

Egg Drop Challenge

Using only straws and some tape, you will have to figure out a way for an egg to survive a 2.5 meter fall. This is a 10 point challenge activity. You can earn the 10 points through the survival of your egg or by a writing a brief description of the physics involved.

Challenge Rules

- Materials:** 25 straws & 1 meter of masking tape & 1 egg. That's it.
- Drop Height:** 2.5 meters. (Set up is probably on the demo table.)
- Construction:** Do whatever you like using only the materials listed.
- Testing:** When you are ready, go over to the testing station. Hold your egg device above the indicated line, and drop it. Your teacher will check the egg, and you will receive the points indicated below. If necessary, your device will be cut up to verify that the egg has survived.

<i>Points</i>	<i>Egg Condition</i>
10	Egg totally unharmed.
9	Egg is cracked, but not leaking.
0	Anything else.
+2	Egg survives a drop from the 2nd floor to the 1st floor. (Checked <u>only</u> if egg survives unharmed in the classroom.)

Write-up Option

If your egg broke, you are not stuck with a 0/10 grade! Hand in a paragraph explaining the physics of why an egg may survive the fall. This is worth 10 points. To do this you have to:

- In terms of *impulse* and *momentum*, explain why a cushioned egg can survive a fall while an uncushioned egg will not.
- Make sure you correctly use the following terms:
 - Force
 - Time
 - Change in Momentum
 - Impulse.
- Exactly what does the cushioning change in the collision so that the egg survives?
- What stays the same in the collision, even if the egg survives?