

DISCOVER Science at Home!

How does air pressure work?

Materials:

- One glass container (with an opening smaller than the diameter of the egg)
- One hard boiled egg, peeled
- One birthday candle
- A lighter or match

Procedure:

- 1.) Compare the size of the container opening to the diameter of the egg. Predict what will happen when you place the egg on top of the container opening.
- 2.) Insert the birthday candle one third of the way into one end of the egg, leaving the wick exposed.
- 3.) Have an adult light the candle and place the egg (wick facing down) on top of the glass container.
- 4.) Watch and record observations while the candle burns

The Science Behind It:

As the flame burns, it generates heat and causes the air molecules in the container to expand. When the flame naturally extinguishes, the air molecules cool down and contract, and the pressure inside of the bottle becomes less than the pressure outside. The higher pressure outside of the bottle pushes the egg into the bottle!

Questions to Investigate:

- What physical qualities does the peeled egg have?
- What physical qualities does the glass container have?
- Does the egg look like it will fit through the narrow opening of the container?
- How does the heat from the flame alter the air pressure inside of the container?
- What will happen if the air pressure changes inside of the vessel while the egg sits on top?



Next Generation Science Standards

3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.