



Name _____

Date _____ Period _____

Change in Momentum and Collision Time Event

In this event you will investigate the effect that *stopping time* has on *stopping force* when the *momentum changes*. Does the *collision time* affect the damage done on an object?

MATERIALS: eggs, trundle wheel, safety gear and Grandma J

PROCEDURE:

1. Listen to the instructions.
2. Accept full responsibility for your actions and reactions.
3. Clean up all carnage from the event, leaving the site better than you found it.
4. Complete the following questions with your mind engaged.

QUESTIONS:

1. How far did your thrower and catcher get from each other before the egg broke?
2. What was the longest distance achieved in the class? (in Meters)
3. What was the trick to making a successful catch?
4. What does this have to do with stopping time?
5. Compare a *sudden-stop* catch with a *gradual-stop* catch.
 - a. In which case is the mass of the egg greater?
 - b. In which case is the change in velocity of the egg greater?
 - c. In which case is the change in momentum ($m\Delta v$) of the egg greater?
 - d. In which case is the stopping time greater?
 - e. In which case is the stopping force greater?

