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System of Linear Equations

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CMST SCOLLARCITY Lesson Plan Template-Lesson Plan using **TI Technologies**

Name: Courtney Bruyea

Grade level(s): 10,11,and 12 Special Education & Math

Objectives:

Students will solve systems of equations by graphing. Through using the graphing calculator students will be able to visually see how linear equations cross to create a solution to a system of equations. The students will also learn how to trace and calculate the solution to the system using the graphing calculator as well.

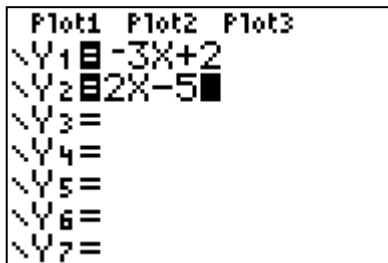
Procedure:

Students will use mathematical modeling to represent a system of linear equations and their solution. Students will use the graphing calculator to interpret a system of linear equations by graphing them. They will then calculate the solution to the system of equations by using the calc. application within the graphing calculator functions.

Lesson Description:

Using the graphing calculator, I plan on having my students graph a system of linear equations. I will start the lesson by asking my students if they remember how to graph a line. Once we have reviewed how to graph a line using the calculator I will then introduce the topic of solving systems of equations.

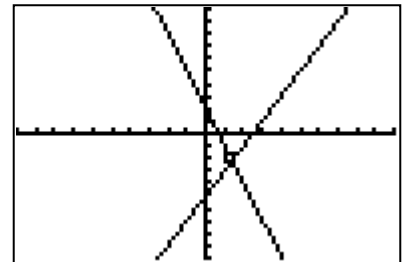
I will begin the activity by writing two equations on the board that I will have my students write down in their notebooks. ($y = -3x + 2$, and $y = 2x - 5$). I will then ask them to go to their calculators and press the $y=$ button and clear any old equations by pressing clear. Then as I am entering the equations on my calculator I will have my students enter their equations into their calculators. The students will enter the first equation in the y_1 spot and then press the down arrow key and enter the second equation in the y_2 spot. I will circulate around the room to assure that the students know and understand how to accomplish this task.



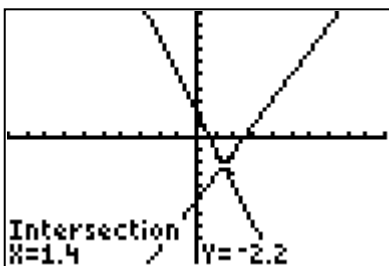
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Plot1 Plot2 Plot3
Y1 -3X+2
Y2 2X-5
Y3 =
Y4 =
Y5 =
Y6 =
Y7 =
```

Next I will instruct the students to view their graph by pressing the Zoom 6 button. Then they will press the Trace button and the \rightarrow button six times to move the cursor to the intersection of the two lines. I will be modeling this on the overhead while my students are completing this task. I will check for understanding by asking my students if they have accomplished this task. Once completed I will move on to the next step.

Next, we will find the point of intersection of the two equations by pressing 2^{nd} [Calc] 5. The calculator will then ask you to select the first two intersecting curves. Since Y1 is already selected, press enter. The calculator will now ask for the second intersecting curve. Since Y2 is selected, press enter. Now the calculator will ask you to guess the intersection by selecting a nearby point with the cursor. The cursor is already at the intersection, so press enter.



The intersection is at (1.4, -2.2). As seen in the picture below.



I would then circulate around the room to see how my students were doing and if they had any questions. I would then give them other examples to work on by themselves while I walked around to check to see if they understand how to solve a system of equations graphically. I would require the students to complete the examples according to the requirements stated in the rubric below.

CATEGORY	4	3	2	1
Mathematical Concepts	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.
Use of Calculator	Student always listens and follows directions and only uses calculator as instructed.	Student typically listens and follows directions and uses calculator as instructed most of the time.	Student sometimes listens and follows directions and uses calculator appropriately when reminded.	Student rarely listens and often "plays" with the calculator instead of using them as instructed.
Completion	All problems are completed.	All but 1 of the problems are completed.	All but 2 of the problems are completed.	Several of the problems are not completed.