

Egg in a Bottle

We have air all around us, pressing down on us and everything on Earth. The force of air pushing down on us is called air pressure. To our bodies, this air pressure is normal so we don't usually feel it. During this activity, you'll see just how strong air pressure is by getting an egg in and out of a bottle!



Materials:

- Hard Boiled Egg
- Match
- Glass Bottle (opening should be smaller than the egg)
- Vegetable Oil
- Piece of Paper

You will need an adult's help for this experiment.

Procedure:

1. Make sure the hard boiled egg you are using is peeled.
2. Grease the opening of the bottle with some vegetable oil.
3. Place the small end of the egg on the opening of the bottle. Does anything happen?
4. With an adult's help, light a small piece of paper on fire and drop it into the bottle. Immediately place the small end of the egg on the opening of the bottle again. *Now, what happens?*
5. Turn the bottle upside down so the egg is now against the opening of the bottle.
6. Blow hard against the opening of the bottle while it is upside down.

Be careful not to blow too hard or the egg might come out very quickly.

7. Remove your mouth from the bottle, and the egg should come out slowly!

1



2



3



4



5, 6, 7



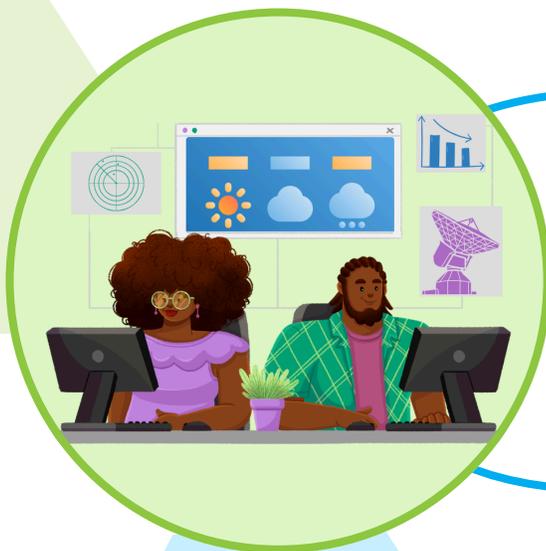
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WHAT'S HAPPENING?

When you first place the egg on the bottle, nothing happens because the air pressure inside the bottle and outside the bottle are the same. However, when you put a piece of paper on fire in the bottle, the fire uses all the oxygen in the bottle.

Once the fire has used the oxygen in the bottle, the air pressure inside the bottle becomes less than the air pressure outside the bottle. The air from outside pushes down on the egg. The egg, which is soft, squishes together and is pushed through the opening into the bottle.

To get the egg out, you needed to increase the pressure inside of the bottle, so the air pressure inside the bottle was more than the air pressure outside the bottle. Then the egg squishes together again to come out of the bottle.



DID YOU KNOW?

An **atmospheric scientist** studies the atmosphere and its elements, including how it changes! If you liked exploring this activity, maybe atmospheric science is for you!