to solve each, I will use this activity to explore systems of linear equations and inequalities with the graphing calculators. I will begin with a quick warm-up that the students will work on as they enter the room for the first 10 min. of class. The warm-up will consist of questions related to linear equations and inequalities and ask the students to find solutions by graphing since we will be dealing with graphs later in the class with the calculators. When the 10 min. are up I will go over each of the problems with the students and answer any questions they are having. After we complete the warm-up, we will begin the activity. I will first pass out the worksheet that goes along with this activity and spend some time going over that. I will then pass out a graphing calculator to each of the students. At this time I will review how to find the solution to a system of linear equations. We will go over how we go about entering the two equations in the  $Y=$  on the calculator. We will also review how to see the graphs of the lines as well as how to find the solution (intersection) of the two lines. After doing a couple of examples related to this I will move into the example that is given on their worksheet that walks them through the steps of graphing a system of inequalities. I will go through this process with them step by step, helping them with problems they are encountering on the way. Depending on how I think the class picks up the material, I will either do another example with them or let them explore on their own using the first example as a reference. During their exploration of the activity, I will be walking around the room assessing how the students are doing and giving my support and guidance where it is needed. When the students have completed their worksheet they will be asked to return their graphing calculators and hand in their worksheets so I can check for their understanding of the material.

### **TI- Exploration Activity Using Linear Systems of Equations and Inequalities Rubric**

CATEGORY	4	3	2	1
<b>Mathematical Concepts</b>	Explanation shows complete understanding of the mathematical concepts used to solve the problem(s).	Explanation shows substantial understanding of the mathematical concepts used to solve the problem(s).	Explanation shows some understanding of the mathematical concepts needed to solve the problem(s).	Explanation shows very limited understanding of the underlying concepts needed to solve the problem(s) OR is not written.
<b>Use of Manipulatives</b>	Student always listens and follows directions and only uses manipulatives as instructed.	Student typically listens and follows directions and uses manipulative as instructed most of the time.	Student sometimes listens and follows directions and uses manipulative appropriately when reminded.	Student rarely listens and often "plays" with the manipulative instead of using them as instructed.







