

Wave labs

1. Pendulum
2. Dawn of the Slinky[®]
3. Sound Stations
4. Resonance

Lab: Just a Swingin'

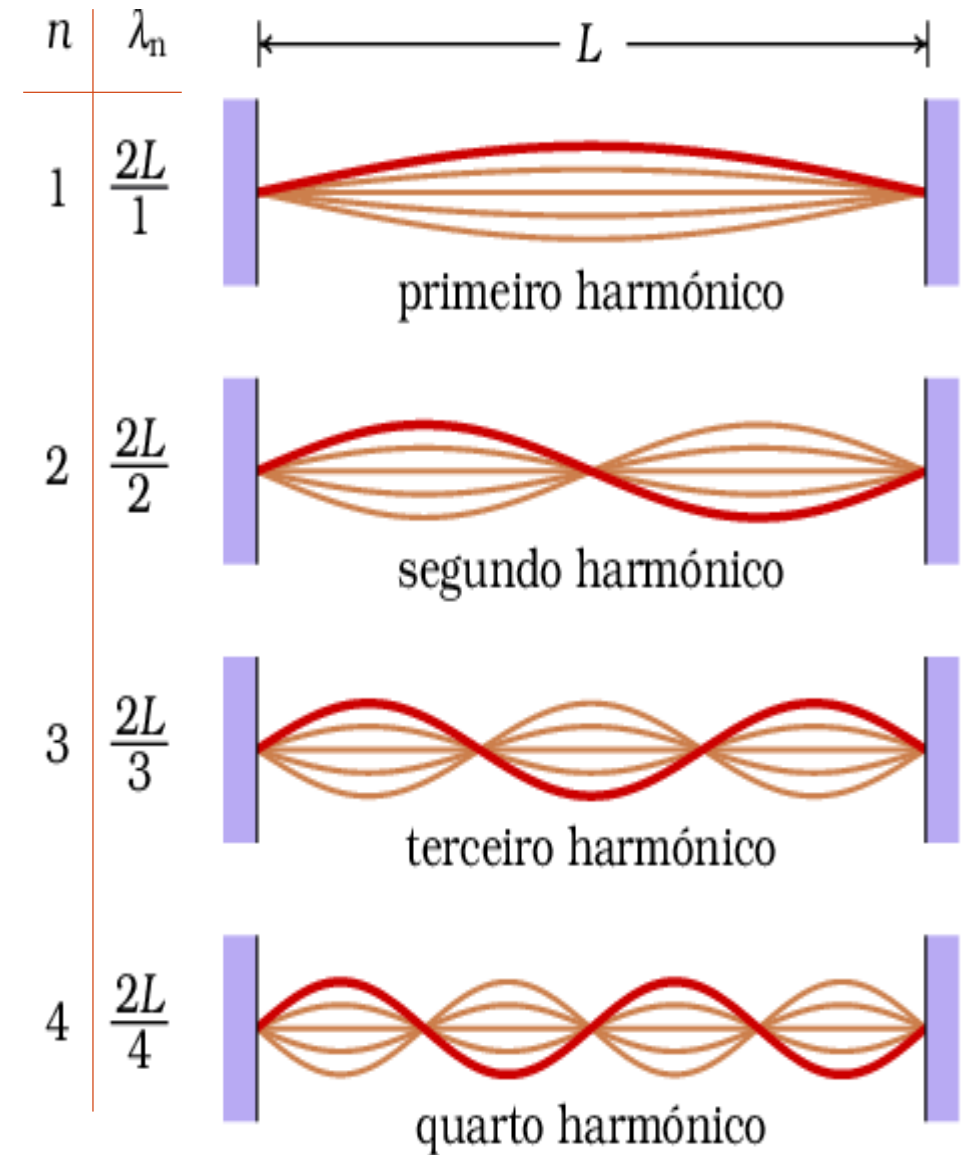
November 14-15

- Obj: Experimentally determine whether the period of a pendulum is affected by its (1) initial energy, (2) mass, and (3) length
- Data: 5 equal intervals of each independent variable; measure the pendulum's time for 10 swings
- Calculations: Period from data. Show proof for one and record all results.
- Graphs: one for each independent variable, **use the same scale for period on each graph and no scale breaks**
- Discussion: The usual and be sure you use the graphs to answer the objective

LAB: THE SLINKY®

November 26

- Obj: (1) Determine the **period**, **frequency**, **wavelength** and **speed** of 4 different standing waves
- Safety notes: Keep Slinky® away from face, do not use in a moving vehicle, do not throw out a window...as a matter of fact don't throw it or any part of it...ever.
- Data: collect in sets of 10 waves, use table length as L , $n = \#$ of anti-nodes
- Calculations: show all equations and work for one standing wave
- Graph the relationship between frequency and wavelength
- Discussion



Lab: Sound Stations

- Follow the provided lab procedures and complete on own paper
- [Click to download the lab procedures](#)

Lab: Sound Resonance

- Obj: Experimentally determine wavelength and speed of sound waves produced by a resonating column of air
- Data: Resonance tube length for 3 different frequency tuning forks
- Calculations: Wavelength and wave speed. Show proof for one tuning fork and record all results.
- Discussion