

Nichol Ramirez
Best-Lesson
Project Focus
11/05/12

Title of Lesson: The Water Cycle Experiment
Theme: Earth/Space Science
Unit Number: 2 Unit Title: Weather
Performance Standard(s) Covered (enter code):
S4E3

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):

Students will differentiate between the states of water and how they relate to the water cycle and weather.

Demonstrate how water changes states from solid (ice) to liquid (water) to gas (water vapor/steam) and changes from gas to liquid to solid. Investigate how clouds are formed.

Explain the water cycle (evaporation, condensation and precipitation.) Investigate different forms of precipitation and sky conditions (rain, snow, sleet, hail, clouds, and fog.)

Learning Activity (description in steps)

Abstract (limit 100 characters): This experiment is a micro scale demonstration of the water cycle in a plastic container.

Details: 1) Place a desk in the front of the classroom and set up the experiment with the appropriate supplies. First place the styrofoam block in the plastic container. Then place a colored piece of paper on the styrofoam block. Next, fill up the container half-way with hot water. After, seal the container with saran wrap, and place a rubber band around the container to secure the saran wrap. Finally, place approximately 5 ice cubes on top of the saran wrap and turn on the lamp and place it over the ice. 2) Separate the students into groups of four and pass out a worksheet to go along with the experiment (1 sheet per group). 3) Once the experiment has been set up, allow the students to come for a couple minutes in groups of four and ask them to make observations and hypotheses. 4) Follow through with the experiment and once it is complete, ask the students to come back (in

groups) and observe the changes. 5) Go over the answers to the worksheet, and further discuss the water cycle with the class.

Materials Needed (type and quantity): 1 lamp, 1 medium- sized plastic container, 1 sheet of saran wrap, 1 rubber band, 1 styrofoam block, a piece of colored paper, approximately 5 ice cubes and a coffee pot full of hot water.

Notes and Tips (general changes, alternative methods, cautions): Make sure to securely tighten the saran wrap with the rubber band so as not to allow any air to escape from the container. The water should also be very hot. To make the experiment run faster, use a hair dryer and blow it over the ice so it could melt quickly. I could have improved the experiment if I had more supplies so the students could work in groups and construct their own “mini water cycle” with my instruction.

Sources/References:

1) <http://www.youtube.com/watch?v=8sgVVydSrVM>

WORKSHEET: The Water Cycle Experiment

The Water Cycle Experiment

1. Name the three stages of the Water Cycle.
2. _____ is the stage of the Water Cycle when the sun heats up the water in lakes, oceans, or rivers and turns it into vapor or steam. Explain where this demonstrated in this experiment.
3. In this stage of the Water Cycle _____ _____ in the air gets cold and changes back into liquid forming clouds. This stage is called _____. Explain where you see this happening in the experiment.
4. _____ occurs when so much water has condensed that the air cannot hold it anymore. The clouds get heavy and water falls back to the earth in the form of rain hail, sleet or snow. Explain where this occurs in the experiment.
5. _____ affects the type of precipitation that occurs in the last stage of the Water Cycle.
6. Evaporation is the changing of water from a liquid to a _____.
7. Condensation is the changing of water from a gas back to a _____ .
8. Why is water considered a renewable resource?
9. What represented the energy source in this experiment and what did it represent?