With Apologies to Tom Petty

Objective: The students will be able to use their knowledge of projectiles to calculate initial velocities of objects.

Place a board on the lab table with one end of the board roughly 20 cm from the edge of the lab table. Under the other end, place textbooks so that the other end is as close to 10 cm off the table as possible. Tape a meter stick to the end of the table, so that it is touching the ground perpendicularly. Starting one meter up the ramp, roll a ball bearing down the ramp. See where it hits. At about that spot, tape a piece of carbon paper such that the middle of the paper is where the ball hit.. Roll the ball bearing down the ramp again, measuring how far the ball bearing hits the ground relative to the vertical meter stick. Use the carbon paper to record the exact spot the ball bearing hits. Repeat at least 30 times. Now, increase the height of the ramp 30 cm and repeat the experiment. Find the outliers and remove them. Then, using your data, calculate the average initial velocity of the ball bearing, just as it is leaving the table, for each height. To do this, you will need 5 pieces of information, 2 in the x-direction and 3 in the y-direction.

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