

EGG DROP CHALLENGE - ACTIVITY GUIDE

What materials will work best to protect an egg when dropped from high up? Will it be cotton? Newspaper? Something else? Follow the engineering design process below to find out!

MATERIALS:

- Two or more eggs
- Plastic bags
- Cardboard box or protective container
- Tape
- Engineering design notebook
- Something to write with
- Materials for stuffing (e.g., newspaper)
- 100% cotton balls

PROCEDURE:

Step 1 (Define the problem): Eggs are fragile and break easily when they are dropped. Let's create a plan to protect our egg using different household materials and see which one works best when our egg is dropped from high up!



Step 2 (Imagine & Plan): Gather a few materials you think might protect our egg when it's dropped from high up (higher than 10 feet). Create a sketch of your idea in your engineering design notebook.



Step 3 (Create/Test): Place your egg in the plastic baggie, remove air in the baggie, close it up, and put this into your cardboard box. Stuff the surrounding area with your first test material. Once you have your egg secured, tape the container closed and head to your test site to conduct your first egg drop.



Step 4 (Create/Test): With your egg secured, drop the container from high up. Remove the tape and open the container to discover the results. Record your results in your engineering design notebook.



Step 5 (Improve Design): If your first material didn't safely protect your egg, think about why this material didn't work. What other materials do you have that might work better? Try out those new materials and place them and your egg into your protective container. Don't forget to put your egg in a baggie! Then, sketch out your new design in your engineering design notebook.



Step 6 (Re-Test): Head to your drop site one more time. Make sure your container is taped up. Drop it from the same height as before and discover your new results!



Step 7 (Record your results): Compare your second material results to your first test results. Did the new materials work better or worse than your first design? Why? If the egg broke on both tests, continue to iterate your design until your egg is protected from the fall. Record your final thoughts in your engineering design notebook.

