

Name: _____ Date: _____

The Science of Swinging: Graphing Worksheet

1. Choose five different lengths of string, and count the number of swings of the pendulum in 15 seconds. Don't forget to start from the same angle for each test!

Length of String (cm)	# of Swings
10	23
20	16
30	13
40	11
50	9

2. Does the angle that you start the pendulum at affect the number of swings? Take out a protractor and give it a try! For one length of string, start the pendulum at 4 different angles and count the number of swings that occur in 15 seconds?

Release Angle	# of Swings
90°	13
60°	14
45°	13
30°	13

3. What affects the number of swings during the period of 15 seconds?

Hint: Think of the equation: $P = 2\pi\sqrt{\frac{l}{g}}$, what variable do you have control over?

Based on the answers in part 1 and 2, and the fact that we cannot change gravity, g , or π , then the only thing that affects the number of swings in 15 seconds is the string length, l .

4. In the space below, draw a line graph showing the length of the string on the x-axis vs. the amount of times that the pendulum swings on the y-axis.

