

• Tinker Camp Day 2 •

Egg in a Bottle Experiment

You'll need

peeled hard-boiled eggs

bottles with openings slightly smaller than the width of an egg (milk bottles work well)

mallet

vegetable oil

egg cup (cut from an egg carton)

3 birthday candles

lighter (grownup help needed!)

Step 1

Watch the Egg in a Bottle Experiment video at kiwico.com/camp/tinker/day2.

Step 2

Can you get an egg into your bottle? First try placing an egg over the bottle opening and using the mallet to force it in.

Step 3

Next, try oiling up an egg and slipping it into the opening.

Step 4

Finally, try the candle trick! Place an egg in the egg cup, then stick the candles into the top of the egg.

Step 5

Ask a grownup to light the candles. Turn the bottle upside down, then lower it over the candles.

What's going on?

At the beginning of the experiment, the air pressure inside and outside of the bottle were the same. But when the air inside the bottle started to heat up, the air molecules started moving faster, bumping up against each other, and spreading out. Some of that hot air escaped out of the bottle, leaving less air inside.

But what about when the candle went out? Then the hot air inside the bottle started cooling down, slowing down, and taking up less space — **creating a low pressure area inside the bottle**. That meant the air outside the bottle was pushing up on the egg harder than air inside was pushing down, hard enough to push the egg into the bottle!

Best of all? No eggs had to be harmed in the making of this experiment. (Except, of course, the ones you tried to force in with a mallet.)

