Unitil

e-SMARTkids

ACTIVITY TIPS

The Pressure's On!

In this advanced activity students investigate some of the effects of pressure on a gas. This activity appears in the section *It's a Gas*.

Materials

- 1 balloon
- 1 syringe, the type with no needle (10-ml or larger; can be obtained at any pharmacy or veterinarian's office)
- 1 large eraser
- 1 ballpoint pen
- 4 hardcover books of the same size/weight
- cooking oil (a drop)

Activity Tips

- This activity is best done in teams, so one person can hold the syringe and eraser steady while the other holds the books.
- Make sure students don't push the syringe all the way through the eraser.
- The drop of cooking oil helps the plunger slide up and down without sticking.

Objective

Natural gas travels from the wellhead to the processing plant, the gas utility, and the customer through a series of transmission and distribution pipelines. The gas is compressed to make it move through the pipes. Students will learn about the role pressurization plays in this process by observing how gas flows from an area of higher pressure to an area of lower pressure.

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Questions and Answers

Part I

1. Does the balloon push back? Which is under greater pressure: the air inside the balloon or the air outside the balloon?

Yes, the balloon pushes back. The air inside the balloon is under greater pressure.

2. What happens to the air inside of the balloon when you unpinch the neck? Why?

When you unpinch the balloon the air escapes because air flows from areas of higher pressure to areas of lower pressure.

Part II

3. What is the relationship between the pressure and volume of a gas?

The pressure will increase as more books are placed on the plunger. As pressure increases, volume decreases and conversely, as pressure decreases, volume increases.