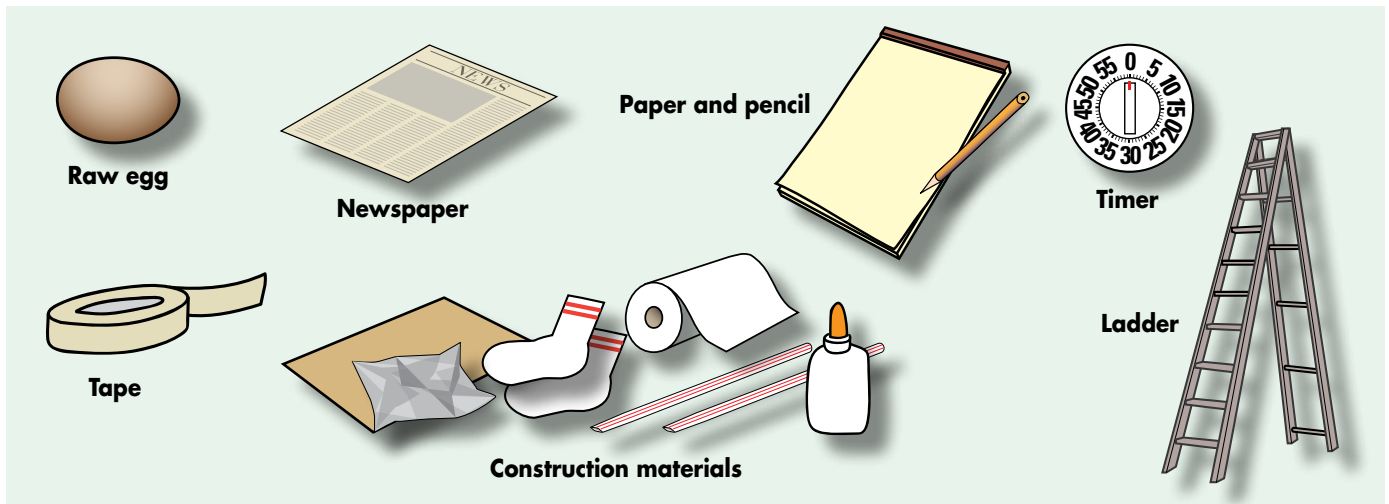




Egg Drop Challenge

Find What You Need...

- Raw egg
- Sheet of newspaper
- Masking tape
- Some of the following materials: cardboard, cotton, toilet paper, socks, glue, straws, plastic bags, balloons, material scraps
- Paper and pencil to record process and results
- A ladder or a second-story window to drop the egg from
- Timer
- Scale (optional)



Can you design a package that keeps an egg from breaking when it is dropped from 10 feet in the air?

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

Wrap Rap:

At the Ontario Science Center, scientists were able to stand a 200-pound person on an egg without breaking the egg. How did they do it? The domed shape of the egg makes the arch on top incredibly strong. The dome pushes out the weight so that the weight is spread out evenly down all sides of the egg and into the floor below. When you spread out the weight evenly, it's much easier to hold up.

Activity Instructions

1. You will be designing a package that will keep your raw egg safe, even if you drop the egg from 10 feet in the air.
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 a scale). 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 a second story window, or climb up a ladder. If you are dropping the egg inside, you will want to cover the floor with newspaper or a drop cloth. Make sure you have an adult with you either for climbing up the ladder or for dropping things out the window.
8. Now drop your package and check it out. Did your package keep the egg safe?

Conclusions

Remember Humpty Dumpty? He might never have broken into a million pieces if he had been sustainably packaged. Your challenge was to create a package that was strong enough to keep your own personal Humpty Dumpty in one piece while not adding over-packaging to poor Humpty's environment. What happened? Were you able to do it? Try this again using different materials. See how lightweight you can get the package to be while still protecting the egg. Try dropping it from a different height (make sure an adult is with you when you climb). Try doing it in 5 minutes instead of 10. How high and how low can your egg go?

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".