

Agenda

February 12, 2005

Have You Lost Your Marbles Too?
"Drop It Like It's Hot!"

Nina Jolivet
Business Computer Information Systems
Career and Technology Education

- Introduction
- Warm up
- Explain set up of room
- Discuss activity
- Engage in activity
- Handout completed data sheet
- Handout calculators
- Excel Activity
 - Create list 1 and 2 with enough room for 9th and 10th block to show how the computer makes the adjustment in the equation
 - Chart wizard
 - Add trend
 - Equation
 - Function wizard
slope
intercept
- TI- 83 Calculators
 - create list
 - turn on plot data
 - set parameters
 - graph
 - graph linear regression
 - create equation
 - test with 9th plot
modify excel with the 9th (see the equation change)
- Briefly explain linear equation and velocity, Newton and Galileo
- Create data base
- Show Technical paper and cover letter
- Show power point
- Closing :Math, Science, History, English, Art, Excel, Power Point, Word, Access, and TAKS

Materials:

blocks, tube, marble, stop watch, measuring sticks (metric)

pencils

data sheets

graph paper

poster paper

poster graph paper

markers

TI-83 calculator

Computer with internet drops

Have You Lost Your Marbles Too!

Multi-Disciplinary Activity

Presenter: Nina Jolivet

Students will be able to analyze and explain a hands-on activity that they will convert into data, charts, graphs, and equations utilizing various forms of technology.

Overview

In small teams students will be engaged in a hands-on activity using a marble, pvc pipe, blocks, a tape measure, and a stop-watch to analyze the distance (using the metric system) the marble will travel as the slope changes, calculate the average velocity given the distance over time, and create an equation. Students will collect their data and input it into the TI-83 calculator and Excel computer application and compare the outcomes of the calculations, graphs, and the equations. As a team, students will further integrate their activity by creating an animated PowerPoint slide show of the activity. They will demonstrate their ability to use the animation tools as a visual to see the rate of speed and distance a marble travels based on the different elevation levels. Each team will write a "Lost Your Marbles" mail-merge cover letter and a technical paper with embedded excel charts and footnotes.

Objectives

Students will:

- Gather and organize data to be used to predict an outcome
- Create a list, graph data, and create an equation using a TI-83 calculator
- Apply excel commands to graph the data, displaying the linear trend, calculate the slope, y-intercept, create an equation, and calculate the average velocity
- Explain how Newton and Galileo's motion and gravity relates to this activity
- Create a power point animation
- Create an Access database for mail-merge
- Write a cover letter summary and a technical paper
- Mail merger the MS Word cover letter with an Access database list
- Format a technical paper with an excel embedded chart, and footnotes