ANCIENT EGYPT - *Pyramid Building*

LESSON PLAN

Objectives:

In this lesson, students will be introduced to the concept of "slope." After completing this lesson, students will be able to:

- calculate the slope of a line.
- determine how the slope of a ramp impacts the amount of force needed to move an object up the ramp.
- apply their knowledge of slopes to real world examples.

Course / Grade Level:

General Math (7th Grade)

Pre-Activities:

- Have students roll a match box car up a ramp made from a board (2x4). Change the slope of the ramp and have the students roll the car up again.
- Discuss the different positions of the ramp and how those positions affected the force needed to roll the cars up the ramp.

Activity Procedure:

1. Begin by discussing the concept of slope. (rise/run)
2. Have the students measure, calculate, and chart the slope for five different ramp positions (new rise and run).
3. Discuss what happens to the slope if you change either the rise or the run.
4. Give the students a chance to practice calculating the slope of a line given both the rise and the run.
5. In the *Time Engineers* game, have the students do the Pyramid *Building* activity. If they have not done this activity before, use the transparency of the interface to show the students how to select the parameters and build the pyramid level.

Discussion / Questions:

- Discuss how to change the length of the ramp (run) so that fewer workers are needed.
- Discuss the other factors that affect the workers ability to pull the stones up the ramp (friction, weight of stone).

Extension:

- Show illustrations of different degrees of slopes in other real world applications. (roadways, buildings, roller coasters, ramps of moving vans, etc.)