

# Bungee Jumping Egg

CHALLENGE: Design a safe, exhilarating bungee jump for a plastic, water filled egg – a jump in which no one is injured, the free fall lasts as long a time as possible, and the bungee jumper comes as close to the ground as possible without touching it.

GUIDELINES (and HINTS):

1. HINT: This lab will be done in two phases.

**Phase One** will be done in the room with a shorter length of cord so that you may determine the necessary information need for a safe, yet exhilarating bungee jump. Get the shorter length from the bag on the lab station. Cut additional short lengths if the ones in the bag run out. Return it when you are finished with it.

**Phase Two** will be done over the balcony after you have experimented to determine the length of bungee cord you need for the ultimate bungee experience.

2. Guess and check is not allowed. Full documentation of the determination of the length of your bungee cord must accompany your lab report.
3. The bungee cord is the completion rubber that you used to fly the planes. A sample of an “old” set up is on the demo desk. It is not for use.
4. The egg is a plastic Easter egg. Be sure and get one without holes.
  - a. Fully submerge your egg in water to completely fill it with water and then
  - b. securely package the water filled egg in a zip-top sandwich bag. Tape the sandwich bag as an extra precaution against leakage. This will safely simulate a fragile egg and will allow you to know if your egg hits the floor. (Water will be in the bag if it does it.)
5. When ready, use pulley cord to very carefully secure your egg to your bungee cord so that it cannot and will not fly off. You can also very carefully attach a short length of pulley cord to the other end of your bungee cord that you will have something to hold on to when you drop your egg.
6. Video at floor level your egg's drop to show how close it comes to the floor.
7. The lab report will consist of two parts – formal lab report and video. Everyone must submit their own lab report and calculations. One video may be submitted for your lab group.