

Egg Drop Activity

The “Yolks on You” egg company has had problems with broken eggs when transporting them from the farm to the store. Your team has been hired to solve this problem by designing and constructing a cargo crate to protect a raw egg from breaking when the crate is dropped from a height of 3 meters.

1. Teams may use all or part of the following materials:
 - a. One 8” x 11” sheet of paper
 - b. 15 straws
 - c. 15 popsicle sticks
 - d. 100 cm of string
 - e. 100 cm of masking tape
 - f. 5 rubber bands
 - g. 1 egg
2. One day will be used for inquiring and analyzing possible design ideas for your cargo crate by comparing the egg to other fragile cargo that is transported.
3. One day will be used for developing 4 potential thumbnail ideas that will be evaluated by the group to come up with the final design.
4. One day will be used for creating the solution and evaluating the success of your solution.
5. Following days will be used for re-evaluation and retesting.

Lab Write-Up

You will be evaluated on your lab write-up. Your report is expected to have the 6-steps of the scientific method and cover the 3 parts of the Engineering Standards as listed below.

- A. Developing ideas
 - a. **Research:** What choices did your group come up with?
 - b. **Hypothesis:** what design did your group choose and why did you chose that design? What requirements are necessary to build your design? (Final group drawing with labels and measurements.)
 - c. **Data:** What is the table group number? How long did it take the egg to drop? How fast did the egg fall? Did the egg break? What are 3 other designs and did they survive?
- B. Creating the solution
 - a. **Procedure:** what are the detailed steps to making your egg drop.
 - b. **Write-up:** Does your write-up include all the required parts to make a successful test for an egg drop device?(First 5 steps)
- C. Evaluating
 - a. **Conclusion:** how well did your design do compared to what you were hoping for and the rest of the class?
 - b. **Conclusion:** how could your design be improved?

- c. **Conclusion:** What designs of other table groups were successful and what features did they have that enabled them to be successful?
- d. How did the second build improve your understanding of designing an egg-drop device?

(For reference)

1. Problem-What are you trying to prove?
2. Hypothesis- Show thumbnails of the group's ideas with pros and cons of each and represent which idea is your plan and why you chose it.
3. Materials- List what you used.
4. Procedure-Includes a step-by-step plan that outline how your design will be built. If any changes or adjustments are made to your design, they must be explained in detail.

Also, include, in detail, how your design was tested.
5. Data-A table of results.
6. Conclusion- should include the Evaluating section from above.