



Discover the **amazing** powers and properties of air

January 30 - May 22, 2010

Air is at work all around us



Air is a familiar and accessible medium for playful investigations that provide first-hand experiences with **physical science concepts relating to air, sound and weather**. As students ask questions, make predictions, describe their observations and share their ideas, they gain skills in the **processes of investigation and reasoning**.



Reserve a tour

Plan your visit

Download exhibit description and
Big Ideas matrix with
TEKS and FOSS connections

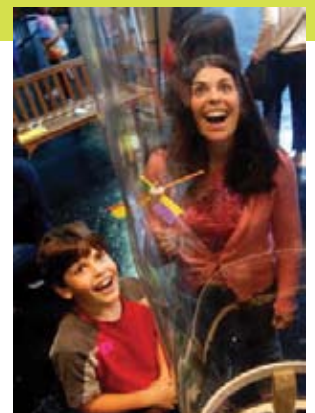
austinkids.org/educators.aspx

13 highly interactive experiences make science touchable and develop students' intuitive understanding of how air moves, how moving air affects objects in its path and how objects in turn affect the movement of air.

POWERS and PROPERTIES of AIR

AIR TUBES

Explore the effect moving air has on objects that you design to spin, fly or float. Everyone is a test pilot as they experiment with the forces of air flow and resistance, turbulence and gravity. Ideas build on one another to spark new designs and launch tests to see the effects of variables like weight, shape, surface area, wings, fins and other design innovations limited only by your own imagination.





BERNOULLI BLOWER

Experiment with a ball that seems to float above an air nozzle captured in the stream of moving air. Pressure is lower in a moving air stream than in the more stationary air around it. Higher pressure surrounding the ball holds it in the stream.



AIR MAIL

Arrange word balls to make a short sentence then propel your message 100' through a tube of moving air.



SAILBOATS

Control air flow to sail boats on a layer of air. Test and compare which sail shapes resist airflow best to create the strongest push to move the boat.



KID-POWERED AIR

Activate air with mechanisms to push balls up against the pull of gravity. Compare the effort needed to lift balls to the same height. Create air flow by turning a crank that spins a ceiling fan high above.



AIR TABLES

Direct and manipulate air flow to observe its ability to roll, spin and inflate objects.



PNEUMATIC LAUNCHER

Lift and drop a bowling ball inside a tube to compress air into a smaller tube and launch a tennis ball toward a target. Observe and measure the flight path of the tennis ball.



AIR CANNON

Aim and launch a surprisingly powerful puff of air across the room by compressing it through a small hole. Feel the puff and observe it move disks several feet away. Measure the distance and compare the effects.

AIR and WEATHER



TOUCHABLE TORNADO

Set a rising column of mist spinning with horizontal wind shear. Varying the wind speed and interrupt the flow with your hand to manipulate the shape and width of the vortex.



WIND CHAMBER

Step in to get a feel for the forces of wind at work. Capes, windsocks and other objects amplify exploration of winds push and pull. Compare how shape and material affect how objects resist or respond to airflow. Measure wind speed with an anemometer.

AIR and SOUND



TUBE TUNES

Plunk the end of a PVC tube to vibrate the tube and the air molecules inside. Follow color note patterns to thump out familiar tunes on 8 tubes of graduated length and pitch. Feel the tubes vibrate and observe the relationship of length to pitch.



GIANT EARS

Compared with some animals, human outer ears are small, close to our heads and immovable. What if you had sound catchers as big as an elephant's or shaped like a bat's? Listen and compare sounds captured by 2 giant sets of wacky sound catchers to find out what you may be missing.



SOUNDS ALL AROUND

Sounds traveling through air arrive at your two ears from all directions. The hearing center in your brain depends on info from both ears to keep you oriented in your surround sound world. Try on different headphones to find out how it feels when sound direction information is scrambled.