

Set up the track. The end of the track will be inclined upwards on at an angle of 30° to 40° . (Use something like a book.) You will predict the jump distance, then place a landing point at that distance to test your prediction.

1. Record velocity (v_0) of car at launch (3 trials). (Place a photogate at the end of the launch ramp.)

a) _____ m/s

b) _____ m/s

c) _____ m/s

$v_0 =$ _____ m/s

2. Record angle of launch: $\theta =$ _____

3. Determine v_x and v_y

$v_x =$

$v_y =$

4. Calculate air time t .

5. Calculate forward distance d_x .

d_x (calculated) =

6. Place your landing point at the calculated distance. **Be sure that the landing point has the same altitude as the midpoint of the photogate.**

Adjust the landing point to where the car just barely makes the jump.

d_x (measured) =

7. Percent difference between measure and calculated d_x .