

Naked Egg Drop

Name _____

Date _____

DIRECTIONS: Follow the Scientific Method to create a catching device out of ten pieces of paper and a meter of tape that will catch a raw egg when dropped from increasing heights starting at 3 feet without letting the egg crack.

Select a **QUESTION** to Investigate

- From what height can you drop an egg and catch it (with a device) without it cracking?

Make a **PREDICTION** or hypothesis

- I think that I will be able to drop my egg from _____ feet into my catching device without it cracking.
- Draw a diagram of your egg catching device, labeling the part where the egg will be caught:

Develop a **PROCEDURE** to test the hypothesis

1. Think about the design of your catching device. What is its shape and size? What do the walls look like around it? How does your catching device slow down the egg before it hits the floor?
2. Very carefully, try to construct a catching device that will catch a falling egg without letting it crack. Follow these rules:
 - You are only allowed to use ten pieces of paper and one meter of tape. No other materials are allowed.
 - Nothing can be attached to the egg during the experiment.
 - If there is a crack in your egg at any time during the experiment, you are automatically eliminated from the competition. (Even if you broke it in between drops).
 - In between each trial, you are allowed to fix your catching device, but you are not allowed to change it in any way.
 - The teacher has the right to add any rules to this experiment at any time.
3. Once your design is built, wait patiently for the others to finish.
4. We will do the experiment together as a class.

Record the RESULTS in written and/or picture form

- When I dropped my egg from _____ feet, it cracked, but I was able to drop my egg from _____ feet without it cracking. Since I predicted that I could drop my egg from _____ feet without it cracking, I was _____ feet away from my prediction (subtract your prediction and your actual total).

State a CONCLUSION that tells what the results mean

- Since I discovered that I was _____ feet away from my prediction, I feel that my hypothesis was CORRECT / INCORRECT. (It's good to be incorrect!!!!!!!)

Brainstorm a list of QUESTIONS and SUGGESTIONS

- What do you still wonder about? _____

- What would you do differently if you were to do this experiment again? _____

- What other materials would make this experiment easier to stop a falling egg from cracking? If you were allowed to use any materials that you wanted to, what might you try?

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Materials

- 1 uncooked egg
- 10 pieces of paper
- 1 meter of tape

Key Concept

A falling egg has inertia due to gravity. Once the egg is released, gravity accelerates it in a downward direction until it is stopped by another force. If you drop an egg from four feet onto a tile floor, it is going to crack. In our case, the only way that the egg will stop without cracking is if we gradually slow its speed down.

Procedure

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2. Very carefully, try to construct a catching device that will catch a falling egg without letting it crack. Follow these rules:
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Experiments to try

- Try making a catching device out of other materials such as:
 - Packing peanuts
 - Water
 - _____
 - _____
 - _____
- Try making something that you drop with the egg inside it – be able to take it out after every drop without taking it all apart (have an access door).
- Try dropping a hard-boiled egg. Does it crack at the same height as an uncooked egg?