

# Water Happenings

## Purpose

Students will observe that clouds and fog are made of tiny droplets of water, and investigate that when liquid water disappears it turns into a gas (vapor) mixed into the air and can reappear as a liquid when cooled.

## Materials

*For the teacher:* thermal mitt, thick glass coffeepot or saucepan, hot plate, small frying pan, ice cubes, chalk, chalkboard

*For each group of 4 students:* paper, pencils

## Activity

### A. Pre-Activity Preparation

Fill the coffeepot three-fourths full of water.

### B. Pre-Activity Discussion

1. Ask students: "What happens to water when it is heated?"
2. Ask students: "Have you ever put your hand above a pot of boiling water? How does it feel?"
3. Discuss with students how when water is heated to a certain temperature, some of it turns into vapor or steam. Explain that there can be tiny droplets of water in the air.
4. Ask students if they can think of any instances in which there are lots of tiny droplets of water in the air.
5. If no one mentions clouds or fog, ask students: "What makes up a cloud?"
6. Discuss with students the possibility that clouds and fog are made of tiny droplets of water.
7. Tell students they are going to investigate this further by observing a demonstration.

### C. Demonstration

1. Have students gather around to watch the demonstration. Be sure students stay a safe distance away from the hot plate.
2. Put the coffeepot of water on the hot plate and turn on the heat.
3. Fill the frying pan with ice cubes and when the water in the coffeepot begins to boil, hold the frying pan about six inches above the coffeepot.

(continued)

### MEETING INDIVIDUAL



### NEEDS

Have students who need a challenge investigate the term *relative humidity*. Ask such students to prepare a brief presentation on the topic to present to the rest of the class.

### connecting across the curriculum



### Visual Arts

Have students create poster art displaying the water cycle. Tell students to label their artwork with the terms evaporation, condensation, and precipitation in the appropriate places.

Standards Links  
5.3.8, 5.6.4

**Activity (continued)** 

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4. Direct students' attention to the bottom of the frying pan and ask: "Do you notice anything on the bottom of the frying pan?"
5. Explain to students that as the water is being heated, it turns into a gas mixed with air (vapor). Discuss how this steam rises and then touches the cold frying pan. Explain that the frying pan cools the vapor, which causes the vapor to condense into liquid.
6. Tell students that they should observe the condensed water on the bottom of the frying pan dripping back into the coffee pot. Ask: "Why is the condensed water falling back into the coffee pot?"
7. Sketch this process on the chalkboard and relate it to the formation of clouds and rain.

**D. Making Connections**

1. Write the words evaporation, condensation, and precipitation on the board and review the meaning of each word with the class.
2. Discuss with students how the demonstration was similar to the water cycle.
3. Draw and label the water cycle on the board.
4. Ask students questions such as: "In which part of the water cycle does water turn into a gas/vapor? In which part of the water cycle do clouds form?"
5. Discuss with students how water can exist as a solid, liquid, or gas as it cycles on Earth.

**Questions for Review** 

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**Basic Concepts and Processes**

Throughout the activity, ask questions such as:



How do you know that water turns into water vapor when it is heated?



What happens to water vapor when it cools?



How do you know?



What are clouds made of?



How do you know?