THE AMERICAN SOUTHWEST: ARE WE RUNNING DRY?
WATER RELATED HEALTH ISSUES

Pre-Screening Activity 1
Personal Water Usage Realization

Overview:
After completing this pre-screening activity, students will be able to identify personal water usage and compare it to facts online at the USGS Water Science for Schools Web site (ga.water.usgs.gov/edu/). They will predict the path water takes to their house in an extension activity.

Objectives:
- Students will collect and analyze their own water usage
- Students will construct a graph illustrating the distribution of their personal water usage
- Students will identify ways to conserve water
- Students will electronically visit Water Science for Schools and examine water data

Materials:
- Science Notebook/Paper
- Pencil
- Rulers
- Graph Paper
- Water Usage Chart for common activities and the water usage (Data provided in the background section)
- Colored Pencils
- Computers (with Internet Connection)

Background:
Personal use of water on a daily basis is often underestimated and taken for granted. Creating an awareness of clean water usage and the path it takes to the home is critical. Through the tabulation of personal situational use of water for one day and the calculation of the average amount of water used during each activity, students will develop a conceptual framework for clean water.
(USGS Water Science for schools http://ga.water.usgs.gov/edu/sacsq.html)

A typical person in an American household may use 80-100 gallons of water and include the following activities:

Washing hands: .25 gallons (.95 liter)

Brushing teeth: 1 gallon (3.8 liters)

Flushing toilet: 5 gallons (19 liters)

Laundry: 30 gallons (114 liters) (per load)

Showering: 30 gallons (114 liters)

Taking a bath: 40 gallons (151 liters)

Washing car: 20 gallons (76 liters)

Washing dishes (by hand, with water running): 10 gallons (38 liters)

Washing dishes (by machine): 15 gallons (57 liters)

Watering lawn: 240 gallons (908 liters) (30 minutes)

http://www.nationalgeographic.com/gaw/frwater/frwater_58_teacher.html

(Add 0.5 gallon [1.9 liters] of water taken in through food and drink for the day.)

Developing an awareness of water usage and its importance to life are essential as the drought in the American Southwest demands conservation efforts.

Where does all this water come from? The extension for this activity encourages students to diagram the path water takes to their own faucet.

Activity: Part 1

1. Ask students why is water important? Is there enough water? How do we get the water we use? Brainstorm all the ways students use water each day and list these on the board.

2. Estimate how many of gallons of water students use each day. Each student should record his/her estimate in a science notebook.

3. Discuss student estimations.

4. Explain to students that they are going to keep a water usage log. Every time that they use water in the next 24 hours, they need to write it down. (You may want to require a longer period of time for recording to collect more data. This will incorporate more data analysis.) Students may construct a data table based on the class generated list to tally their usage, for example:

Activity	Number of Times	Gallons/Liters Per Activity (Added after log is completed)	Total Gallons/Liters (Added after log is completed)
Brushing Teeth			
Shower			

Activity: Part 2

1. Ask students to share the water usage data collected. Are there any patterns? Which activity occurred the most often? Do you think that activity used the most water?

2. Provide students with the average amount of water used for each activity. Students should calculate the number of total gallons used for each activity and then calculate the total number of gallons used in sone day.

3. Construct a graph to illustrate the types of activities and the amount of water used for each. Analyze the information collected. What does it tell you about how you use water?

4. Share graphs. Discuss questions students have about water usage and list these on the board.

5. Visit http://ga.water.usgs.gov/edu/index.html Water Science for Schools to locate answers to student generated questions.

6. Share questions and answers. Discuss the need for conservation.

Evaluation Rubric:

Exceptional	Acceptable	Unacceptable
Water usage table is thorough and neat; Calculations are accurate; Graph is appropriate, labeled, colorful, and results are analyzed	Water usage table is complete; Calculations are accurate; Graph is appropriate and labeled	Water usage table is incomplete; Calculations are inaccurate or incomplete; Graph is inappropriate, inaccurate, or incomplete

Extension Activity

1. Ask students how water gets to their house.

2. Working with a partner, create a diagram of the path water takes from its source to their faucet.

3. Compare their diagram to Dryville's needs for water located at: http://ga.water.usgs.gov/edu/dryville.html Compare Dryville's story to their own scenario.

4. Share illustrations and analysis of the two water transportation systems.