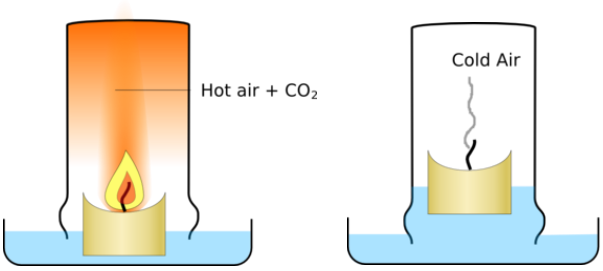
The Drinking Candle!



Materials Needed

- Standard 8 oz. drinking glass (Corning Glassware)
- Stainless steel 300 mL snack bowl (unknown origin)
- Birthday candle or tea light (unknown origin)
- Water (100 mL)
- Lighter or Matches
- Food coloring (optional, but it makes the water a little easier to see!)

Procedure

1. Pour the water into the stainless steel snack bowl to fill approximately 1 cm.
2. Place a candle in the water directly in the center of the bowl.
3. Carefully light the candle and allow it to stand for approximately thirty seconds to get a steady burn.
4. Turn the standard 8 oz. drinking glass over and quickly cover the lit candle.
5. Watch what happens over the course of the next thirty seconds and write down your observations. You may notice some little bubbles escaping until the candle suddenly extinguishes itself. Immediately, water gets sucked up into the glass, rising by approximately 3 cm!

Turn the page over to learn why!

Scientific Explanation

As the candle burns up the oxygen in the glass, it converts chemical energy into heat energy. The air in the glass starts heating up and expanding, even pushing itself out of the glass. You may see little bubbles escaping from the edges. Eventually, when all of the oxygen in the glass is used up, the candle extinguishes itself. Suddenly, the air inside the glass starts cooling down really fast. Cold air is less dense and takes up less space than the warm air that used to be in the glass. You may think that the shrinking air is "sucking" up the water, but actually, the air outside the glass is pushing the water in! Because there is less air inside the glass, the pressure is very little. The air on the outside pushes the water into the glass!

Next steps:

Is there a way to measure the pressure of the air?