Student directions *Pendulum Lab* activity : 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" and " If the friction is high, the skater doesn't go as far."

2. Design experiments to find the best equation for the relationship for length and period.

    a. Make a data table with at least 10 points in an Excel spreadsheet.
    b. Then, make a scatter plot type of chart.
    c. Describe in your own words what the relationship is.
    d. If you know how, add a trendline from Excel.

3. Design experiments to find the best equation for the relationship for initial angle and period.

    a. Make a data table with at least 10 points in an Excel spreadsheet.
    b. Then, make a scatter plot type of chart.
    c. Describe in your own words what the relationship is.
    d. If you know how, add a trendline from Excel.