

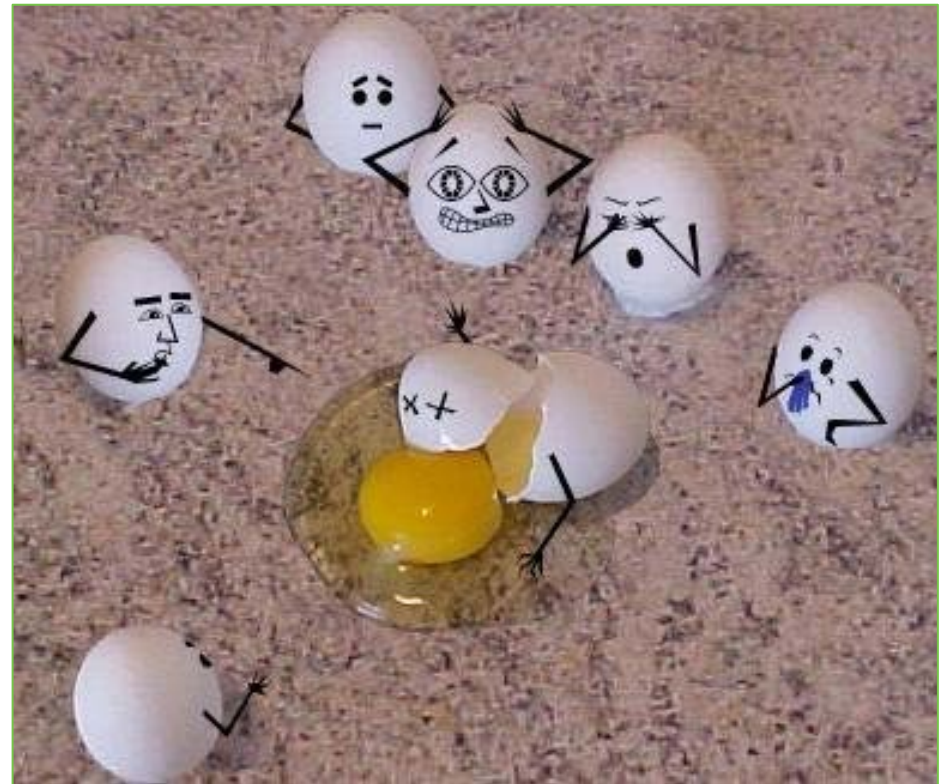
let's talk  **science**
partnership program

The Classic Egg Drop Competition

Agenda

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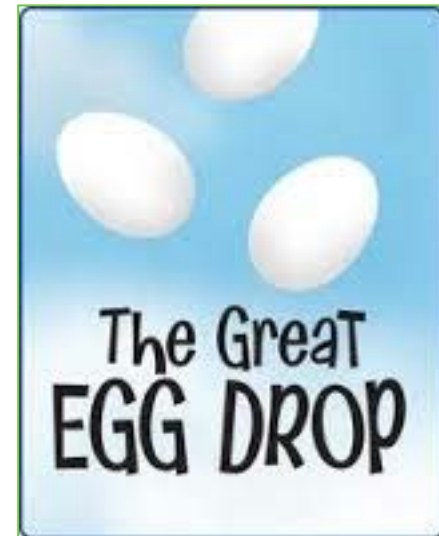
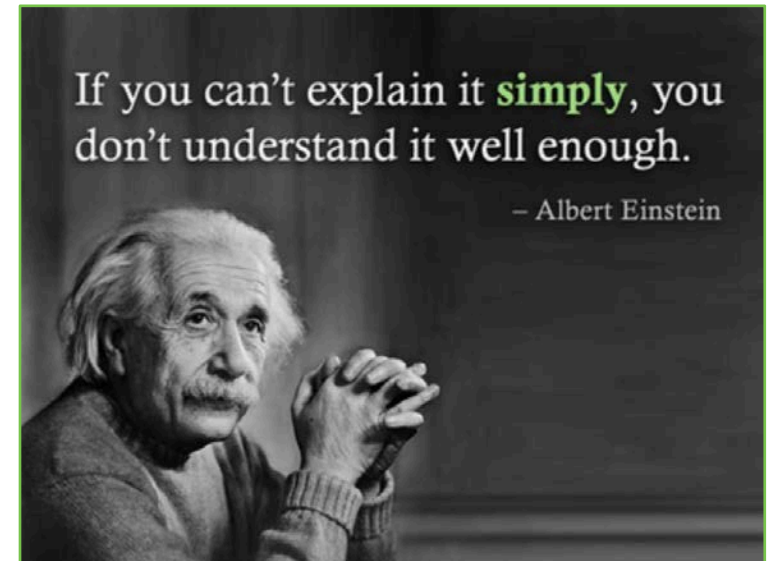
- Introduction
- What's the “Egg Drop Experiment”?
- Packaging Considerations
- Your Materials...
- Results?
- Conclusion



