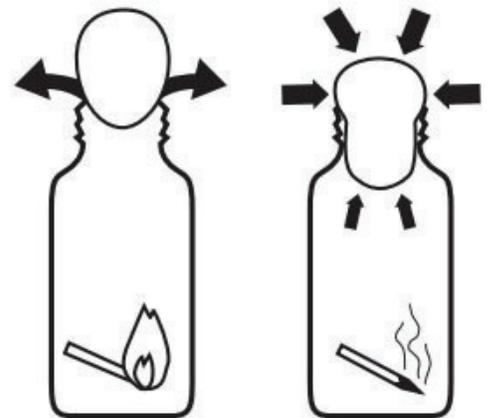# Put an Egg In a Bottle? No Way!

Materials:
- peeled, hard-boiled egg (medium or large, depending on size of bottle's mouth
- wide-mouthed glass bottle, such as an iced coffee or apple juice bottle, with an opening that is slightly smaller than egg's diameter
- strip of paper
- matches
- safety goggles
- adult supervision

Procedure:
- Set the egg narrow end down in the bottle's opening.
- Wearing the safety goggles, light one end of the paper strip on fire.
- Quickly set the egg aside, drop the burning strip into the bottle, and reposition the egg, narrow end down, in the bottle's opening.
- Observe what happens. (The egg will wiggle a little bit and then drop down into the bottle when the flame goes out.)

What Happened?
When you just set the egg on top of the bottle, the air pressure inside the bottle and outside the bottle was the same. The egg didn't move since gravity was not strong enough to pull it inside the bottle. However, when you dropped the burning paper into the bottle, you caused the air inside to heat up and expand. That expanding air took up more space and escaped the bottle, which is why the egg did a little wiggle dance. When the flame inside the bottle went out, the air in the bottle began to cool down. Cool air takes up less space, so there is also less air pressure. The pressure outside the bottle was now stronger than the pressure inside the bottle. This stronger outside pressure is what pushed the egg down into the bottle.

How Do We Get the Egg Out of the Bottle?
It's pretty easy — and scientific! All you need to do is increase the air pressure inside the bottle so it will force the egg back out. To do that, turn the bottle upside down and move the egg so that the narrow end is situated in the bottle's opening. Then blow into the bottle. Adding air increases the air pressure inside the bottle. The higher pressure on the inside of the bottle will push the egg back out. (Be sure to move your face back a bit from the bottle so the escaping egg doesn't smack you in the face!)