Two Track Race Lesson Plan

Amount of time Demo takes: 1-2 mins.
Try this at home!

Materials
- Dual track setup
- Identical pool balls (2)
- Spring-loaded pushing device
- Philips head screwdriver

Set-up Instructions
1. Demo has the balls and pushing device loaded into a padded box.
2. The screwdriver will be used to attach the pusher to the track each day.
3. Once that is all done, the track will have to be level on the table. There are levels attached.

Lesson’s Big Idea
- The fastest way between two points isn’t always a straight line.
- When the balls are released they have the same initial velocity, then the ball on the dipped track rolls down the ramp picking up speed when it reaches the bottom it has a much higher velocity. It will continue down the track until it goes back up the other side, emerging with the same velocity it had when it entered the dip in the track. The ball will end up several inches ahead of the ball that had a constant velocity the entire time.

Instructional Procedure
1. Pull the metal launcher back until it locks. Then, push both pool balls against the launcher.
2. Either ask before you let it go (more challenging) or after the demos for the opinions on what people think will happen and why.
3. Letting others start the race eliminates any suspicion they have of you tampering with the result.

Clean Up
- Clean up between demos if needed. When completely finished gather all materials listed for this demo and make sure everything is accounted for. If
something was used up, broken, or damaged, let someone know so it can get replaced or fixed.

References


Next Generation Science Standards

- K-5
  - K-PS2
  - K-2-ETS1
  - 4-PS3-1
- 6-8
  - MS-PS2-4
  - MS-PS3
- 9-12
  - HS-PS2-2