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Where Did the Water Go?

STORM Project

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Activity 6
Where Did the Water Go?
Level 1

Objectives:

- To predict what will happen to the water sprayed on the surface after setting for a short time.
- To predict the effect of moving air on evaporation

Teacher notes: You can do all or part of this lesson depending on the grade level. To access the activity website go to <http://www.uni.edu/storm/activities/level1/>.

National Science Education Standards: As a result of activities in grades K-4, all students should develop: abilities necessary to do scientific inquiry, properties of earth materials, and changes in earth and sky.

Materials: sponge, water, water spray bottles, tennis ball containers or clear plastic containers, one with a lid and one without a lid, waterproof marker, measuring device for the water

Engage:

(Do this activity three days before the next activity)

Fill the tennis ball containers with a measured amount of water and mark the height of the water on the outside of the can with a waterproof marker. Make sure you replace the lid on one of the containers. Ask the students to predict what will happen if you allow the containers to set in the room for three days. Put the students' predictions on the chalkboard or on newsprint. Have students mark the level of the water on the container each day for three days with the marker.

Explore:

(Note: you could do this activity outside on a sunny, warm day)

1. Ask the students what will happen if the chalkboard were sprayed with the water bottle. Where would the water go?
2. Spray the chalkboard with small amounts of water. Have the students observe what happens.

Explain:

1. Discuss their observations of the water disappearing with the students.
 - a. What happened to the water on the chalkboard?
 - b. Why do you think this happened?
2. Have students predict which hand will dry faster if sprayed with water: one that is still or one that is waving in the air. Write the predictions on the board.
 - a. Spray the back of the hands with the water. Have them record their findings.
 - b. Compare the results with the predictions and discuss with the entire class.

3. After three days have the students measure the difference in the water levels on the clear plastic containers.
 - a. What has happened to the water?
 - b. Review the predictions and results with the class. Explain that the water in the open container evaporated. This means it turned into water vapor and entered the air. This is how puddles disappear and clothing dries.
 - c. If you think it is appropriate with your class to use the term “evaporate”, then explain that water can evaporate from oceans and lakes and ponds, as well as from puddles on streets and sidewalks. This is how puddles disappear and clothing dries. Tell the class that water that evaporates from earth often rises into the sky and turns into clouds and sometimes rain or snow.
4. At the activity website, click on “Cloud Cover.” Have your students look at the weather satellite image. You can print off the image if you wish. The bright areas on the United States map show areas of cloud cover. The brightest areas are the highest clouds.
 - a. Have your students shade in the accompanying U.S.A. map outline, to show which areas of our country have clouds overhead.
 - b. Ask students to predict where it might be raining or snowing in the USA.
5. At the activity website click on “Current Precipitation.” Have your students look at the radar image that shows where rain or snow is falling on the USA. You can print off the image if you wish.
 - a. Have your students color in their cloud cover U.S.A. map outline, to show which areas of our country are receiving precipitation.
 - b. What areas of the United States have precipitation right now?
 - c. Is there precipitation everywhere there is clouds? (Clouds contain water droplets, ice crystals, and water vapor. However not all clouds produce rain as will be obvious from a comparison of cloud cover and radar images.

Extension:

Have students compare cloud cover and precipitation maps for a five-day period. Ask them how clouds and precipitation patterns change across the country.

Evaluation:

Teacher observation of the predictions and results.

For Further Inquiry:

Ask students how precipitation intensity might depend on cloud height. Have them design an investigation to answer this or any other question they might have about cloud cover and precipitation.

