



Air is all around us. The air on earth is made of different gases—we breathe them every day. The gases in the air move as wind. Strong winds can take a kite high into the sky or move a sailboat through the water. When air or any gas pushes against something else, a force or pressure is created.

To feel gas pressure, try blowing into an empty plastic bottle. What happens? The harder you blow into the bottle, the more gas pressure you create. You feel this pressure in how the air “pushes back” and keeps you from adding more.

Stretch a balloon over the mouth of the plastic bottle to seal it. Squeeze the bottle and see what happens to the balloon. The harder you push on the sides of the bottle, the larger the balloon becomes. The balloon inflates because you increased the gas pressure in the bottle as you pressed on its sides. As you press the sides of the bottle, you are pushing the gases in the bottle into the balloon where the gas pressure is less. When you let go of the bottle, there is less pressure on the bottle, and the air moves back into the bottle.

In the “Avogadro’s Air Rockets” activity, air in the bottle is forced into a straw when you squeeze the bottle’s sides. Air pressure is created, which pushes the rocket out of the bottle. This is similar to a rocket that is launched into space. Fuel is burned to make gases. The gases build up in a small area near the base of the rocket increasing the gas pressure inside. As the gases escape to the outside of the rocket where the gas pressure is lower, they push the rocket along.

Some toys need gas pressure to make them work. To make a Super Soaker work, you pump one of its chambers full of air. The more you pump it, the greater the air pressure becomes. When you pull the Super Soaker’s trigger with your finger, the gas pressure pushes the water out of the nozzle, drenching the people around you.

Gas pressure is what makes some toy rockets and Super Soakers do what they’re supposed to do. Can you think of other toys or objects that need gas pressure to make them go?

