

Science or Magic?

Are you a magician or a science expert? You'll have your friends and family wondering as you demonstrate this tricky experiment. All you need are a few household items to start your scientific career as a magician!

TEKS:

3.6C Observe forces such as magnetism and gravity acting on objects.

4.6D Design an experiment to test the effect of force on an object such as a push or a pull, gravity, friction, or magnetism.

5.6D Design an experiment that tests the effect of force on an object.

How To

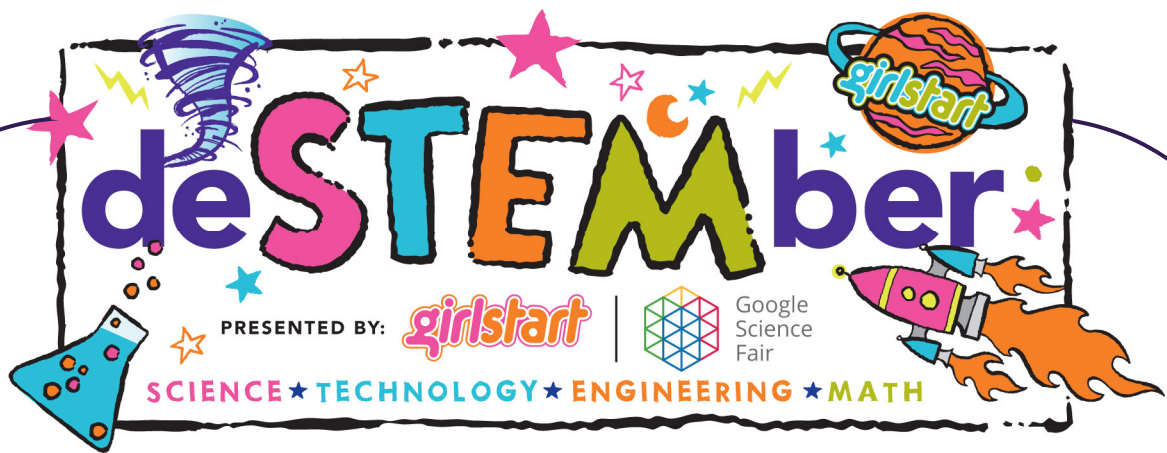
Materials:

- 3 large eggs
- Aluminum pie pan
- Empty toilet paper roll
- Paper towels
- Pitcher of water
- Tall glass

1. Choose a sturdy flat surface to conduct your experiment.
2. Fill the glass about 3/4 full with water.
3. Center the aluminum pie pan on top of the glass.
4. Place the toilet paper roll vertically on the pie pan. Make sure it is directly above the water.
5. Set the egg on top of the toilet paper roll.
6. Stand directly behind the Egg Drop setup holding your hand straight out like you are going to karate chop something.
7. Position your hand about 6 inches away from the edge of the pan.
8. Hit the pie pan with enough force to knock the toilet paper tube out from under the egg without touching the egg, toilet paper roll, or glass of water.

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Why does it work?

According to Newton's First Law of Motion, objects in motion want to keep moving and objects at rest want to stay at rest—unless an outside force acts on them. When force is applied to the pie pan, the edge of the pan clips the toilet paper roll, therefore leaving the egg without any support. For a brief nanosecond the egg doesn't move (because of Newton's First Law of Motion) but then gravity kicks in. Gravity is a pulling force that pulls the egg to the center of the Earth, which in this case is the water filled glass. Once the egg began moving, it didn't want to stop. The glass of water interrupted the egg's fall while providing a safe place for the egg to land, unbroken.

Experiment: <http://www.stevespanglerscience.com/experiment/egg-drop-inertia-trick>

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