Lesson plan for equation grapher:

Learning Goals: Student will be able to:

* Discuss basic transformations of graphs
* Explain how changing each coefficient affects the graph
* Explain how changing the coefficient affects each x
* Describe how the graph changes according to the set graph

Lesson:

* The class will discuss some background information as to what transformations of functions means. (Vertical and horizontal translation; vertical and horizontal stretching and shrinking.)
* Discuss students knowledge on different graphs
* The class will go over the goals of the lesson and the expectations of using the computer
* Students will be given a question sheet and they will begin working on the simulation
* Students will answer the following questions based on their observations
* The class will discuss the questions and apply it to transformation of functions

Directions to students:

1. Look at the simulation called Equation Grapher
2. Before using the simulation: make predictions that you think will happen to the graph if you change a and/or c.

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| --- | --- |
| Changing a predictions | Changing c predictions |
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1. Change the different coefficients and constant, the focus will be on a and c. Change b to be zero when you start your observations.

Observation table:

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| --- | --- | --- | --- |
| Changes to a | Change to the graph | Changes to c | Changes to the graph |
|  |  |  |  |
|  |  |  |  |
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Questions:

1. What happens to the graph as you change the coefficients?
2. How do the graphs correlate to the standard graph?
3. What affect does changing a single coefficient have on the graph?
4. What happens when the coefficient becomes a negative?
5. Show some examples of graphs to support your claims.