



Egg Drop Contest



Purpose: To build a device for an uncooked egg to ride in, which will enable the egg to fall, unharmed from a decent height.

Objectives: The students will:

- 1) Use problem solving to solve a real problem.
- 2) Figure out what this lab has to do with momentum.

RULES: There are always those pesky rules...

1. Students may work in groups, but each student must have her/his own device.
2. The passenger is a large uncooked (and unfrozen) chicken egg, supplied by the teacher.
3. The egg must be able to be easily removed from the device for inspection by the teacher before and after the drop. You may not wrap tape all around your device before the drop to close it—find a creative way to close the vehicle without tape. Also no parachutes or egg cartons are allowed.
4. The egg must be placed in a **ziplock plastic bag** provided by the student, before it is placed in the device.
5. The egg and the device must hit the ground. The teacher will be doing the dropping, and they will drop them in **ANY** way they want!
6. Your project must be no more than 20.5 cm (8 inches) for any dimension. Over sized devices will be modified before they are dropped.
7. The **device and egg** must have a mass of no more than 0.225 kg. (ie. Weighs no more than 1/2 of a pound)
8. After all devices are dropped and their success or failure is recorded, students may volunteer to test out the durability of their devices by having them thrown down.
9. Any horseplay with the eggs in school will result in failure for the lab.

Scoring: This is a lab with a total possible score of 30 points.

Criterion	possible points	breakdown
Pre-drop analysis	10	to be graded by teacher
Condition of egg	10	10 - egg is completely unbroken 5 - egg has hairline cracks 1 - egg is noticeably broken/completely smashed
Post-drop analysis	10	to be graded by teacher

Written Components:

Pre-Drop Analysis: You must turn in a well-written **TYPED** pre-drop analysis on D-Day (drop day!) that discusses how you hope your device will work in terms of **impulse** and **momentum**. A full page labeled diagram of your device is also required with your pre-drop analysis.

Post-Drop Analysis: You must turn in a well-written **TYPED** post-drop analysis, which includes the 5 criteria below.

1. Evaluate and discuss your success/failure of your device.
2. Evaluate and discuss one success from the other devices in your class
3. Evaluate and discuss one failure from the other devices in your class.
4. Explain why the some devices failed when they were thrown down the stairwell.
5. Relate what you learned in this experiment to a real world example

Use terms like momentum, impulse, force, time, and velocity when discussing the success and failures of the eggsperiment.

HAVE FUN AND BE CREATIVE!!!