

“A Pendulum Experiment” activity. Overview.

The activity has 3 parts:

1. Collecting data (see worksheet #1).
2. Interpreting data with Geometer’s Sketchpad software (see worksheet #2).
3. Analyzing the results (class discussion):
 - a) Project two-three finished projects onto the big screen.
 - b) Discuss the following questions with your class:
 - How come the data are slightly different for each group?
 - Why the lines of best fit are slightly different for each group?
 - What do you think the constant term represents in the equations of the lines of best fit?
 - What do you think the coefficient of x represents in the equations of the lines of best fit?
 - If you didn’t have a computer, would you’ve been able to determine the equation of your line of best fit?

Worksheet #2.

- Open Geometer's Sketchpad.
- Answer all the questions in **Text Box** on your sketch.
- Save your file under your names and **send** it to your teacher on tel.
- **Hand** in the data your collected to your teacher.

5. a) **Plot the data from the table:**

- Open GSP 4.
- Go **Graph/Show Grid**.
- You will need only first quadrant for your graph, so move the origin (0, 0) to the left bottom corner with the help of the Pointer Tool (arrow on the left vertical tool bar).
- Go **Graph/Plot Points** and plot your data.

b). Do you see any correlation in your data (positive, negative, or none)? Give the reasons.

c). Draw a line (line tool is on the left vertical tool bar, choose a line with two end arrows) through your points that represents best the correlation between x and y-coordinates of your points (a line of best fit).

d). Find the equation of your line of best fit: Click on your line (with a Pointer Tool) and go **Measure/Equation**. Record the equation.

e). Answer questions 6-8 from the worksheet #1.