



Physics Egg Drop Project 2015

NO LATE PROJECTS ACCEPTED.

See me if you have any questions.

Protective Encasing Due: Wed 12/2/15

Design Rationale Due: Wed 12/2/15

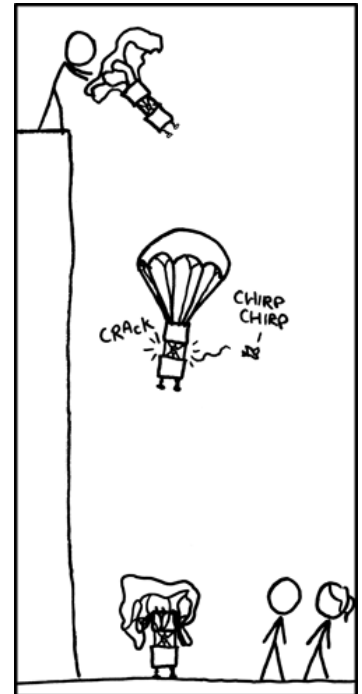
Conclusion Due: Friday, 12/4/15

Research the best structural designs for passenger compartments. Research how compartments are designed to protect their precious cargo in collisions. Keep track of all sources and submit a works cited with the design rationale.

I Protective Casing: Design a **protective casing for a raw egg** using only regular **drinking straws**, plain old office **scotch tape**, **string**, and **small paperclips** to be dropped off the second AND third floors of the A Building. No other forms of tape, string, paperclips or straws may be used. The project must be **within 12"x12"x12" before, during, and after** the fall.

II Design Rationale: Write a 1 - 2 page design rationale for your project's design and modifications. Use your understanding of Physics and your research of structural design and collisions to justify your design. The Design Rationale should be typed in 12 point font with 0.75" margins and include 2-3 small pictures or diagrams (no larger than 1.5 square inch each). Double space font. Attach the works cited for your research of structural design and collisions.

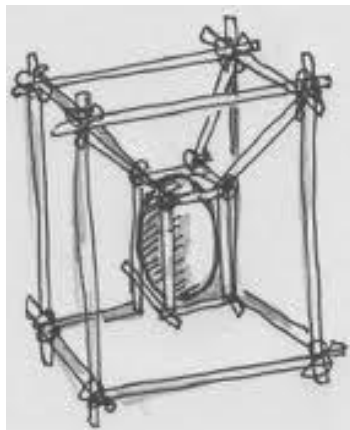
III Conclusion: Explain what trends you noticed on egg drop day. What were the most/least successful designs? Why? What category was your device? What did you learn in designing, testing, researching, and refining your model? What did you learn in seeing the different designs dropped by classmates? What is one question you now have based upon this project? What test could you design to answer your question? The conclusion should be 1 to 1.5 page typed in 12 point, double-spaced font with 1" margins. Conclusion Due the class meeting following the drop.



- Bonus points will be awarded to the lightest and heaviest egg drop designs to succeed from both drops.
- Any projects not meeting the design criteria (ie. larger than 12" cubed or improper materials) will automatically earn zero credit for their drops. Reminder: Protective Casing cannot expand beyond 12"x12"x12".

- All projects will be dropped from each height (2nd & 3rd floor) once.
- I WILL SUPPLY ALL EGGS. I will have extras in case any break.
- The teacher will inspect all eggs after each drop.
- Zero points are earned for cracked or broken eggs on the respective drop.
- The project must land directly below the release point on the tarp. (No sailing.)

- No tape may be applied to any eggs directly.
- Eggs may not be hard boiled or tampered with in any way.
- Materials may be physically changed (cut, bent, etc.), but not chemically altered in any way.
- No late projects will be accepted.
- Use marker to label your name, period, and which way is up on your project.
- No Boba straws. No packing tape. No rope. See me if you have *any* questions regarding permissible materials.



- Student must be able to remove egg from Protective Casing and hand to teacher *within 20 seconds while staying on the tarp.*

Points: 45 Total

- Building 10 Points
- DROP 1(Second Floor): 10 points
- DROP 2(Third Floor): 5 points
- Design Rationale: 10 points
- Conclusion 10 points