

Annual GFHS Egg Drop Competition

Name _____ Period _____

When: _____
(tentative, weather permitting)

Where: **GFHS Stadium (off the West bleachers)**

Teams: Teams are **NOT** allowed. The write-up must be individual work so working solo is your only option.

Scoring: The average descent time will be multiplied by the mass of the capsule. The low score wins.

Timing: 10 times will be averaged using 10 stopwatches.

Capsule: Will be no larger than 10cm X 10cm X 30cm. The capsule must fit into the measuring device. Parachutes and strands are considered length. The capsule can not be **STUFFED** into the measuring device. The mass may not exceed 400g. The capsule must be constructed not simply picked up and used.(cans, containers, etc. must be completely modified)

Rules: **Raw chicken eggs will be provided the day before the competition.** No permanent attachments to the egg will be allowed. The egg will be handed out by the judge and must be handed back to the judge. All eggs must be placed into a plastic bag to prevent egg splotches. The capsule must be loaded and ready the day before the competition. Broken eggs are disqualified.
The event judge (Mr. Logan) has the final judgement!

Grade: **Each student** must complete a one page explanation of the parts and how they work. A labeled blueprint must be drawn. A prediction sheet and a conclusion sheet must be completed. A one page grade justification must be completed.



Egg Drop Prediction Sheet

Show all work, including formulas, and explain each prediction!

The distance of the drop is 9.8 meters (Really!)

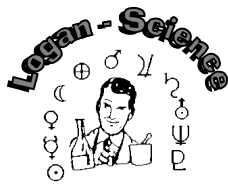
1. Predict the mass of your capsule, in kg. Why?
2. Predict the volume of your capsule, in cm^3 . Why?
3. Predict the drop time of your capsule, in seconds. Why?
4. Predict your score in the competition. Why?
5. Explain how your capsule will work as it is dropped.
6. Predict your capsule's acceleration, in m/s^2 . Explain.
7. Predict your capsule's initial velocity, in m/s . Explain.
8. Predict your capsule's final velocity, in m/s . Prove it.
9. Predict the force, in kg X m/s^2 of your capsule at impact. Prove it
10. Will your egg survive the fall? Explain why in detail.

Blueprint Rough Draft

include straight lines, labels, material names, and sizes with units

Blueprint Final Draft

include straight lines, labels, material names, and sizes with units

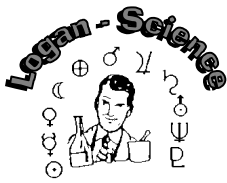


Egg Drop Conclusion Sheet

Show all work, including formulas!

The distance of the drop is 9.8 meters (Really!)

1. What was the mass of your capsule, in kg.
2. What was the volume of your capsule, in cm^3 .
3. What was the drop time of your capsule, in seconds.
4. What was your score in the competition.
5. Explain how your capsule worked as it is dropped.
6. What was your capsule's acceleration, in m/s^2 . Explain.
7. What was your capsule's initial velocity, in m/s . Explain.
8. What was your capsule's final velocity, in m/s . Prove it.
9. What was the force, in kg X m/s^2 of your capsule at impact. Prove it
10. Did your egg survive the fall? Explain why in detail.



Egg Drop Reflection & Grade

You are to write a 5-paragraph essay.

Paragraph 1: Introduction

Explain what the egg drop project/competition was.
Explain what things you had to know to complete the project.
Explain how your capsule was supposed to work.
Explain your personal opinions about the egg drop project.

Paragraph 2: Grade Your Essay = 10 Points

Was your essay a full page?
Did it explain your project in detail?
End this paragraph with a grade out of 10 for your essay.

Paragraph 3: Grade Your Blueprint = 10 Points

Did your blueprint have labels, material names and lengths?
Was your blueprint drawn neatly and with enough detail?
Could another person construct your capsule using your blueprint?
End this paragraph with a grade out of 10 for your blueprint.

Paragraph 4: Grade Your Capsule = 10 Points

Was your capsule constructed and dropped?
Was it creative and well constructed?
What happened when it was dropped?
End this paragraph with a grade out of 10 for your capsule.

Paragraph 5: Conclusion and Final Project Grade

Give a final statement explaining the planning and the work you put into designing, constructing and completing the egg drop project.
What went well with your project?
What would you do differently next time?
Did you complete the prediction sheet? State the grade out of 10.
Did you complete the conclusion sheet? State the grade out of 10.
With 10 for the essay, 10 for the blueprint, 10 for the capsule, 10 for the prediction sheet and 10 for the conclusion sheet, end this paragraph with your total for the egg drop project out of 50 points.