

Egg Drop Project 2006-07

Who will build the lightest transport and still survive?

Objective:

NASA is looking to design a space vessel that will transport a human to Mars and safely land on its surface. The cost of using the actual building materials is too great so your design team has been hired to build a model transport vessel with building materials that have similar properties as the actual materials. A jumbo egg will be used to simulate the human. Your goal is to design a vessel that will keep the egg from cracking when dropped from the balcony in the gym.

Vessel Building Materials

- 1 gallon plastic milk jug
- 1 raw jumbo egg
- 6 sheets of paper
- 1 foot of duct tape

Rules

- The vessel must be made only with the materials provided. You may change them as you see fit.
- Your team will allowed 2 eggs, 3 jugs, 18 sheets of paper and 2 feet of tape for design & testing.
- The egg can not have anything physically attached to it.
- I must watch you place the egg in the vessel and remove it after the drop for inspection.
- The vessel cannot exceed 13" in any direction before the drop so it will fit in the launch vehicle.
- Find the mass of your vessel before dropping and measure the height and time of the drop.

Scoring (50 points for drop)

- A – Egg survives the fall from the balcony intact 1st try
 - B+/A- – Egg survives the fall from the balcony intact 2nd try
 - B – Egg survives the fall from the ceiling intact
 - C – Egg survives the fall from the desk intact
 - F – Project not completed or done
- ***Points will be deducted for rule violations.***

Project Report (20 points)

In the newspaper article format discuss the success/failure of your drops. What worked in your design and what didn't? Would you make any changes in your design if you had to do this again? Also include the following data for the engineers. Explain how you arrived at your answers.

	Mass	Height	Time	Vf	Force	a - acc	p – mom.
Balcony							

Timeline

We will spend 2-3 class days handing out materials and working on the design. Drop day will be announced at the start of the project. This project will most likely require design and testing time outside of the classroom.