

Student directions *Pendulum Lab* activity 1: Introduction to Pendulums

Learning Goals: Students will be able to:

- Design experiments to describe how variables affect the motion of a pendulum.
- Use a photogate timer to determine quantitatively how the period of a pendulum depends on the variables you described.

Directions:

1. Play with *Pendulum Lab* to figure out what variables affect the motion of a pendulum and write qualitative descriptions for each variable. For example using the *Skate Park* simulation, you might have written “The type of Skater doesn’t effect the how high the Skater goes even if track friction is on”
2. Design experiments to find the best equation for the relationship for length and period. Include a spreadsheet and chart with a trendline from Excel.
3. Based on your understanding from the Curve Fitting activity, discuss how well you think the equation really describes the relationship.
4. Design experiments to find the best equation for the relationship for initial angle and period. Include a spreadsheet and chart with a trendline from Excel.
5. Based on your understanding from the Curve Fitting activity, discuss how well you think the equation really describes the relationship.