

## The Great Egg Drop Challenge

*Can you design a package that keeps an egg from breaking when it is dropped the height of kitchen worktop?*



Although it's important not to use too much packaging, some packaging is necessary. If certain kinds of products are not packaged, they will go bad or break while being transported. The trick is to use packaging that is strong but sustainable - packaging that won't harm the environment - and to use as little packaging as possible to get the job done.

**Aim:** to make a sustainable package that is strong enough to keep your egg in one piece while using as little packaging as possible.

### **Equipment:**

- Raw egg
- Newspaper
- Masking tape
- Paper and pencil to record process and results.
- Kitchen worktop to drop egg from.
- Timer
- Some of the following materials: cardboard, cotton, toilet paper, socks, glue, straws, plastic bags, balloons, material scraps.
- Scales

### **Instructions:**

1. You will be designing a package that will keep your raw egg safe, even if you drop the egg from the kitchen worktop.
2. You may work with a sheet of newspaper and tape. You may also choose from any of the materials listed above, if you have them. You may not use any materials that are not on the list. You also may not change your egg in any way, for example, you may not paint your egg or coat it with anything.
3. Time yourself. You should start the timer after you have brainstormed your idea but before you begin putting your package together. Give yourself 10 minutes the first time you try.
4. Brainstorm what you will do to keep your egg safe. Which materials will you use? How will you put your package together?
5. Once you've decided on your design, gather the materials. Now turn on the timer and start building.

6. Before you test your package, weigh what you've built (if you have scales). It's better not to use too much packaging, so the best kind of package is one that does its job without using material you don't really need. Make your package both strong and lightweight.
7. When you're ready for the drop, go to the kitchen worktop. Make sure you cover the floor with newspaper or a drop cloth.
8. Now drop your package and check it out. Did your package keep the egg safe?
9. You could see if your egg would survive a greater drop. For example, a second story window or using a ladder. **SAFETY:** if you try this option remember to have adult supervision.

**Report:**

1. Take a photograph of your experiment.
2. Draw a diagram of your design.
3. Explain why you think your design will protect the egg from breaking.
4. How much did your design weigh?
5. Did your egg survive the drop from the counter? Or from a second story window?
6. How could you improve the design to make it stronger and more lightweight?
7. Why is it important to understand how things are packaged?

**Wrap Rap:**

Why are eggs packaged by the dozen? The concept of selling things by the dozen comes from Roman times. The Romans liked to package dozens together because a dozen was so easy to divide and share. They could split the dozen into halves, quarters, thirds and even sixths. The word "dozen" comes from the French word "douzieme" which means "twelfths".

Name \_\_\_\_\_

Report: The great egg drop challenge. (1/2)

Draw a diagram of your design.



Explain why you think your design will protect the egg from breaking.

Name \_\_\_\_\_

**Report: The great egg drop challenge. (2/2)**

How much did your design weigh?

Did your egg survive the drop from the counter? Or from a second story window?

How could you improve the design to make it stronger and more lightweight?

Why is it important to understand how things are packaged?

Conduct an egg drop

<https://buggyandbuddy.com/stem-kids-egg-drop-project/>

