

Experiment 6

DATA SHEET

Name: _____

Section: _____

Width of tab on car = _____ m

Mass of car = _____ kg

* Remember: $\text{velocity} = \frac{\text{width of the bar on the car}}{\text{time}}$

Height (meters)	Time (sec)	Velocity (m/sec)	Stopping distance (m)	Potential Energy (Joules)	Avg. Velocity (m/sec)	Avg. Velocity Squared (m ² /sec ²)	Avg. stopping distance (m)	Avg. Kinetic Energy (Joules)
.15								
.15								
.15								
.3								
.3								
.3								
.6								
.6								
.6								

QUESTIONS

Look at the graph of stopping distance versus velocity and the graph of stopping distance versus kinetic energy: a) Which graph shows a linear relationship? b) Which shows a non-linear? c) What does this say about the relationship between stopping distance and velocity? d) What is stopping distance proportional to? Keep in mind that the origin must be considered.

- a)
- b)
- c)
- d)

Compare and discuss the potential and kinetic energies found during this experiment.

3. What formula was used to find the velocity of the car as it left the vertical portion of the track?

4. A car traveling 50 mph takes 100 feet to stop. How much distance is required to stop it at 100 mph?

5. Look at the graphs of velocity vs. height and velocity squared vs. height: a) Which graph shows a linear relationship? b) Which shows a non-linear? c) What does this say about the relationship between velocity and height? d) What is height proportional to?

- a.
- b.
- c.
- d.

6. Discuss some possible causes of error in the experiment.