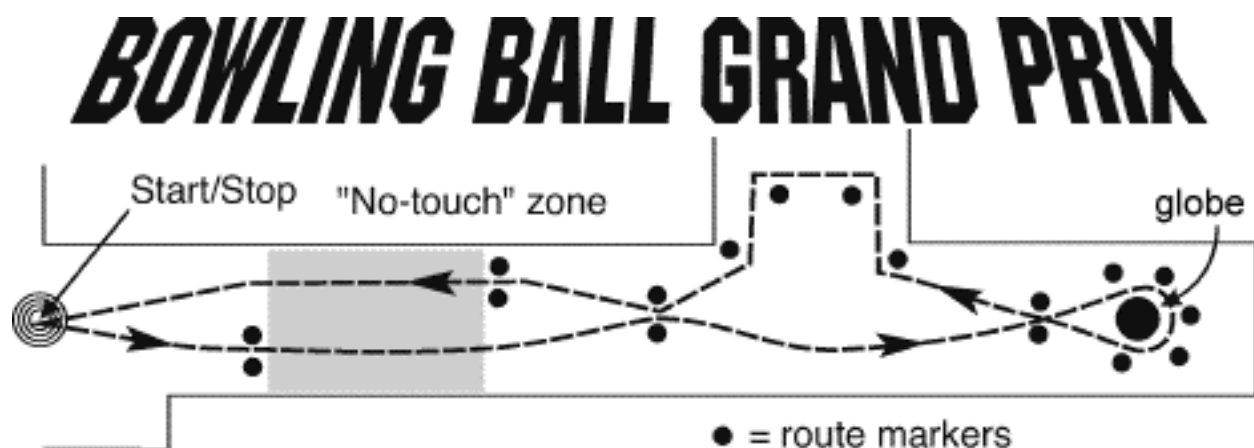


## Physics – Inertia Lab



**Purpose:** The activity will help give students a kinesthetic feel for the inertia concept.

### Materials:

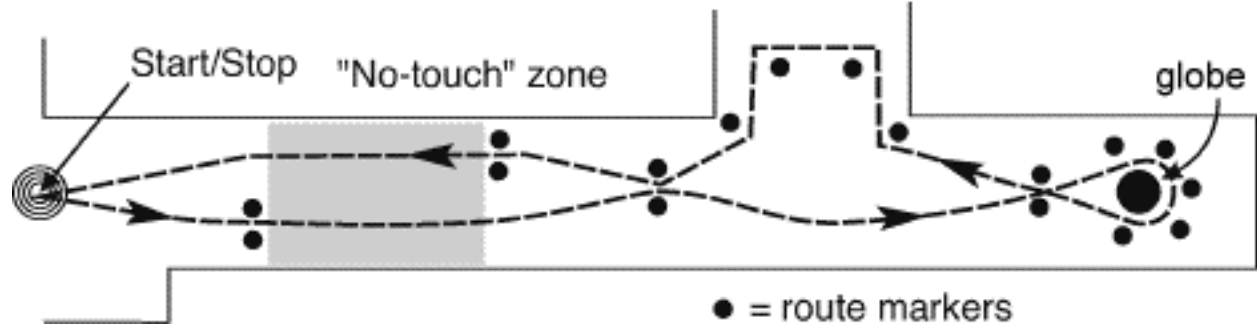
- one bowling ball (the heavier the better),
- many two-liter bottles half filled with water and capped tightly for route markers
- one broom
- stopwatches
- masking tape to mark no touch zone, start/stop, and possibly the route itself

**Procedure:** Create a course like the one pictured above using the bottles as route markers. Students are to navigate a bowling ball through obstacle course as quickly as possible, steering the ball with only a broom.

The ball starts at rest and the time trial begins when the timer says “go”. The timer stops the stopwatch when the student brings the ball to rest in the stop circle. A five second penalty is added for each bottle knocked over. Have each student run the course. Each student needs to answer the post lab questions.

**Lab performance notes:** The no-touch zone gives students a chance to see the ball in motion with no net force on the ball. Sharp turns help students to see that in addition to pushing the ball to give it motion in a new direction, the motion in the original direction must be stopped

# ***BOWLING BALL GRAND PRIX***



1. Using **words** and a **picture**, how do you get the ball to speed up?
2. Using **words** and a **picture**, how do you get the ball to slow down?
3. Using **words** and a **picture**, how do you get the ball to go in a circle?
4. Using **words** and a **picture**, how do you get the ball to make a sharp right turn?
5. Describe the motion (speed and path) of the ball in the "no-touch" zone.
6. If you don't begin slowing the ball soon enough for a turn, describe the the path the ball "wants" to take using **words** and a **picture**.

