

incredible!

American Egg Board

Grades 4–7

# Egg Drop

Putting an egg into a glass of water sounds like a cinch, right? Here's a crazy, "are-you-kidding?" way to do it that works because of a simple law of motion.

## What You Need

- tall glass
- water
- aluminum pie pan
- cardboard tube (from a roll of paper towels or toilet tissue)
- raw egg
- paper towels



## What You Do

1. Fill the glass about  $\frac{3}{4}$  full with water.
2. Position the pie pan atop the glass. Be sure the pan is centered over the glass.
3. Center the cardboard tube as shown on the pie pan.
4. Carefully set the egg in the tube as shown.
5. Use your writing hand to hit the edge of the pie pan, making sure you swing horizontally, not upwards or downwards. Don't just tap the pan; give it a solid hit. Then watch what happens!



Steps 1–4



Step 5

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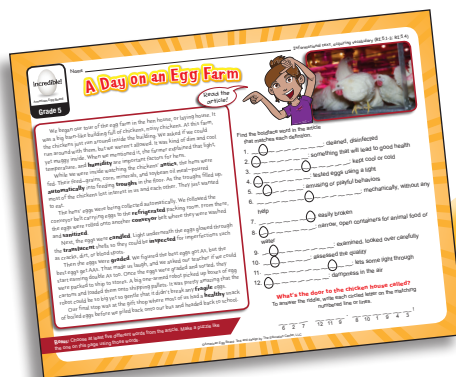
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## Why It Happened

Why did the egg drop straight down into the glass rather than scatter everywhere like the pie pan and cardboard tube? The answer can be found in Sir Isaac Newton's First Law of Motion. According to this law, an object at rest (like the egg sitting on the tube) should stay that way unless a force pushes or pulls it (your hand striking the pie pan). That state of rest is referred to by scientists as *inertia*. When you knocked the tube out from under the egg, the egg stayed where it was for a very short period of time, suspended over the glass. Then another force—gravity—took charge and pulled the egg straight down into the glass.

The water in the glass gives the egg a safe place to drop so that you end up with an unbroken egg. But be prepared to get a little soggy as the water splashes out of the glass!

Would you get the same results if you used four eggs, four glasses of water, four tubes, and a plastic tray instead of an aluminum pie pan? Try it for yourself and find out.



Learn about how eggs get from the farm to your table with the reading worksheet, "A Day on an Egg Farm".