

## Egg Drop Project 2011-12 Egg Drop is on 11/17 & 11/18

Our first project will help you to learn about collisions and impacts. The goal is to create a device that will keep an egg from breaking. This is our first semester physics project, the Egg Drop! You (and a partner, if you choose) will get to build a device to hold an egg that has been dropped from the roof of the school (approx 8-9 m high). Hopefully, the egg will survive the impact.

***Warning!!! Warning!!! Warning!!!***

*You may not test your device prior to the day of dropping! Do not climb buildings, lose your balance, and fall off, breaking your arm or worse!!! This means you!!!*

### Requirements

- Your device may be no more than 15 cm wide in any dimension.
- **We will supply the eggs.**
- Your device must have a hatch that opens and closes so that the egg can be loaded in during class.
- Your device must be loaded in the presence of Mr. Murray
- It can take no longer than 30 seconds to load your egg.
- The device must **freefall** (To ignore the effects of air resistance we must alter our definition to be “ **it must hit the ground at the same time as a golf ball dropped next to it.**”)
- Originality and Creativity add points to your score.
- Your device may not contain any glass or other materials likely to shatter or injure any spectators.
- The egg must survive unbroken and uncracked until it comes to rest. (Bouncing out of your device and on to the pavement is NOT counted as a success.)

### Calculations

- We will calculate the height of the drop site; that is, the distance the egg falls, after measuring the time it takes to fall (for this calculation we will ignore the effects of air resistance).
- We'll mass the eggs before we go out to drop them.
- You will need to observe (and estimate, if necessary) the distance your egg moves from when it hits your device until it stops.
- From this initial data we will complete our calculations. The calculations for this lab will be due at a later date, after we have covered all of the concepts involved.

<b>Egg Drop Project Grading Rubric</b>			
Grade letter range depends on how many boxes you can check. A – 4 boxes, B-3 boxes, C-2 boxes, D- 1 box, F – 0 boxes			
<b>Requirement</b>	<b>Description of expectations and point values</b>		<b>Check</b>
<b>Effort</b>	Creativity (5 points)	Originality (5 points)	
<b>Conditions</b>	Meets size parameters (5 points)	Loaded in time (5 points)	
<b>Fairness</b>	Almost Freefalls (Hits the ground at the same moment as a golf ball dropped at the exact same time)		
<b>Success</b>	Egg did not crack or break		