

Name: _____

Date: _____

Class: _____

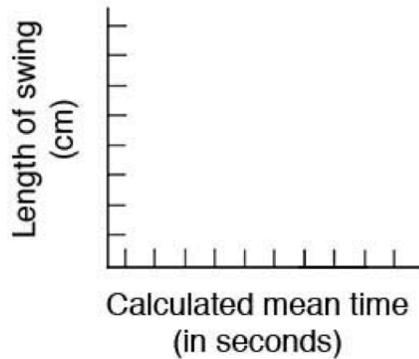
Time That Star!

Day 1 Wrap-up

Today you examined the behavior of a simple pendulum. Fill out this worksheet with the results of your experiments. Each student is responsible for completing this worksheet.



1. Create a line plot of amplitude of each swing versus mean time it takes to make that swing on your own graph paper.



2. Once you plot the data you have the "picture" of the period. What is your guess of the time for that period?
3. How would the results be different if instead of a string 30 cm long, we used 10 cm string?
4. How would the results be different we used a string 100 cm long?

Name: _____

Date: _____ Class: _____

5. Summarize the relationship that you may see with time or swings and the use of different length string.

6. This relationship is actually defined by certain laws of physics. These laws let us say that the period is equal to:

$$2\pi\sqrt{\frac{L}{g}}$$

Where g is the acceleration due to gravity (here on Earth it has a value of 9.8 m/sec^2), L is the length of the pendulum string from where it is tied at the top to where the center of mass is of the tied object, and $\pi = 3.14$.

Does your guessed period in question 3 confirm this? Prove this by showing your work below.