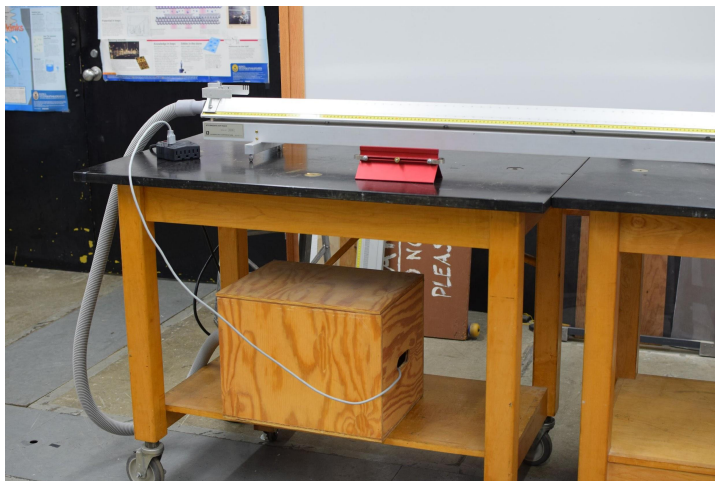




## 1C20.35/1G10.10 Constant Acceleration Air Track

*1C20.35:* To demonstrate motion with uniform acceleration in the absence of friction.

*1G10.10:* To demonstrate Newton's second law in the absence of friction.

**DESCRIPTION** An air track is set on an incline and a glider is released from the top of the incline. The glider moves down the incline with uniform acceleration.

### SUGGESTED TECHNIQUE

1. Turn on the blower using the extension cord switch.
2. Place the glider at the top of the incline. Note that the glider travels from one end of the track to the other with (approximately) constant acceleration.
3. Increase the height of the lab jack to increase the angle of the track and repeat step 2. Note how this affects the acceleration of the glider.
4. Turn off the blower at the end of the demonstration.

### TECHNICAL DETAILS

#### LOCATION OF APPARATUS

| EQUIPMENT        | LOCATION                       |
|------------------|--------------------------------|
| Air Track        | Long Stock Shelves<br>Room 066 |
| Gliders          | Mechanics F                    |
| Blower and Hoses | Above General Use D            |
| Labjack          | General Use C                  |

#### LOCATION OF COMMON ACCESSORIES

#### SETUP INSTRUCTIONS

*Setup Time ~25 min*

1. Connect the blower to an extension cord with a switch so it can be turned on and off.
2. Connect one end of the hose to the blower and the other end to the air track.
3. Turn on the blower and wipe the track down with a kim wipe to remove dust.
4. Place one side of the track on top of a labjack at the lowest height setting (the side not connected to the hose is recommended).

5. Provide the glider.

## **ADDITIONAL RESOURCES**