From Janice VanCleave's *201 Awesome, Magical, Bizarre & Incredible Experiments*. (New York: John Wiley & Sons, 1994), 77.
USA TODAY "Understanding Air Pressure" <http://usatoday30.usatoday.com/weather/wbarocx.htm> retrieved 12/03/2012.

Science Project, Wk. 18 -- Push Up (#140)

"Noi viviamo sommersi nel fondo d'un pelago d'aria."
(We live submerged at the bottom of an ocean of air.)

Evangelista Torricelli (1608-1647),
inventor of the barometer

Name: _____

When you think of *air*, you might think of emptiness, but air is actually exerting a force (pushing) on everything, all the time. This invisible force is called *air pressure,* which we'll demonstrate today!

Purpose: To demonstrate the strength of **atmospheric pressure**.

Materials: bowl large enough to hold a glass on its side, tap water,

Procedure:

- Fill the bowl three-quarters full with water.
- Turn the glass on its side and push it beneath the surface of the water. The glass should fill with water.
- Keep the glass under the water and turn it so that its mouth points down.
- Slowly lift the glass leaving about 1 inch of the mouth under the water's surface.

Hypothesis (CIRCLE): The water in the glass will

PARTIALLY EMPTY INTO THE BOWL

COMPLETELY EMPTY INTO THE BOWL

REMAIN IN THE GLASS

Result (CIRCLE): The water in the glass

PARTIALLY EMPTIED INTO THE BOWL

COMPLETELY EMPTIED INTO THE BOWL

REMAINED IN THE GLASS

Sketch:

Conclusion:

The air pushing down on the surface of the water outside the glass extends upward hundreds of miles. The pressure of this air is called **atmospheric pressure**. This pressure is great enough to support the **weight** of the water inside the glass. Thus, the water level inside the glass remains higher than the water level in the bowl.

Did you know?

Earth's gravity causes the downward force we know as "weight." Since the pressure depends upon the amount of air above the point where you're measuring the pressure, the pressure decreases as you go higher!

Air pressure changes with the weather. And quick changes in air pressure can affect your body.

Additional experiments involving air pressure are available from:

the Editors of Publications International, Ltd.. "Science Projects for Kids: Air Pressure" 16 November 2007. HowStuffWorks.com. <http://tlc.howstuffworks.com/family/science-projects-for-kids-air-pressure.htm> 03 December 2012.

TEACH Engineering. "I Can't Take the Pressure!" <http://www.teachengineering.org/view_activity.php?u>rl=collection/cub_/activities/cub_air/cub_air_lesson04_activity1.xml>