

## Mathstar Research Lesson Plan

**Grade Level:** 9<sup>th</sup>-10<sup>th</sup>

**Instructor:** Marlene Anderson

**Class Time:** 1:35 to 2:30 pm

**Location:** Texico High School  
520 Griffin St.  
Texico, NM 88135  
Math Room #2

**Date:** April 21, 2003

**# of Students:** 18

**Class Type:** Algebra I – Regular

**Comments:** *(Describe Social/Cultural content of school)*

Texico is a small school whose primary source of income is the surrounding dairies. Texico has a high percentage of cultural diversity. There are approximately 153 students 9<sup>th</sup>-12<sup>th</sup> grade.

**I. Description of Unit:** *(1 to 2 sentences)*

Students are currently studying linear equations, relations and functions. In this lesson, students will use a created function machine to comprehend the concepts of relations and functions, domain and range.

**A. How does this lesson fit into the unit?**

- **Previously learned concepts,** *(What concepts are needed to do this lesson?)*
  - Ordered Pairs
  - Slope and Y-Intercept
  - Graphing Linear Equations
  - Solving Linear Equations
- **Concepts to be learned in this lesson**
  - Relations
  - Domain and Range
  - Equations as Functions
- **Concepts to be used in future lessons**
  - Graphing Parabolas
  - Exponential Growth and Decay
  - Vertical Line Test
  - T-charts
  - Mappings

**B. Instructional sequence for unit** *(Where does this unit fit in the curriculum for the year?)*

Students will have a greater understanding of a function, which is described as a mapping from each member of the input set, which is called the domain, to exactly one member of the output set, which is called the range.

New Mexico State Standards and Benchmarks

- Relate mathematical procedures in one representation to procedures in equivalent representations.
- Justify the reasonableness of solutions and predictions.
- Use tables and graphs as tools to interpret expressions, and equations.

## II. Plan of the Research Lesson

**A. Goals of the research lesson:** *(What do you want your students to learn in this research lesson?)*

Students will be able to determine whether an equation represents a function and will be able to find functional values for a given function.

**B. How does the lesson fit into the overarching lesson study goal?**

*(Example of overarching lesson study goal: Students will be confident in their ability to learn.)*

Through kinesthetic activities, students will be confident in their ability to apply previously learned math concepts to that of functions.

**C. Steps of the research lesson:** *(See attached table)*

**D. Things to prepare/materials:**

Shoe boxes – student function machines

Construction paper

Coordinate Grid on Overhead Transparency