# Physics Practicum: Simple Pendulum

# Problem

Given a simple pendulum, measure the period of the pendulum and solve for the gravitational constant ‘g’.

# Equipment and Set Up

1. weight
2. thread or string
3. timer, iphone, watch
4. meter stick

Thread

Students need to construct a simple pendulum by attaching a weight to a string of about 1m. Students need to measure the length **L** of the pendulum string .

# Measurements

Length of pendulum thread L = 1.0 m

Time for 10 swings t = 20s

# Additional Comments

Let the pendulum swing for 10 cycles and measure the time t in seconds.

The period T = t /10 for one cycle.

**Sample Calculation**

**T = 2 √(L/g)**    Solving   g = (**2 L**

Sample measurements are t=20.0s and L=1.0m.

T= 20s/10 = 2.0s

g = (6.2832/2.0s)2 (1.0m) = 9.86 m/s2

Percent difference = [(9.86-9.8)/9.8 ] x 100 = 0.6% difference

**Comments:**

Does the period T depend on the mass of the pendulum bob?

How can we improve the measurement? What creates the biggest error?

**Notes:**