

# Going, Going, Gone!

## Summary

This unit will describe the water cycle. It will demonstrate that water changes state as it moves through the water cycle. It will show the relationship between heat energy, evaporation and condensation.

## Time Frame

4 class periods of 30 minutes each

## Group Size

Pairs

## Life Skills

Communication

## Materials

Each small group needs: a computer with internet access, a thermometer, chalk, ruler or measuring tape, science journal, pencil.

## Background for Teachers

Water exists in three forms: ice (solid), liquid water (liquid), and water vapor (gas). Evaporation happens at any temperature, but it will evaporate very quickly if the sun is used as the source of energy. Evaporation occurs on both water from the ocean and on land. The warmer the water, the faster the molecules move into the air and the faster they evaporate. Most water vapor comes from lakes, rivers, oceans, leaves of plants and wet ground. The heat from the sun causes the water to change from liquid to gas.

## Student Prior Knowledge

Students should have prior experiences with water in various forms.

## Intended Learning Outcomes

Make simple predictions and inferences based upon observations. Use instruments to measure length and temperature using appropriate units. Use observations to construct a reasonable explanation. Describe the water cycle.

## Instructional Procedures

### Learning Segment 1:

Show students "The Water Cycle" movie to build background.

### Learning Segment 2:

Begin the "Puddle" experiment that follows:

Step 1. This investigation works well if done after a rain storm when the sun comes out before the end of the day. If rain isn't available, just create your own puddles!

Step 2. Tell students that as Water Cycle Detectives they will now be Evaporation Experts. Pass out the supplies for each group and go outside to the playground in an area with a hard surface such as a sidewalk or blacktop. Have each group find a puddle in one of the areas that will become their study site.

Step 3. Each group will keep track of their evaporation action. Have each group make an outline of a puddle by drawing around the puddle's edge with their chalk. Measure the diameter of their puddle with the ruler or measuring tape. Take the temperature. Instruct them to record this data in their science journals or on a piece of paper. Observations should also include drawings of what they see.

#### Learning Segment 3:

Have students visit the following web site: [http://www.epa.gov/ogwdw/kids/flash/flash\\_watercycle.html](http://www.epa.gov/ogwdw/kids/flash/flash_watercycle.html)

This site "talks" about the water cycle. Then continue with the "Puddle" experiment. Have the groups return to the puddle and draw new outlines. Have them continue to measure the size, draw and record temperatures.

#### Learning Segment 4:

Have students visit the web site:

[http://www.southeastwater.com.au/games/education\\_kidsroom\\_wcactivity.asp](http://www.southeastwater.com.au/games/education_kidsroom_wcactivity.asp)

This site contains a great water cycle game for review of concepts and vocabulary. Then wrap up the "Puddle" experiment. Have the groups return to the puddle and draw new outlines. Have them continue to measure the size, draw and record temperatures. This process should be repeated until the puddle has completely disappeared or until the school day ends. Return to the class and discuss student observations together. Some questions might include: How long did it take for the puddle to evaporate? Did some puddles still have water left? Does puddle size matter in the evaporation process? Does temperature matter in the speed of evaporation? Where did the water go? Was the sun part of the evaporation process? What did the sun do to the water molecules? Does the water cycle require a source of energy? What conclusions can they state from their observations? (Students should infer that evaporation takes place as the liquid water becomes water vapor from the sun's warmth. They infer this because water can't just "disappear" but has to follow the next step in the water cycle. Discuss with students how the process of the sun's energy causing evaporation is important. Have them name some places on the earth where evaporation takes place. Ask them to identify situations in which evaporation causes problems (swimming pools and fountains lose water, water holes in deserts dry up) and situations where evaporation is helpful (drying cement, clothes hanging on the line, making raisins). Have they noticed that evaporation occurs more frequently in the summer months when the sun is warmer?

Student observations and discoveries should be recorded in their science journal.

#### Rubrics

[Going, Going, Gone! Rubric](#)

#### Bibliography

#### Authors

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