

## Big Lab Explorations

# Bernoulli's Principle

Location: Bernoulli Table

### Try This

1. Turn the knob to start the air flow.
2. Put a beach ball in the air flow. What happens?
3. Try controlling the height of the ball by adjusting the speed of the air with the knob.
4. What happens if you put on a smaller nozzle? What about using a smaller or bigger ball?

### What's Going On?

Bernoulli's principle states that the faster a fluid moves, the lower the pressure is at that point. Because the air surrounding the beach ball is not moving as fast as the air from the nozzle underneath it, the air pressure on the sides of the beach ball is greater. The higher pressure pushes in on the beach ball so it stays nestled in the fast stream of air.

Bernoulli's principle is part of the reason that planes can fly. Because the top of the wings are curved, air flows faster over the top of the wing than the bottom. The slower-moving air underneath the wing has more pressure and helps to lift the plane.

### Try exploring Bernoulli's principle at home:

\*Can you use a hair dryer to float a ping pong ball in the air?

\*Set two empty soda cans on a table about 4 inches apart. What happens when you blow in between them?

\*Hold a piece of paper right under your mouth and blow over it. Does it lift up or down?

#### Related exhibits in the California Science Center:

Air and Space Gallery: Wear a Wing (3rd floor)

Creative World: Get a lift from wings (3rd floor)  
Harness the wind (3rd floor)