



## **EGG DROP CHALLENGE** Drop an uncooked egg from 10 feet without breaking it.

### **Materials**

- Straws
- Tape
- Cardboard
- Tissue paper
- Sponges
- Other household items
- Egg
- Paper and pencil

### **Procedure**

- Using your materials, you will design a device that will protect your uncooked egg from a 10 foot drop. Decide what kind of structure you want to build to keep your egg safe. Write down the reasons you think your design will or won't work, and make a prediction about what will happen when you drop your egg.
- Use your materials to build a structure around the egg. You may want to build something that pads the egg, or something that will make it fall slower. Be creative with your design!
- When your structure is complete and the egg is in place, have an adult help you find a place to test your structure. You may want to go outside. Have an adult stand on a step stool - you want to drop the egg from a height of 10 feet.
- Outside, have an adult stand on a chair and drop your egg from a height of about 10 feet and observe what happens to the structure. Check to see if your egg remained intact or if it broke. Write down what happened, and why you think it did or didn't work.
- Think about why certain designs worked and others didn't. Think about ways scientists and engineers would use this information in real life.

### **Results**

You have designed a structure that keeps the egg from breaking even when dropped from a 10 foot height.

### **Why?**

Your structure protected your egg by absorbing the energy from the impact. The more energy your structure could absorb, the safer the egg inside would be. Engineers use this concept when building cars by creating something called "crumple zones." When a car crashes, parts of the car absorb the energy of impact and crumple. This keeps the energy from reaching the driver, which keeps them safe. Engineers have to understand the way energy moves and how materials react when put under pressure to design things safely.