

PHY 201/181 Lab Instructor notes
Lab 4: One Dimensional Motion on the Air Track
Fall 2003

Instructions for the students

- Demonstrate the use of the vernier calipers.
- Naturally, warn the students about clanking the cars against the track.
- Point out the scales on the airtracks are in sections.
- Demonstrate how the photogate brackets work.
- Explain that they are to level the track using the single-foot end. Also, they will use this end to tilt it later in the lab.
- Review the signs for velocity and acceleration as the car goes up the hill and down again. If they do their calculations correctly, the correct signs should come out automatically.
- Demonstrate how to push the cars gently uphill for the second part of the experiment.

More notes

- Make sure the “left” and “right” photogates are in correct order.
- After the students leave, you should “unlevel” the airtracks a bit so that the students in the next group have something to level.
- One potential concern is that there are holes in the cars; this could lead to incorrect photogate readings. The holes on most of the cars are now taped over.
- One can press “Enter” to stop recording data from the photogates.
- One thing that occasionally goes wrong is that the holes in the airtrack can become plugged. Use thin wire to clean it out.