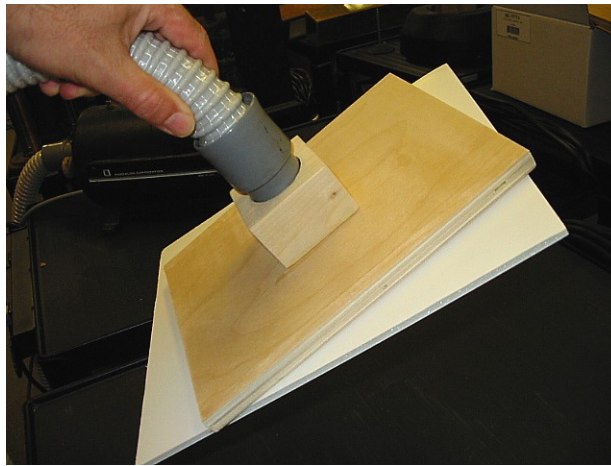


Bernoulli Air Tricks

Purpose: These demos show that moving air is at a lower pressure than stagnant air and produces lift.

Trick 1: Pick up the foam core board.



This is a large-scale version of the demo where you blow through a thread spool to pick up a bit of paper. It explains a lot of our daily experiences.

Insert the air hose into the plywood board, and the board over the foam core with the attached straw poking up through the air inlet. With the air on, you can set the board on top of the foam core and lift it. When the air is cut off, it drops. (The board, like the spool is necessary to make the high speed air move over an appreciable portion of the sheet below. The drinking straw glued to the foam core keeps the sheet from flying off to the side.

Trick 2: Pick up the ping-pong ball with the funnel.



Insert and hold the funnel base into the blower and put the ping-pong ball into the funnel. Turning on the blower makes the ball stick inside! Turn it around, and upside down. When the air goes off, the ball drops out. You can then turn the funnel upright again with the air on. When trying to put the ball in the funnel it is initially blown upwards as expected, but when forced too near the bottom of the funnel the Bernoulli pressure difference takes over and the ball is sucked in.

Also: Try the same thing with the clear funnel and the large Styrofoam ball.

Trick 3: Styrofoam curve 'ball'

Hold the Styrofoam cup on its side, axis towards the audience, and give it a spin while you drop it. As it drops, it curves to one side or the other as it falls.

Trick 4: Trapped, floating balls

Just using the air hose pointed upwards, you can float either the ping-pong ball or the large Styrofoam ball. I am told that Bernoulli's principles are what keep it from escaping—although I have my doubts. Along this line, the kit also includes the 'eye popper' demo: a cute alligator whose eyes float when you blow into him.

Note: Be sure to show that the air blower is *blowing* air. The students will be more impressed than if they think you are just using a vacuum cleaner to pick things up.

Extra Equipment: Air blower

Location: Shelf D1