

Lab 01: Introduction to Physics

Apparatus

- Position and Velocity Graphs
 - foam board
 - motion detector
 - lab quest
 - meter stick
- Jumping Students
 - Force plates
 - lab quest
 - board

Objective

The purpose of this lab is to introduce you to some of the concepts you will learn in physics this semester, without using equations. You'll take some measurements and make some plots, but mostly you will be observing and thinking about what you see while trying to make sense of it.

Theory

To understand the world around us we make observations while looking for patterns and generalizations. From this we try to determine cause-and-effect relationships and make predictions. These days “making observations” frequently refers to using a search engine, but do not worry, kinesthetic-tactile learning is still a thing. One of the great benefits of a lab class is simply handling the equipment!

Procedure

Instructions are bullet-points, questions to be answered are numbered, information such as this is just text. Note: “graph” and “plot” are used interchangeably.

(Station 1) Position / Time and Velocity / Time Graphs

Follow up questions:

1. How can you determine velocity information from a position / time graph? Be specific.

2. When a position / time graph has a curved (not straight) line, what can you say about your motion?

3. When a velocity / time graph crosses the time axis, what can you say about your motion?

(Station 2) Jumping Students