Introduction

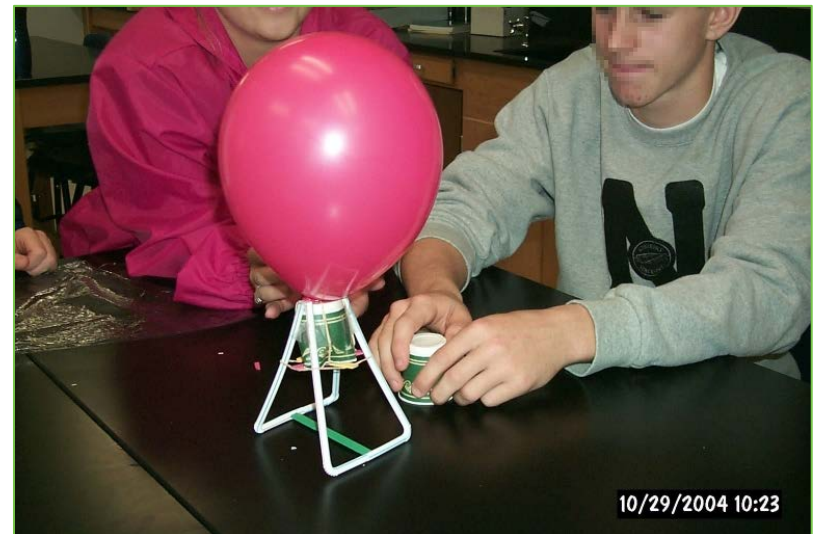
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- What do scientists do?
- Where are they?
- What types of scientists are we?
- How does this type of science affect you?



What's the Egg Drop Experiment?

- A classic science project!
- *Can you design a system that will protect an egg from a fall?*



Packaging Considerations...

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- As something falls to the ground, it speeds up and gains **kinetic energy**.
- This energy has to be absorbed by the structure you create to protect the egg.



Your Materials...

- 6 tongue depressors
- 6 paper clips
- A plastic bag
- 2 pipe cleaners
- 6 styrofoam chips
- 6 popsicle sticks
- 4 straws
- 4 rubber bands
- Some string
- A bottle of glue
- 2 eggs (1 for a practice run, and 1 for your final test!)



Build Away!

- You have 20 minutes to come up with and build your structure!
- Try to do all the gluing right away so that your structure is dry and strong when you drop it.



As the glue dries...

- Why are these sorts of experiments important in science?
 - Testing theory!
 - Packaging!
 - Protect, preserve, provide information, to contain/hold things, and to recycle.
- What are some other types of packaging you would have liked to have used?



The DROP!

- Find a safe place to drop your egg structure from.
- We will do this one at a time!



Finals?

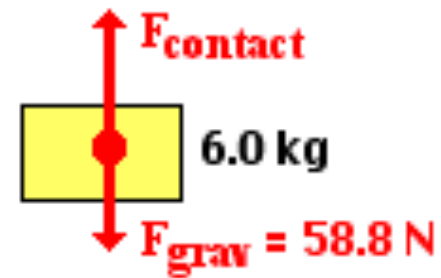
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- Can you think of any good ways to do a tie-breaker?



Results?

- Who won? What worked well for their structure?
- What are the forces acting on the egg as it falls?
- What are the forces that act on the structure when it hits the ground?



