

ENVIRONMENTAL ENCOUNTERS

Lesson Plans for the Science of Water



The Water Cycle

Suggested grade level:

Fourth grade

Objective:

Students will create a chart demonstrating the water cycle. They will create classification systems for the plants they observe at the Conservation Garden Park and make predictions about water based on what they have learned.

Curriculum ties:

- ✓ Fourth grade Science Standard 1 Objective 1 a-d, Objective 2 a-e, Standard 2 Objective 1 b, Standard 3 Objective 3 c-d, Standard 5 Objective 2 a,e, Objective 3b
- ✓ Social Science (Time) Standard 2 Objective 3 a-b
- ✓ Visual Fine Arts Standard 2 (Perceiving) Objective 2 a-e, Standard 3 (Expressing) Objective 2 c-d.

Time needed:

- ✓ Prep: 1-2 hours
- ✓ Pre trip: 2-3 hours
- ✓ Garden: 1-2 hours
- ✓ Post trip: 1 hour

Materials needed:

- ✓ Water cycle illustration (attached)
- ✓ Clear glass or jar
- ✓ Food coloring
- ✓ Plastic wrap
- ✓ Rubber band
- ✓ Ice cubes
- ✓ Paper and writing utensils for writing or drawing observations and classifying plants
- ✓ Local and global news sources (age-appropriate)

Teacher notes:

In this activity students will learn about the water cycle. Students should know that the amount of water on the earth always stays the same and has been around for millions of years. This means the water we use today may have been drunk by dinosaurs or sailed over by early explorers. Also, only a small amount of the water on the earth (one percent) can be used by people, because most of it is salty or contained in glaciers. The students should also know that water moves around the earth by evaporation and condensation. Water affects everything else on earth, including where and if people, animals, and plants can live, and what the weather is like.

Explain to the students that some plants are adapted to live without much water, such as by having needles or small, hairy leaves that don't lose much water in the sun. The amount of water that plants use is one way



to classify them. They can also be classified in other ways, such as by whether or not they are evergreen or what kinds of flowers or fruit they have.

Procedures:

Preparation

Call 801-565-4314 to schedule your visit to the Conservation Garden Park at Jordan Valley.

In the classroom

Students will learn about the water cycle by completing a diagram of the water cycle and observing an in-class experiment. Give the students an illustration of the water cycle to color in and label. To demonstrate the water cycle, have a clear glass or jar with water in it, and add some food coloring. Then cover it with plastic and secure it with a rubber band. Put an ice cube on top of the plastic and condensation will form. Have the students talk about how this relates to the water cycle they drew.

Field trip

Tell the students that they are going to discover how the water cycle affects Utah. A Garden guide will tell the students more about water issues in Utah and show them the Garden. Have the students look for examples of condensation and evaporation at the Garden (sprinklers) and where water runs off (“Rain Gardening” exhibit). The students will examine soils (“Watering Drop by Drop” and “Signature Soils” exhibits) and erosion and their connection to water and plants. They can also observe plants and decide which ones are better adapted to live with less water (High Mountain Desert and Woodland Landscapes). Have the students make up a classification system for the plants they observe at the Garden. You may also ask them to draw a picture of the site using light and shadow and draw a second picture using shapes and colors to represent elements of the landscape.

Follow up

Have the students look at news about water from local and global sources. How does water affect life in these places? How might it affect Utah? Have each student write a prediction about how water may affect the future of Utah.

Assessment:

The students’ water cycle papers, classification systems, and predictions of how water use can impact the future of Utah will indicate whether they understand the concepts presented in this activity.