

Date: October 4, 2010 Grade: 9 – 12
Teacher Name: Je'aime Powell
Subject: Integrated Mathematics I

NC Standard Course of Study – Competency Goal 4

The learner will use relations and functions to solve problems.

Objectives

4.01 Use linear functions or inequalities to model and solve problems; justify results.

a. Solve using tables, graphs, and algebraic properties.

b. Interpret the constants and coefficients in the context of the problem.

4.02 Use exponential functions to model and solve problems; justify results.

a. Solve using tables, graphs, and algebraic properties.

b. Interpret the constants, coefficients, and bases in the context of the problem.

4.03 Use systems of linear equations or inequalities in two variables to model problems and solve graphically.

1. Topic-

Advanced Introduction to TI-8x Calculators: Programming in TI-Basic

2. Content-

TI-Basic, variables, functions, Slope-Intercept linear equation

3. Goals: Aims/Outcomes-

1. Student creation and execution of an application modeling the Slope-Intercept form of a linear equation.

2. Student comprehension of the correlation between programmatic variables versus mathematic variables.

3. Student comprehension of the correlation between programmatic functions versus mathematic functions.

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4. Student increased comprehension of correlation between symbolic versus graphic forms of an equation.

4. Objectives-

- 1. Input a value into a variable*
- 2. Use inputted variables in a function*
- 3. Graph a function*
- 4. Execute generated program*

5. Materials and Aids-

TI-83 plus or TI-84 calculator, projector with TI connection or TI SmartView

6. Procedures/Methods-

A. Introduction-

1. Verbally review Slope-Intercept formula
2. Verbally review the roles of "m" and "b" in the $y=mx+b$ formula

B. Development-

1. Hand generate coordinates from sample $y=mx+b$ equation
2. Hand create graph from system of coordinates
3. Explanation of variables, equation and results

C. Practice-

1. Create application named PTSLOPE
2. Guide through program entry

D. Independent Practice-

1. Student generate the graphs for five example equations on presentation TI-Calc with students at desks comparing results

E. Accommodations (Differentiated Instruction)-

1. Printed instructions for program creation.
2. TI-Link for transfer of programs to allow group solutions to errors

F. Checking for understanding-

1. Student creation and execution of an application modeling the Slope-Intercept form of a linear equation visually verified by the instructor.
2. Student comprehension of the correlation between programmatic variables versus mathematic variables through oral identification.
3. Student comprehension of the correlation between programmatic functions versus mathematic functions through oral identification.
4. Student increased comprehension of correlation between symbolic versus graphic forms of an equation through oral identification.

G. Closure-

1. Turn off calculators.
2. Return loaned calculators to storage.
3. If time remaining perform program transfer of "YinYang" program through TI-Link with references given to TI-Calc site.

7. Evaluation-

1. *Functional program which inputs user variables and then outputs a graph = Satisfactory*
2. *Functional program with incorrect output = Needs Improvement*
3. *Not functional program = Unsatisfactory*

8. Teacher Reflection-