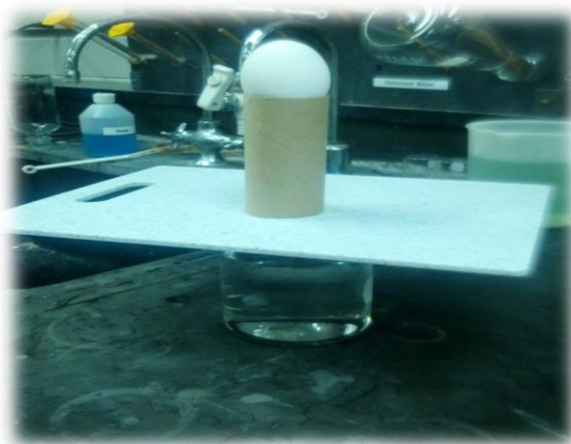




California State University of Bakersfield, Department of Chemistry

## Egg Drop



### Standards:

MS-PS2-1. Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.

MS-PS2-2. Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

HS-PS2-1. Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.

### Introduction:

*Will an egg fall onto your counter and break if placed on top of a toilet paper tube that is on a flat surface above a cup of water? Test Newton's Law of Inertia- and your personal trust skills- with this simple and easy to set up experiment.*

### Materials:

- 1 egg (boiled to avoid any possible messes)
- A toilet paper tube
- A flat surface, such as a small cutting board or small cookie sheet
- A glass of water

**Safety:**

- Always have an adult with you to help you during your experiment.
- If boiled, handle the egg with care to avoid burns

**Procedure:**

1. Boil the egg if desired.
2. Place the flat surface above the cup
3. Place the toilet paper tube on the flat surface centered above the glass of water.
4. Place the egg on top of the tube.
5. Pull the flat surface with a quick elbow motion backwards.

**Note:** The egg should land into the glass of water if done correctly.

**Additional note:** This experiment works with multiple eggs and glasses of water. Simply place the tubes and eggs above their respective glasses of water and repeat Step 5. The eggs should all fall into their respective glasses.

**Data and Observations:**

What did you see? Anything you were not expecting?

**Questions:**

Why does the egg fall into the cup of water instead of falling and breaking on your counter?

How does this experiment backed by Newton's Law of Inertia?

**References:**

1. Spangler, S. Egg Drop- Newton's Law of Inertia. Steve Spangler Science. <http://www.stevespanglerscience.com/lab/experiments/egg-drop-inertia-trick> (Accessed July 27, 2013)