Results (cont'd)

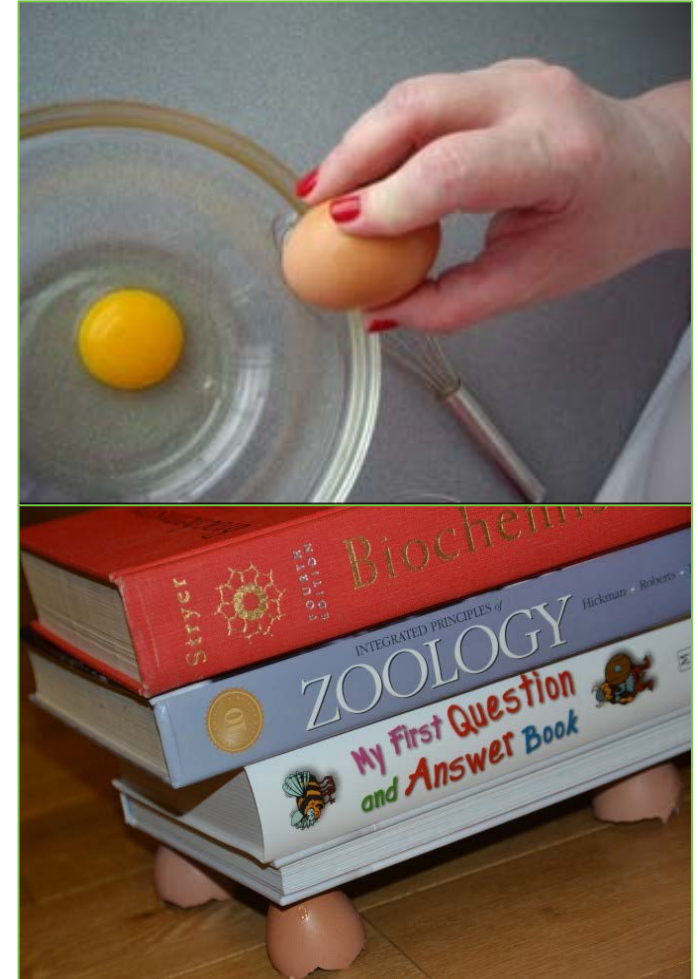
- How can you control the forces that cause the egg to break?
- What are common characteristics of the materials that protected their eggs?
- Do you think layering materials will play a role in protecting the egg?



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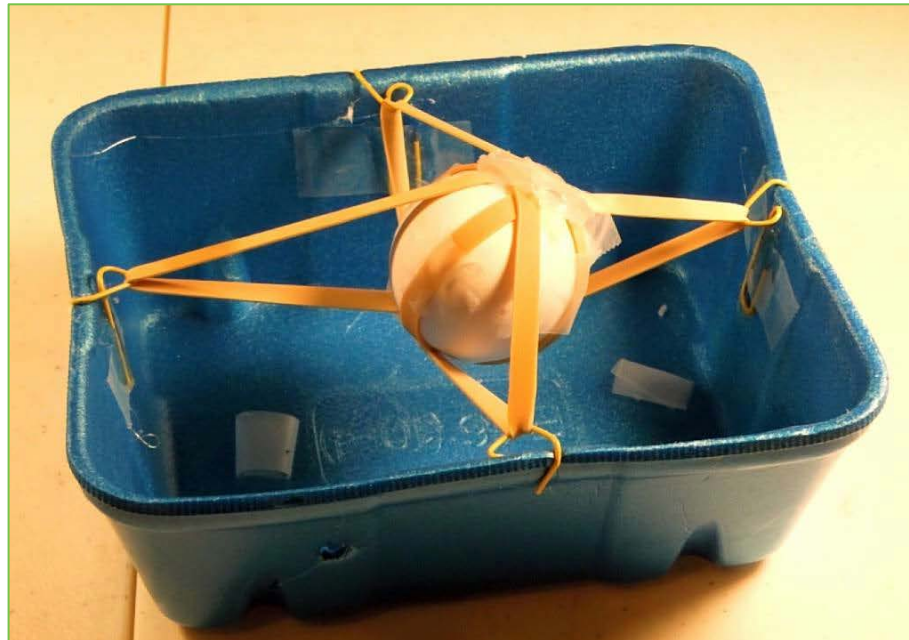
What type of problem **science** is this?

- Is this a “shock absorption” problem, or a “springing problem”?
- Think of a car’s shocks.
- An egg’s shell has to withstand the springing force.
- What is a “well-distributed” force?
- What is a “pin-point” force?



Conclusion

- In the end, what you need is some sort of padding that will compress at a rate that give the egg the longest time to stop.



Relevant Fields

- Aerospace engineering
- Bungee jumpers
- Test Analysts
- Physiotherapists
- Sports Therapists



Another Cool Egg Experiment...

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- Newton's Egg Drop
- Newton's 1st Law: an object likes to retain its state of motion.
- <http://www.stevespanglerscience.com/lab/experiments/egg-drop-inertia-trick>



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Thanks for having us!