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Lesson 2: Understanding and Conserving Community Water Resources

Objectives

Students will:

- Learn about the importance of water conservation
- Discover ways to conserve water in the landscape
- Brainstorm how to share new knowledge with others

Standards Addressed: [click here](#)

Central Concepts

- There is a finite amount of water on earth
- Water changes form (gaseous, liquid, and solid states) as it moves through the water cycle
- Pollutants taint water and decrease its quality, decreasing the amount of clean water available for us to use
- Our community's clean water supply is limited, so we need to be careful how we use it
- Using landscape techniques that conserve water is an important contribution to the community



Materials

- Books and Internet resources for research

Discussion Topics

- Introduce or review the water cycle. Excellent resources are available from the [U.S. Geological Survey](#).
- Ask you students, *How much of the water on the earth is fresh water?* (Three percent. For more details, visit [U.S.G.S.: Freshwater Storage](#))
- *Who uses water?* (All living things depend on water) *How do humans use water?* (for drinking, food preparation, watering plants and gardens, cleaning, sewage elimination and processing, manufacturing products, etc.)
- *What are some of the current issues related to our water supply?* (See the [June/July 2004 issue of National Wildlife Magazine](#) for some topics.)

Activity

1. Use this [interactive diagram of the water cycle](#) to introduce your students to the water cycle. They should come to understand that the supply of fresh water for sustaining life on this planet is very limited.
2. Ask your students, *Where do you think the water we use in our town/city comes from?* (e.g., a surface source such as a lake or reservoir; ground water accessed via wells). *What are some questions you have about our water supply?* Brainstorm as a class, then do some research to find the answers. Here are some questions to get you started:
 - Where does the water we use in our homes, schools, and businesses come from?
 - Is this a renewable source? If so, how is it renewed?
 - How do we protect the source from pollutants? How is the water quality monitored?
 - How much water does our town/city use every month?
 - Is there data available about how the water is used?
 - What are some of the important issues facing our water supply?
 - What is the most efficient way to water our garden?

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Staff at your municipal water department or state's department of water quality are expert sources of information, and may offer to come and answer questions in person.

3. Ask students to use the [National Wildlife Federation's water calculator](#) to estimate the amount of water they use each day. Graph the data and calculate a class average.

4. As a whole, we Americans use a lot of fresh water on our landscapes. Estimate the amount of water you use to maintain your youth garden. If you hand water with a hose or use leaky-pipe irrigation hose, estimate by determining the flow rate per minute and multiply times the number of minutes you water. If you use sprinklers, place short, straight-sided containers (such as tuna cans) throughout the garden. When you've finished watering, use a ruler to measure the inches of water in the can. If you use drip irrigation, find out the flow rate of the emitters (most are calibrated at .5 or 1 gallon/hour) and multiply by the number of hours you operate the system.

5. Ask students for suggestions for conserving water in the landscape. Check out these resources to expand the list of ideas:

[EPA's Things You Can Do](#)

[EPA's Water for Kids](#)

[Water Saver Home](#)

[Water Conservation from the National Resources Conservation Service](#)

These are some of the suggestions they're likely to find:

- Use native plants and species with low water needs
- Use mulch to decrease water evaporation from the soil
- Water early in the morning to avoid loss due to evaporation
- Do not water when it is windy
- Collect rain water to use for irrigation

6. Determine if you can implement any of the conservation techniques in your youth garden. Develop a plan and schedule for implementation.

7. Conclude your research by asking youth to write a position paper to address how being responsible for our personal water use is a service to the community and environment. Follow up by asking them to brainstorm ways to promote water conservation practices to others (e.g., create brochures; design a Web site; write articles for newsletters; write letters to the paper; develop short public presentations.

Extensions

Science: Involve your students in a local water-monitoring project. Many communities have volunteer groups monitor the condition of streams, rivers, lakes, reservoirs, estuaries, coastal waters, wetlands, and wells. Visit the [National Directory of Volunteer Monitoring Programs](#) to locate contacts in your area.

History/Social Studies: Introduce youth to the Dust Bowl of the 1930's. This agricultural and climatic disaster contributed to a vast economic crisis – the Great Depression. Drought conditions and improper farming practices led to massive dust storms that drove millions of impoverished people to leave the Midwest. It spotlights the importance of water conservation and proper land use to our economy and society. For information and support materials visit

[Surviving the Dust Bowl](#)

[Drought in the Dust Bowl Years](#)

Social Studies: If you live in a region where water issues are a daily reality (e.g., agricultural water rights, water-use restrictions, pollution) invite students to explore the historical, political, and economic pressures that led to the current situation. Interview people who are involved in the issues, such as farmers, water conservation agencies, water rights advocates, and so on.

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