

Physics pendulum lab



**ASSIGN
BUSTER**

Katherine Unman Introduction/Purpose: Pendulums serve a huge purpose that are often overseen by many due to technological advancements being made in the everyday world. A simple pendulum consists of a small object (the "bob") suspended by a lightweight cord. The mass of the pendulum is actually only the mass of the bob; the mass of the string is not included. The period of a pendulum is the amount of time for the bob to complete exactly one cycle or oscillation back and forth.

The length of the pendulum extends from the attached end of the string to the center of mass of the bob. The original aim for this investigation was to "Investigate the simple pendulum". There are many variables one could look into, such as displacement, angle, damping, mass of the bob etc. The most interesting variable, however, is the length of the swinging pendulum. The relationship between the length and the time for one swing (the period) has been researched for many centuries, and has allowed famous physicists like Isaac Newton and Galileo

Galileo to obtain an accurate value for the gravitational force acting on it, "g". In this simple investigation, we performed two activities to visually observe what affects the period of a pendulum, mass or the length of the string. Hypothesis: With our previous knowledge of pendulums and the forces acting on a pendulum, we hypothesized that the length of the string along with gravity would affect the period and the mass of the bob would not. Materials: In order to complete a successful investigation, numerous supplies were needed.

Without these materials, our observations would not have been as accurate.

The materials we used are: 1. Meter stick 2. Stopwatch 3. Pieces of string, 3 of the same length, and one of different length 4. Washers 5. A partner 6.

Pen/pencil Procedure: When effectively investigating what affects the period of a pendulum, some simple yet vital steps are necessary to follow. In this experiment, two activities were performed that share a set of instructions.

These were: 1. Gather all the materials