

DESIGN CHALLENGE

EGG DROP

Introduction

- When creating football helmets, bicycle helmets, and even designing cars, engineers must consider the impact of force to the brain and body.

Design brief

- **Problem:** Protecting the brain and body is critical when playing football, riding a bike, or driving a car. How can you create a protective container that will keep the athlete or driver safe?
- **Criteria:** Design a container that will keep the athlete or driver (egg) from cracking or breaking when dropped from the 2nd story overlook.

- **Constraints:**

- The container must be no larger than 6 inches high, 6 inches long, and 6 inches wide (6 in. X 6 in. X 6 in.) when held, but may expand after being released.
- The entire structure with the egg included must not have a mass greater than one pound
- The egg must be able to be removed from the container in less than 2 minutes.
- For janitorial considerations, the egg must be placed in a ziploc bag before testing.

Materials Available

- Small box
- 4 Rubber bands
- 12” Tape
- 1 square Fabric
- 2 Cups, any size
- Eggs (hard boiled for building, raw eggs for the actual drop)
- 12” String
- Egg carton (no more than two egg “holes” to be used)
- 5 cotton balls
- 3 brads
- 4 paper clips
- Ruler*
- Stapler*
- Scissors*
- Hole punch*
- Crayons, markers, pencils, pens* **To help with adhesion, not to be used as part of design*

SHARE YOUR SOLUTIONS

- What do you think is the best feature of your design? Why?
- What are some things everyone's designs have in common?
- What would you do differently if you had more time?
- What were the different steps you had to do to get your project to work the way you wanted?