

AP PHYSICS: TOPIC: KINEMATICS IN ONE DIMENSION (LAB #1)

For this **contest lab** you will be given the following materials with which to experiment. Do whatever experiments you feel are helpful; you will have **30 minutes** to complete your work.

1. Stopwatch
2. Wooden block
3. Lots of space on a tiled floor (with tiles of 1 ft on each side would be good) on which to conduct experimentation.

Assumptions:

The acceleration of the block when sliding along the floor is constant.

You need to determine what forces are acting on the **wooden block** and determine how those forces affect the motion of the wooden block.

If I have a device that will slide the block at 60 feet per second, how far will the block slide on the tile floor? Using this speed in conjunction with the information that you have determined through **experimentation**, you will be asked to predict where the block will stop when fired from my device.

Your write-up should include:

- **Objective:** What was being investigated? What were you trying to find?
- **Theory:** What's going on? Include here the equations you will be using and any needed manipulations of them. They should be clearly explained, with connections to physical laws and diagrams where appropriate. This section should also include your equation for velocity as a function of time.
- **Method:** Description of the procedure you used, including materials and diagrams where necessary.
- **Data:** Observations from doing the experiment; graph(s) of data.
- **Analysis:** Analyze data. Final experimentally determined equation.
- **Discussion:** Discuss the experiment. Draw conclusions from data, suggest ways to improve the experiment and/or further investigations.