

# Physics Labs

Labs are due no later than one week after last class day of lab. There is no late, only turned in or not. Feedback is based on accuracy. Grade is based on completion.

- Title (Provided)
- Objective (Provided)
- Diagram(s) of setup/procedure
- Data (tables); minimum\* of 5 data points consisting of trials

# Physics Labs

- Graph(s)
  - use to show relationships between variables
  - General shape of data: line, curve, none
  - Best fit of shape; determine slope if linear
- Calculations – must show work for one, record all results
- Written Discussion
  - What, why, how
  - Results: “answer” to objective using data, calculations, and graphs to support
  - Experimental error: procedural difficulties, “human error”?, never calculations

# Unit 4: Energy/momentum labs

1. People Power
2. Spring Potential
3. Roller Coaster

# Lab: People Power

March 12

- Obj: Experimentally determine your stair climbing power while walking up 15 steps.
- Data: 5 equal intervals from one climb, no trials needed
- Calculations: Your weight in newtons and your total work at the end of each interval. Show calculations once.
- Graphs: total work v. total time...use to find your average power
- The discussion should include, but not limited to: the shape & meaning of the graph as well a comparison of power within your group

# Lab: No Free Lunch (NRG Conservation)

March 16<sup>th</sup>

- Obj: Design a roller coaster for a skater. Verify the law of conservation of energy as the skater moves along the track.
- Follow the provided lab procedures
- [Click to download the lab procedures](#)

# Lab: Simple 1D Collisions & momentum conservation

March 21<sup>st</sup>

- Obj: Verify the law of conservation of momentum and the observe the differences between types of collisions using a collision simulation.
- Follow the provided lab procedures; only need to complete what is on the lab sheet
- [Click to download the lab procedures](#)