

**Project FOCUS
Best Lessons
FOURTH GRADE**

Title of Lesson: Air Pressure

Theme: Physical Science

Unit Number: **Unit Title:** Weather

Performance Standard(s) Covered (enter codes):

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

Air Pressure

Learning Activity (Description in Steps)

Abstract (limit 100 characters): students will demonstrate air pressure in the classroom using the Scientific Method.

Details: Air pressure includes all of the particles of air pressing down on a surface. We are surrounded by air particles that provide pressure from all angles. The layers of the atmosphere include the thermosphere, mesosphere, stratosphere, and troposphere. As we move up in the atmosphere, the air particles are spaced further apart and the air pressure decreases.

Before performing the air pressure demonstration we defined air pressure and identified the various layers of the atmosphere. I had each student fold a piece of paper into four sections. After discussing and defining the layers of the atmosphere, I had the students write out each layer of the atmosphere and draw a symbol to represent a fact about that layer in the upper left section of their papers. The students then defined air pressure in the upper right section of their papers. In the same section the students drew the spacing of the air particles for each layer of the atmosphere across from the names listed on the upper left section. The air particles increased in number from the thermosphere to the troposphere.

After providing the background information, I explained the purpose of the experiment and described the procedures to the students. In the lower left section of their papers the students wrote what they predicted would happen. Next, I performed the demonstration by filling the plastic cup with water and placing a moist piece of cardboard over the top of the cup. While holding the cardboard firmly to the top of the cup, I flipped the cup upside down and took my hand away from

the cardboard. The piece of cardboard stuck to the cup and no water leaked out due to air pressure pressing on the cardboard. The students explained their results along with their predictions in the lower left box. In the bottom right corner of their papers the students drew a diagram of the procedures and results.

Materials Needed (Type and Quantity):

-clear, plastic cup

- water

-1 piece of cardboard (approximately 5in. x 5in.)

Notes and Tips (suggested changes, alternative methods, cautions):

Sources/References:

1)

2)

3)