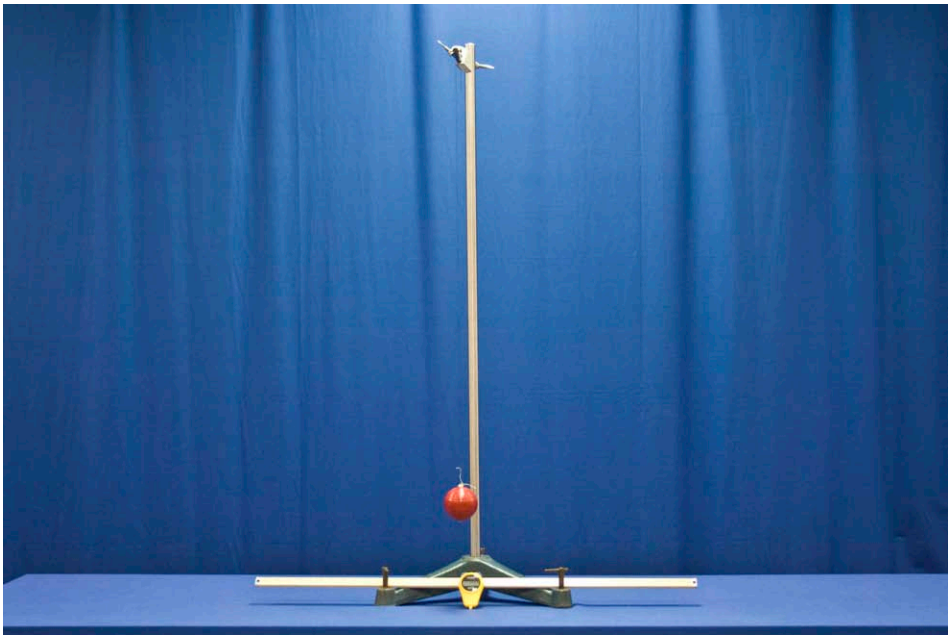
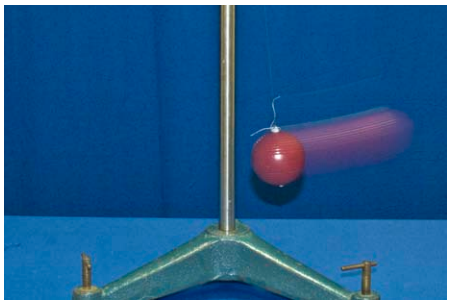
SIMPLE PENDULUM 3A10.10

Oscillations and Waves | Oscillations | Pendula





Concept:

The period of small oscillations of a simple pendulum is given by $T = 2\pi\sqrt{L/g}$ where L is the pendulum length and g the acceleration due to gravity. In the demonstration, the period for various lengths can be predicted using the above formula and then compared to the observed values.

The increased period of larger amplitude oscillations can also be observed by initially displacing the ball ~ 60° from the vertical.

Equipment:

- Large Support Stand
- Large Rod Clamp
- Slotted End Clamp
- Pendulum Bob
- Meter Stick
- Timer

Procedure:

1. Use the meter stick to adjust the pendulum to the desired length (it will be preset to one meter).
2. Bring the pendulum bob to the desired height perpendicular to the slotted end clamp and let it go to begin oscillations.
3. Use the timer to measure the period of oscillation over ten cycles. Then take the average to find the pendulum's period.