Air Pressure Levitation

Learn how fast-moving air creates lower pressure and use it to float a ball or other objects.

Fast-moving air has lower pressure than slow-moving air. A scientist named Daniel Bernoulli discovered this a long time ago. When air is standing still, it has lots of time to push hard on things. But when air is rushing past in a fast stream, it's in a hurry. It doesn't have time to push as hard, so its pressure drops.

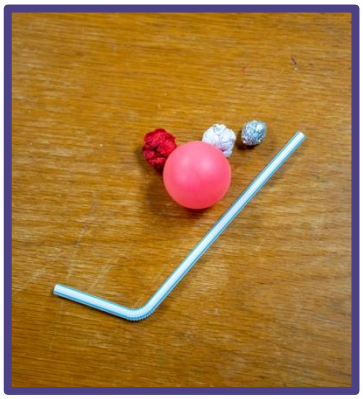
We see this play out every day in our weather. When giant columns of air, warmed by the sun, rise quickly, they create areas of low pressure. This can bring wind, rain, and storms.

The low pressure of fast-moving air is also how airplanes fly. An airplane's wing is shaped so that air zooms faster over the top, creating low pressure above the wing. The higher pressure underneath pushes the whole plane up into the sky!

In this activity, you can see this rule in action with just a straw and a ball.

What You'll Need

- A bendy straw
- Ping Pong Ball, Small Pom-pom, or other Lightweight ball (made using tinfoil or paper)



What You'll Do

1. Hold the straw in your hand with the long end to your lips and the bendy end pointing up.

2. Gently hold the ping pong ball above the bendy end of the straw.

3. Blow a steady stream of ai through the straw.

4. Carefully let go of the ping pong ball in the stream of air.

5. Keep blowing steadily to levitate the ball in the air.