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Families of graph

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Generic Lesson Plan Template

You should submit this form in addition to any computer generated files/documents/models to your group folder on Angel. Please create a .zip file and upload the group of files as a single archive.

Name: Pablo Lopez
Grade level(s)/Subject taught: 9 Algebra A
Objectives: Student will be able to identify families of graph.

Please provide a rich **one-page, single-spaced**, description or a *vision* of your best thinking on a way or ways you might teach the planned lesson. (approximately $\frac{1}{2}$ page for the teacher role, $\frac{1}{2}$ page for the student role). Also, construct a tentative rubric that you might use with your students (see example)

Items to include in your lesson plan: (Choose your discipline/concepts from your own area).

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)*

Student use mathematical modeling/multiple representation to provide a mean of presenting, interpreting, communicating, and connecting mathematical information and relationship.

and/or...

- 1b. *Write the Science Concept or “key idea” that modeling will be used to teach: (e.g. Organisms maintain a dynamic equilibrium that sustains life).*

Materials:

Graphic Calculator

Grid Paper

Pencils.

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

Prompts:

1. How will you assess the prior knowledge of the student?
2. How will you begin the lesson?
3. What are the teacher and students doing every 5-10 minutes? (Teacher Actions and Student Actions)
4. How will you assess the learning for the lesson?

• **Using Graphic Calculator TI 84 I plan on having my students...**

(software / modeling package(s))

Warming up plotting point in grid paper and connecting them to form lines, with this I will make sure they know how to locate points and draw lines in the coordinate plane.

After that I will give them a worksheet with different line equations and some question included, then I will ask them to use their **graphic calculators** to graph the first set of equations: $y = x$, $y = 2x$, $y = 3x$ and $y = 4x$, I will walk in the classroom to see if the student are working appropriately and check for understanding, I will use the LCD projector to graph the same equations (modeling) using the **TI smart view** and then I will ask to write in their worksheet the similarities and differences among the lines, I will ask some students to share their finding and I will write it in the overhead. Then the student will be asked to write a description of this family of lines as well as the characteristics that the lines have in common and to state how the lines are different.

I will explain the students that this lines are of the form $y = mx$. Then I will ask the student to graph in their **graphic calculator** steeper lines and I will ask the students to write what happen when the absolute value of m increase or decrease.

Next I will ask the student to graph the second set of lines: $y = -x$, $y = -2x$, $y = -3x$ and $y = -4x$. The students will respond the same questions asked for the first set of equations in their worksheet.

I will use the second set equations and questions to check for understanding. Worksheet will be turned in at he end of the class.

RUBRICS

Subject: Algebra A

Grade: 9

Scale: 3

- 2 Student fully understands the concept and graphs the lines in the graphic calculator correctly.
- 1 Student has some misconceptions and some difficulty graphing the lines in the calculator.
- 0 Student shown no work and have many problems graphing the lines in the graphing calculator.

ample: "I was thinking about beginning the class on [modeling X] by using the overhead to ask students what know about X. From this brainstorming session, I might ask them to get into groups and discuss one or more of ideas they gave me. After about ten minutes, I would have the students give their ideas on X and write them down on a transparency so they would be able to see them for the entire hour. From here, I would provide a 10 to 15 minute demonstration of the basics of using _____ modeling software. I would use an conceptual example they would find familiar with such as getting a cold and how it is transmitted. From here, I would have students at computer stations using a prepared guide or tutorial to get them started on basic software usage. I expect that is a time a number of students would "catch on" rather quickly and be able to help others. By the third day, I suspect that most would be well on their way to development of their own or small group models using the _____ software. My plan of assessment would probably be a group model so they would gain more confidence in using the software in a meaningful way. After the second or third lesson, I would ask them to choose a list of thematic or topic areas that fit the software nice and develop a model using the technology. As a product, I would have partners share their model and describe to other small groups how it works. The rubric I design would be general at first so that I might see what kinds of the products the student were capable of creating. From the student types, I would hone my rubric to make the modeling product as challenging as possible without making it too difficult." Etc...

