

**Objective:** to investigate the motion of an object with changing velocity

**Materials:** ramp set up, ball, pennies

**Procedures:**

1. Set up ramp, measure height from table to top of ramp and record below.
2. Hold the ball at top of the ramp and mark the position of the back of the ball with a penny.
3. Have 10 people line up along the ramp each with one penny. An eleventh person will be the counter. The counter will say “go” ; the person holding the ball lets go and the counter proceeds to count “one, two, three ...” When the counter says one, the first person with a penny marks the position of the back of the ball along the ramp rail, when the counter says two the second person with a penny marks the position of the back of the ball, and this continues until the ball rolls off the ramp.
4. Leaving the pennies on the ramp rail, roll the ball down again with the counter counting at the same pace. The people along the ramp will adjust the pennies to mark the back of the ball. Repeat one more time to do final adjustments on the penny position.
5. Measure, in meters, the position of each penny (the distance from the zero position penny to each penny). Record the positions in your data table.

**Data:**

Ramp height \_\_\_\_\_ m

Time (s)	Position (m)
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

