Vertical Acceleration Demonstrator

P3-3520

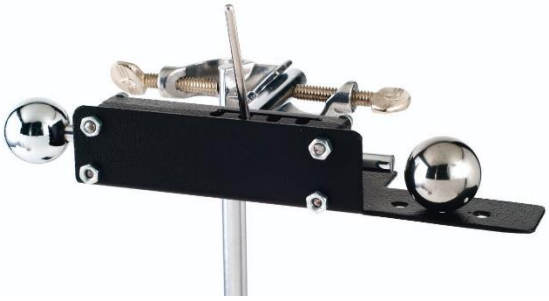
INSTRUCTIONAL GUIDE

Contents

- Vertical Acceleration Demonstrator
- Steel balls (P3-3521)

Required for Activities:

- Ring Stand Base with Rod (66-4220)
- Clamp Holder (66-8290)



Background

First, think about why objects fall. They fall because gravity forces them down. Gravity only acts straight down, and will only affect downward motion. Since the two balls are released from the same height and fall the same distance, they both cover that distance in the same time. The fact that one of them is also moving horizontally makes no difference in its travel time.

Instructions

1. Mount the apparatus at least 1.5 m above the floor. Use a level to make sure the launched ball will be launched horizontally.
2. Pull the spring and latch the lever in one of the notches. The different spring settings will send the projected ball out at different speeds.
3. Place one ball on the platform, as close as possible to the spring plunger.
4. Place the other ball on the post. Rather than push it all the way in, let it balance near the end of the post.
5. Ask students to predict which ball will land first.
6. Release the spring as rapidly as possible and listen for the balls hitting the floor. Do you hear one simultaneous “click” or two distinct and separate “clicks”?
7. Repeat the demonstration, asking students to close their eyes and just listen.

Related Products

Horizontal Projectile Ramp with ball (P2-8490) The Marble Projectile Ramp is used to launch a marble horizontally from a table or desk.

Mini Projectile Launcher (94-1970) The Mini Projectile Launcher projects 16 mm steel balls at ranges suitable for use on the benchtop or from the bench to the floor.

Monkey and Hunter Demo (P4-1965) Analysis of the projectile path of the bullet and the monkey's freefall shows that the bullet will hit the target. But are your students still unconvinced? Show them!

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