

## Bernoulli's Principle

Bernoulli discovered that fluids that flow fast are under less pressure than the same fluid in the same container in an area that is flowing slowly.

Obtain a blow dryer and accessories from Mr. Shumway. (I inherited this from my wife when the heating part quit working. It is now working, so push the cool button when running for air flow experiments until it quits again.) Air has fluid properties, and is easy to study since we don't have to clean up air spills.

Hold the blow dryer in so that the air flows directly up. Hold a ping pong ball in the flow of air maybe a foot above the blow dryer. Let go of the ping pong ball. Tip the blow dryer gradually and see how far you can tip it without losing control of the ping pong ball.

The fast flowing air is at a lower pressure than the air around it, so when the ping ball starts to leave the flow, the higher pressure air pushes it back into the flow.

Try to explain that in your own words. \_\_\_\_\_

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Now, with the blow dryer, send the flow of air through a plumbing T in the direction of the arrow. Place a small piece of paper on the port below. Try to explain why it gets sucked onto the T. \_\_\_\_\_

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Sand blasters work this way. The pressurized air flows past a T that has a hose into the sand, and the sand is pulled into the air flow.



An airplane wing is shaped like this. Try to explain one cause of lift on a level airplane wing. \_\_\_\_\_

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