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A.P. Lab Procedure

Projectile Motion Lab:

Items-

1. Yellow Launcher Ball
2. Launcher Apparatus
3. Two meter sticks
4. Stop Watch
5. Electric Car
6. Clamp
7. Plunger

Procedure-

1. Set the two meter stick on each side of the toy car so that the car travels in a straight path between the two sticks
2. Start the car’s front wheels at the far end of the meter stick and, using the stopwatch, record the time it takes the car to travel the length of the meter stick, stopping once the front of the car reaches the end.
3. Record the time and using the distance, 1 meter, calculate the velocity of the car. This will allow you to later calculate the time to x needed to hit the car with the ball.
4. Set up the launcher at the very edge of the science desk so that the front base of the launcher is right at the edge. The clamp will secure the launcher so recoil is negligible.
5. From various angles launch the ball out of the tube, using the stopwatch to record time to when it hits the floor, and distance traveled. Remember to measure the elevation of the lab table from which the ball is shot. Using this data, calculate the initial velocity of the yellow ball as it is shot out of the launcher.
6. Using the initial velocity of the ball, velocity of the car, height, and distance traveled, calculate the angle of which to ball needs to be shot so that it hits the car as it travels away. (Point of impact will be given by the teacher)