

**TOP SECRET**

# **MISSION CODE NAME: EGG DROP**

If you are reading this document you have been selected to participate in a secret project for the United States military. Within the next month, a specially trained Navy Seal Team will attempt to place several small, state-of-the-art surveillance cameras onto the property of a suspected terrorist training camp in a foreign country. The cameras will be used to secretly record conversations and movement on the property that U.S. satellites cannot pick up. The problem is getting the cameras *onto* the property. The only way of getting them there undetected is for the Navy Seal Team to get close to the camp and then throw the cameras over the large wall that surrounds the property. Their spy on the inside will collect the cameras and take care of the rest. However, the only way of getting each camera over the fence without breaking it is to design and build a container that will hold the camera and protect it as it hits the ground on the other side. This is where YOU come in.

Your mission is to design and build a container that will protect each camera. The military would like you to test the containers by dropping them off the roof of a building – Thompson Brook School. Since the high-tech cameras are very expensive, you will be using uncooked chicken eggs in place of the cameras. The theory is that if an egg survives the fall, the camera will, too. This is an extremely important mission and will only succeed if the containers are well designed and built. Good luck – the United States government is counting on you.

## Mission Procedure

- 1) Get one fresh, uncooked chicken egg, any size.
- 2) Construct a container that will protect your egg. The container must be small to avoid detection – no larger than 10 CM x 10 CM x 10 CM. You may use any supplies that you want (except peanut butter), but the container must open easily to take the egg in/out. Since the size is restricted, parachutes will not work because I will not give them the opportunity to open. You must provide the egg, but do not use the same egg on the day of the actual Egg Drop because previous stress fractures could make it weaker than your original trials.
- 3) The container will be dropped off the highest point of the roof at Thompson Brook School. (See photo below.) Your job is to prevent the egg from cracking or breaking in any way.



## Documentation

You will be graded on five main components:

### **1) Did your egg survive?**

It would be great if the egg survives without even a tiny break, but even more important that the egg does not turn into a pool of yellow mush.

### **2) How well did you document/record your egg drop trials?**

You need to show that you actually tested your container(s) at least three times. You must document each trial (that's when you test the container yourself) whether you change your container or not.

### **3) Was the container the correct size?**

The container should be no larger than 10 CM x 10 CM x 10 CM.

### **4) Did you draw an accurate picture (or provide a photo) of your container?**

You should either draw a neat picture (using a ruler) of your container or take a photo (or photos) showing your container. All the materials used should be labeled neatly with arrows showing where they are located. Also, the dimensions (the measurements) of each side of the container should be shown.

### **5) Did you provide a list of materials you used to build the container?**

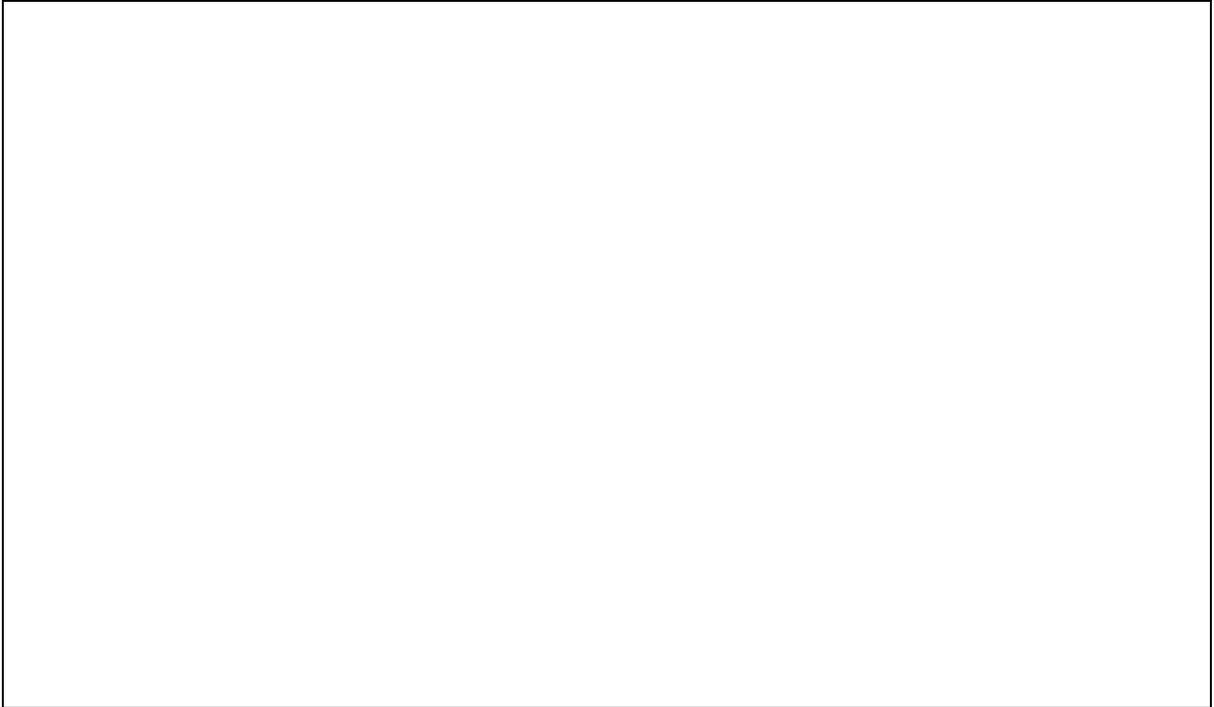
An additional and complete materials list should be separate from the drawing/photo labels.

# How'd I Do?

|                             |   |  |   |
|-----------------------------|---|--|---|
|                             |                            |                  |  |
| Condition of Egg            | The egg survives unharmed   | The egg cracks or breaks, but doesn't make a complete and utter mess                               | No egg should ever endure that much cruelty   |
| Drawing or Photo            | Your drawing or photo is neat, accurate, shows all the dimensions, and all the materials are labeled neatly | Your drawing or photo is mostly accurate, doesn't have all the dimensions or labels, or isn't neat | It would be difficult to recreate your container using your sketch                  |
| Materials List              | All of the materials are clearly listed on a separate list from the drawing or photo                        | The materials are all listed, but not on a separate list from the drawing or photo                 | What materials?   |
| Evidence of Egg Drop Trials | Egg Drop Trials show specific evidence of testing, problems encountered, and solutions                      | Egg Drop Trials show some evidence of testing, problems encountered, and solutions                 | Egg Drop Trials provide little to no information                                    |
| Cover Page                  | Cover page is neat, includes a title, your name, date of Egg Drop, and a photo or drawing                   | Cover page is missing some of the required information   | Cover page is either missing or is done with very little effort                     |
| Container Size              | The container is no larger than 10 CM x 10 CM x 10 CM   | The container is a smidge over the limit   | Your ruler is obviously broken  |

Although the mission is to keep the egg from being destroyed, you can still get a very good grade on the project if the egg breaks, assuming you do an excellent job on the rest of your documentation.

**Egg Drop Trial #** \_\_\_\_\_



*Drawing or photo of this trial*

Describe this trial:

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Did the egg survive?

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What worked well with this trial?

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What did not work?

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What will you do to change the container for your next trial?

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