

REAL SCIENCE: THE EFFECT OF MASS ON PENDULUM SWING PERIOD

Purpose

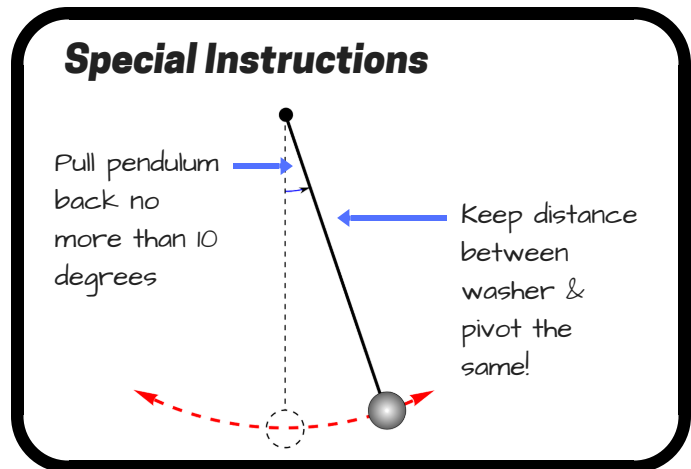
To determine the effect mass has on the period of a pendulum's oscillation

Hypothesis

If the mass at the end of the pendulum _____ (increases/decreases), the period of a pendulum's swing will _____ (increase/decrease/not change)

Material


- ring stand
- identical washers
- stop watch
- suspension or ring clamp
- C-clamps
- metre stick
- string
- protractor



Procedure

1. Set up ring stand and clamp so it hangs from edge of lab bench. Clamp the ring stand on the lab bench.
2. Measure out 1 metre of string.
3. Tie one end of the string to the clamp.
4. Tie the other end of the string to 1 washer. LEAVE PLENTY OF SLACK.
5. Pull the pendulum back and release.
6. Use a stop watch to measure how much time it takes for the pendulum to complete 10 complete (ie. round-trip) swings.
7. Record your time in the data table provided.
8. Untie the end of the string with the washer(s) and add another one.
9. Repeat steps 5-8 up to 5 washers.

Data Tables

	Period (10 swings)		Period (1 swing)
1 washer		Divide values from left table by 10  to get values for right table	1 washer
2 washers			2 washers
3 washers			3 washers
4 washers			4 washers
5 washers			5 washers

Graphing

Plot the data from the right table on a graph.

Period (1 swing) will be plot on the y-axis.

Number of washers will be plot on the x-axis.

Plot individual points (ie. scatter plot) and include a best fit line.

Discussion

- What is the effect of mass on pendulum period? Use CER (Claim, Evidence, and Reasoning) as a framework for your answer.
