

ACCELERATING CART DEMONSTRATION

Purpose

This demonstration shows that when the ball is shot vertically upward from the cart while the cart is accelerating, the ball will not land in the cart.

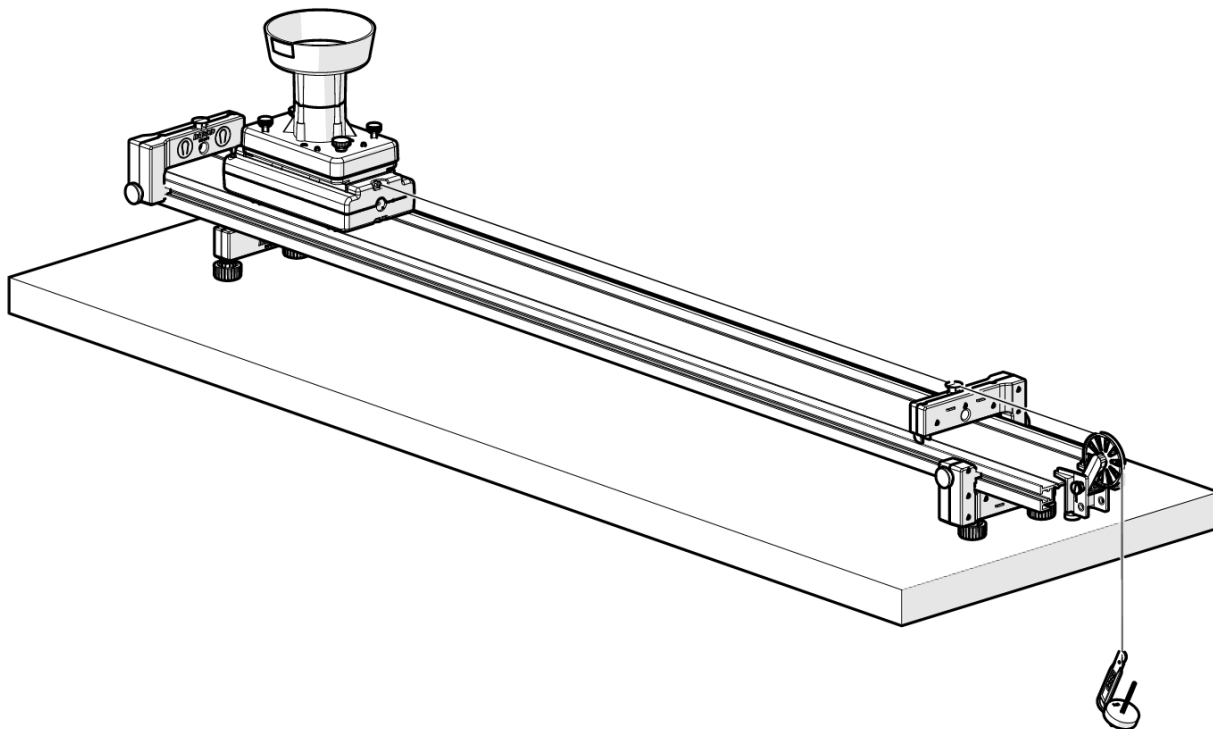
Materials and Equipment

- Data collection system
- Smart Ballistic Cart Accessory
- Smart Cart
- Dynamics Track with Feet
- End Stops
- Super pulley with clamp
- 50-g mass and mass hanger
- 1-m String

Safety

Follow these important safety precautions in addition to your regular classroom procedures:

- Wear safety goggles at all times.
- Do not look down the barrel of the Smart Ballistic Cart Accessory.



Procedure

1. Attach the feet and end stops to the track. Level the track.
2. Clamp the pulley to the end of the track. Attach the string to the cart and pass it over the pulley. Hang the 50-g mass and mass hanger on the string.

3. Attach the Smart Ballistic Cart Accessory to a Smart Cart. Connect the devices together using the Smart Cart accessory cable.
4. Connect the Smart Cart to software and open the Ballistic Cart tool.
5. Set the Trigger Value to 25 cm.
6. Load the ball.
7. Place the cart at the end of the track, start data collection, then release the cart.

NOTE: Catch the cart with your hand before the cart reaches the end of the end stop to prevent the cart from derailing from the track.