

EISENHOWER PROFESSIONAL DEVELOPMENT PROGRAM

Mathematics Within: Algebraic Patterns

Lesson Plan-Part 2

(Part 1—Jan Barnes)

Participant Name: Laurel Kuhner-Berker

Broad Topic: Linear Equations

Subtopic: Graphing Linear Equations using Slope Intercept

Aim:

Students will learn how to graph a linear equation on an x/y coordinate grid. Then, they will examine the lines created to discover that in a linear equation, the value of y, when $x=0$, is always the y-intercept.

Specific Objective(s):

- o Students will accurately graph 6 points on an x/y coordinate grid and join the points to form a line.
- o Students will express a series of operations in a general form where x and y represent unknown values.
- o Students will recognize that the value of y in the equation, when $x=0$, is always the point at which the line intersects the y-axis (the slope intercept).

Materials/Supplies:

- o Tables with data (collected by playing "You're on a Roll" – from a previous lesson)
- o Prepared coordinate grids with positive numerical values for x and y with the x- axis extending to at least 12 and the y-axis extending to at least 42. (See page 2.)
- o Rulers and/or meter sticks (depending upon the size of the coordinate grids).
- o Colored pencils or thin markers.
- o Chart paper with equal coordinate values as those given to students.

Lesson:

- o Students will have a table of data formed by multiplying variable numbers (x) by the same amount and adding a constant to the product to generate a value for y.
- o Using this data, students will create equations describing the operations, first in terms of the numbers in their tables and then in terms of the variables x and y.
- o Students will graph the x,y values on the prepared x,y coordinate grid. (Page 2)
- o As a whole class, individual graphs will be examined and compared in order to discover that when $x=0$, the line intercepts the y-axis. As a result, they only need the y intercept and one other point in order to graph any set of linear data.

Text or Website References:

"You're on a Roll" game and graphing activity was created as an enrichment activity growing out of completion of "What's my Rule" tables in Everyday Math, Grade 5. It does not use Everyday Math materials.

