



BACKWARDS BLOW

All matter seeks balance.

Materials

- An empty water bottle
- A small wad of clean paper
- A table



Procedure (continued)

- On the count of 3-2-1 you are going to blow at the wad of paper in the mouth of your bottle.
- But first we need to make a hypothesis, or educated guess.
 - What do you think will happen when we blow at the paper wad in the mouth of the bottle?
- Hypotheses are very important for the scientific process. We develop hypotheses about what we think will happen then we test those hypotheses.
- Are we ready?! OK, READY...3-2-1-BLOW!
- What happened? Did your hypothesis hold true?

Procedure

- Place the bottle on its side on the surface of the table with the mouth extending over the edge of the table.
- Place your little ball of paper just inside the mouth of the bottle, half in and half out of the mouth of the bottle.



Results

The wad of paper, instead of going into the bottle, pops out onto the floor!

Why?

We know that air that was inside and surrounding the bottle. When we started, the **air pressure** or **air density** inside the bottle was similar to that outside the bottle. We would say that it was in a state of balance – the density of the air inside the bottle was approximately the same as the density outside the bottle. One of the predictable properties of matter is that it seeks to be in balance.

When we blew at the paper wad, the air inside the bottle wouldn't permit the paper wad to go inside. Because the air pressure inside the bottle and the air outside the bottle were balanced already, when we blew at it ...the paper wad just popped out onto the floor.