

Durfee Engineering – Principles of Engineering

Final Project – Egg Drop

Objective: To successfully drop a package that contains a RAW egg from a predetermined height without breaking the egg.

This is an individual project to be constructed not just during class time but outside of school as well. You will design something that is the lightest weight possible following all the design constraints contained within this project. The project must be durable enough to protect the egg from breaking as a result of the drop.

Constraint & Rules: Your egg package design must fit on a regular sized 8 ½ x 11 sheet of paper.

Only raw, store bought chicken eggs – size large – may be used. Your design must not include changing the egg in any way. (No taping the egg, no nail polish, shellac, overnight soakings in vinegar and no hollow eggs, etc, etc.) Transportation of the egg must be done in a zip lock plastic sandwich bag. The package design will allow for the egg to remain in the bag during testing.

You must supply the egg to be used in testing.

You must be able to see some part of the egg at all times, in other words you may not completely cover the egg with any material. The design must allow for the egg/bag to be put in and removed easily. Having to remove tape or glue is not allowed. Think seat belts.

If at all possible don't spend any money on this project. Use empty containers, padding, etc normally found around the home. You are allowed to ask anyone (except Mr. Falcon) for any and all material. Having performed this project before, obtaining free material and containers should be easy if you ask around.

All projects will be weighed with the egg in them prior to testing.

Any design is acceptable except for one that includes any form of a parachute. You can include in your design “wings”, etc, etc to slow the fall but you are not allowed to include a parachute.

After testing, the following will be calculated using the time recorded.

Velocity = Distance/time (Meaning how fast it was going when it hit the ground)

Report:

Cover page including student name and project name

Full scale drawing on an 8.5 x 11 paper.

Full parts list.

Velocity calculations

Detailed explanation of what worked and what did not work, design and material wise, following the test.

If given a second chance what would you have done differently to improve you design.

Rubric

	5	3	1
Drawing	Completed with details	Drawing done, lacks details	Not done
Parts list	Complete list done	Parts in project not listed	Not done
Velocity	Calculated with correct numbers, answer is correct	Numbers are wrong or Answer is incorrect	Not done
Explanation	Full and complete	Missing information	Not Done
2 nd revision explanation	Full and complete	Missing information	Not done