What Goes Around Comes Around

Question

- What part does the ocean play in the hydrologic or water cycle?

Setting the Stage

- Go outside and find a puddle. Mark around its edges with chalk or rocks. Observe the water over the next two days. How long does it take for the water to evaporate? What effect does sunshine or shade have on the process?

Materials Needed for the Class or Each Group

- wet sponge or wet towel
- chalkboard
- heat-resistant dish with lid
- access to a freezer
- hot plate
- data-capture sheet (page 13)

Procedure *(Student Instructions)*

I. Evaporation—how water gets into the air to form clouds

1. With the wet sponge or wet towel, draw a large O for ocean on the chalkboard. Watch as it disappears. Where did it go?
2. Repeat the procedure. This time try to make the O on the chalkboard disappear faster. See what effect fanning it with a towel (to represent wind) or heating it with a lamp (to imitate the sun's heat) might make.
3. Record your observations on the data-capture sheet.

II. Condensation—how water changes form a vapor to a liquid

1. About 30 minutes before this exercise, put the lid in the freezer.
2. Place the dish on the hot plate and turn the setting on high.
3. When the dish is warm, leave it on the hot plate, but turn off the heat.
4. Take the lid from the freezer and put it on the dish. Observe what happens next.
5. Record your observations on the data-capture sheet.

Extension

- Complete the story of the hydrologic cycle. After water has evaporated from the ocean, clouds form. As the droplets become heavier and cool down, they fall to the earth as rain. This water collects in rivers which flow back into the ocean..

Closure

In their ocean journals, have the students write a story about the journey of a water drop as it goes through the water cycle.

Internet Extender

Earth's Water
http://wwwga.usgs.gov/edu/followdrip.html

Activity Summary: At this Web site, follow a drip to see how it travels from the ocean to a cloud and finally returns to the ocean again after many stops along the ground. Click on the graphic showing the water cycle to see a great visual of this phenomenon.

What Goes Around Comes Around *(cont.)*

I. Evaporation

1. Explain what happened to the water in the O you drew on the board.

   _____

2. Tell how you tried to make the second O disappear faster. _____

   _____

   _____

3. How do you think water from the ocean is evaporated? _____

   _____

4. Conclusion. Two ways to speed up evaporation are _____

   _____

II. Condensation

1. Predict what will happen when the cold lid is placed on the warm dish.

   _____

   _____

2. Recall what happened when the cold lid was placed on the warm dish.

   _____

   Where did the water come from? _____

   _____

3. What happened to the water droplets? _____

   _____

4. Conclusion. Water droplets fall back down into the pan when _____

   _____

On the back of this paper draw a picture of the hydrologic cycle. First, draw a mountain near the ocean and a river flowing down the mountain. Then draw a sun in the sky to show how the ocean water is heated. As water from the ocean evaporates, water droplets form clouds. Draw some clouds in the sky. As the droplets become heavier and are cooled by the wind, they drop moisture on the earth. Draw some rain from the clouds. Rainwater collects in the rivers, which flow back into the ocean. Color the river blue.