

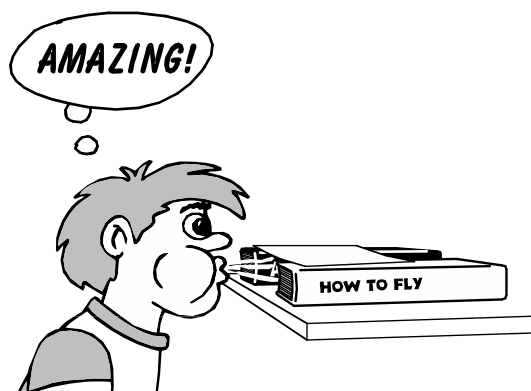
Aerodynamics

Today we will do two experiments that reveal one of nature's secrets.
In the next lesson you will see how birds use this secret to fly!

Experiment 1: Wind Tunnel

WHAT YOU NEED: two large books about an inch thick, a piece of paper.

WHAT TO DO: place the books close to the edge of a table top and lay a sheet of paper across them so it forms a tunnel about an inch high and three inches wide.



What do you think will happen when you blow through this tunnel?
Make a PREDICTION at right.



Choose Your Prediction:

- The paper will blow up and away.
- The paper will not move.
- The paper will be sucked down into the tunnel.

Now try it!

What really happened to the paper when you blew through your wind tunnel?

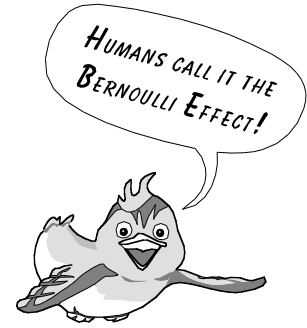
CONCLUSION - Based on your observations, finish this sentence:

The paper moves (TOWARD, AWAY FROM) a fast-moving stream of air.

Secret of Flight

Did you find that the paper moved toward the fast moving stream of air? I hope so! That is the secret that birds use to fly. They bend their wings so that the air moves over the top of the wing faster than underneath it. Exactly how they do this we will see in the next lesson. The faster air on top of the wing sucks the bird up into the sky. Neat, huh?

This is also the secret behind another fun trick!



Experiment 2: Balancing Balloon

WHAT YOU NEED: one tiny balloon and a medium sized straw.

WHAT TO DO: inflate and tie the tiny balloon. Stretch it to make it easier to inflate. Try to balance the balloon on the end of the straw. Not possible, right?



Try again, but this time blow air through the straw while you are balancing the balloon.

With a little practice, it should be possible to keep the balloon floating a short distance ABOVE the straw! The fast moving stream of air will hold it in place. If the balloon tries to escape to the right or to the left, the fast moving column of air will draw it back again.



HAVE YOU NOTICED . . . ?

*EVER SIT IN A CAR PARKED NEXT TO A HIGH SPEED ROAD? WHENEVER A FAST MOVING TRUCK GOES BY, THE CAR ROCKS A LITTLE BIT, **TOWARD** THE TRUCK!*

CAN YOU EXPLAIN WHY?