Name _____ Date _____

AP Physics Lab #4

Period _____ Mrs. Nadworny

Partners: Due Date _____

Period of a Pendulum

Lab Write-Up Required
use template from website

Purpose

To determine the acceleration due to gravity using a pendulum.

Research Question (1)

What is the relationship between the period of a pendulum and its length?

Variables (5)

- **Independent Variable –**
- **Dependent Variable –**
- **Control Variable(s) –**

Derivation of Mathematical Model (10)

Expected Graph Straightened Graph (5)

(if needed)

Significance of Slope:

Expected y-intercept:

Hypothesis (3)

Experimental Procedure

- **Materials**
  - Pendulum (1)
  -
  -
  -
  -
  -
  -
- **Labeled Diagram** (2 & 3)

- **Method** (5)

Discuss with your lab partners an appropriate method for collecting sufficient data and for keeping the control variables constant.

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Data Collection (15)

Make a clearly labeled table using a RULER and PENCIL for organizing the raw and processed data that you expect you will collect.

Data Processing (25)

In space below, include an analysis of the data collected above, including sample calculations of processing the data, graphs of your data, the experimental relationship, and calculations accompanying comparisons to the math model.

Calculate a percent error with the accepted value.

Attach your graphs to the lab BEFORE your conclusion.

Conclusion (10)

TYPE a conclusion using the general format provided on the *LAB HANDOUT*.

Evaluation (5)

Discuss some relevant sources of uncertainty.

Improvement (5)

For each source of uncertainty listed above, state a practical way to reduce it in a future investigation.

(4)
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