



TEACHER PAGE

Lesson: Graphing Linear Equations with Two Variables

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New Arizona Math Standard 4 Geometry and Measurement Grades 8-12
Articulated 4MH3-02 Graph a linear equation in two variables. **4M83-01** Use a table of values to graph a linear equation.

Learning Objectives: The student will be able to:

- compute a table of values from a linear equation
- plot the table of values to form a linear graph

Overview:

Initially students study the relationship between x and y variables which are components of a linear equation. They will also be introduced to x and y intercepts. Students will learn to complete a table of values and plot the points on a coordinate graph. They will solve a variety of linear equations, which will lead to recognizing lines that are horizontal, vertical and the lines which have an incline (slope).

Engage Students:

The students are introduced to several applications for the linear equation. These applications include the relationships between the number of chirps of a cricket and the temperature. Additional relationships can be introduced, such as, water pressure in relation to miles under the ocean, distance traveled given a set rate and varying times, and computing grades with relationship to number of items correctly answered. The students are lead to complete a table of values and to develop the linear graph. The method of graphing by intercepts is incorporated to aid in the graphing.

Follow-up:

The students may search the Internet for additional information on René Descartes and the relationship that was developed between Algebra and Geometry. A challenge for the students will be discovering the equation of a line from a given table of values. Help students develop a discussion centering on changing the equation into slope/intercept form and comparing the ease of graphing using slope and intercept versus the table of values.

Assessment:

Students must be able to complete a table of values and plot the corresponding points to form the graph of the line. With the added understanding of intercepts of a graph and recognition of special equations for a line (horizontal and vertical), the task of graphing can be quickly mastered.

