Program Description

Water is vital to life. Yet, contamination and misuse threaten our available resources and, as populations expand, the search for new sources of water intensifies. Travel to Canada, the United States, Mexico, and the Middle East to look at the natural history of water and to investigate the latest technologies used to make available water safe.

Onscreen Questions

Part I—Before watching the video
- Within an ecosystem, all living things depend not only on water, but on each other as well. As you watch the program, pay attention to examples of this interdependence between water, plants, and animals.
- Note how scientists monitor ecosystems to be sure they are working effectively.
- What are some signs that an ecosystem is in danger?

Part I—After watching the video
- Discuss the ways humans have tried to control the natural forces of water, such as with dams.
- How does the creation of dams affect the surrounding environment?
- What are some of the advantages and disadvantages of dams?
- In what ways has human interference with nature been unsuccessful or harmful?

Part II—Before watching the video
- Think about the many different, essential roles that water plays in your life.
- As you watch the program, pay attention to the role of water in daily life throughout the world.
- Consider the effects on a community if its water were contaminated or restricted by political conflicts.

Part II—After watching the video
- The greenhouse technology discussed in the program could help arid regions to grow plants with only a fraction of the water needed to irrigate open fields. How could this technological advance change life in the Middle East?
- Discuss why water is such a point of political contention in this part of the world.
Lesson Plan

Student Objectives

- Research ways in which water has influenced American history.
- Present a mock telecast describing a water-related event or connection.

Materials

- Computer with Internet access
- Library materials on water, water pollution and conservation, and bodies of water
- Paper, pens

Procedures

1. Review with the class some of the ways water has affected and continues to affect world history and affairs. Do people tend to see themselves as part of the natural world and the water cycle? Why or why not? How has this perception, or lack thereof, influenced our treatment and use of water?

2. Ask students if they think water has played an important role in U.S. history. In what ways has it contributed to the nation’s success and survival?

3. Invite students to brainstorm a list of some of the ways water has played a crucial role in our country’s history. The list might include:
   - Discoveries by such explorers as Hernando de Soto, La Salle, Vasco Nunez de Balboa, Henry Hudson, and John Smith
   - The search for the Northwest Passage
   - Lewis and Clark’s expedition
   - The Colorado River and the Grand Canyon
   - The westward movement
   - Floods, such as the Johnstown flood of 1889
   - Droughts, such as the one that produced the Dust Bowl of the 1930s
   - Construction of the Grand Coulee Dam or other large dams
   - The creation of literature, such as *The Adventures of Huckleberry Finn*
   - Recent controversies concerning demand for water in Southern California and around Las Vegas, Nevada
   - The 1989 Exxon Valdez oil spill in Prince William Sound off the coast of Alaska.

4. Select a few of the events or categories on the list, and discuss the role played by water or a particular body of water in each one.
5. Tell students they are going to work in groups to create a mock newscast about one of the events on the list. Encourage them to include as much important information in their newscast as possible, such as answering the questions who, what, when, where, why, and how, and including statistics, vivid descriptions of scenes, and possibly live interviews. Remind them to include coverage of how their subject has affected or influenced American history.

6. Divide the class into groups, and have each group select an event from the list to research.

7. Groups should use library and online resources to research their topic. The following Web sites offer useful information along mainly environmental, rather than historical, lines.

   - **Kids in the Creek**—Sponsored by the Bonneville Power Association (BPA), this site focuses on healthy streams and watersheds. Students can also search the BPA site for information on the construction of the Bonneville Dam (1938) and how the dam supplies power to the Pacific Northwest.
     

   - **Give Water a Hand**—Developed at the University of Wisconsin, this Web site offers sound environmental management strategies.
     
     http://www.uwex.edu/erc/gwah/

   - **Blue Thumb Project**—Maintained by the American Water Works Association, this site inspires people to take positive actions for water, or exercise their “blue thumbs.”
     
     http://www.awwa.org/Advocacy/BlueThumb/index.cfm

   - **The Quality of Our Nation’s Water**—This Environmental Protection Agency site links to a variety of resources on our nation’s wetlands, oceans, rivers, watersheds, estuaries, and beaches.
     
     http://www.epa.gov/ebtpages/water.html

   - **Water Science for Schools**—This U.S. Geological Survey site includes information on water basics, uses, and activities.
     
     http://ga.water.usgs.gov/edu/index.html

8. When student groups have completed their research and organized their information, have each present its newscast to the class. After each presentation, have the group field questions from the audience.

9. Hold a final discussion about water and America. Do students think that the U.S. is doing enough to conserve water and to ensure clean water supplies well into the future?

**Assessment**

Use the following three-point rubric to evaluate students’ work during this lesson.

- **3 points:** Students actively participated in class discussions; demonstrated initiative in researching their group’s subject and preparing an effective report; took an active role in presenting a well-organized and informational mock newscast to the class.
• **2 points:** Students participated in class discussions; demonstrated some initiative in researching their group’s subject and preparing an effective report; took some role in presenting a fairly well organized and somewhat informational mock newscast to the class.

• **1 point:** Students participated little, if at all, in class discussions; demonstrated little initiative in researching their group’s subject and preparing an effective report; took no role in presenting a mock newscast to the class.

**Vocabulary**

**aquifer**
*Definition:* A water-bearing bed of permeable rock, sand, or gravel capable of yielding considerable quantities of water
*Context:* Beneath our feet, water permeates rock and gravel to form aquifers.

**evaporate**
*Definition:* To dissipate as a visible cloud or in particles too minute to be visible
*Context:* In the water cycle, water evaporates, forms clouds, rains, and evaporates again.

**irrigate**
*Definition:* To supply with water by artificial means
*Context:* Water from rivers is often used to irrigate nearby fields.

**percolate**
*Definition:* To cause a liquid to pass through a permeable substance
*Context:* As water percolates through the soil and cracks in rocks, it picks up mineral matter.

**reservoir**
*Definition:* A place where something is kept in store
*Context:* To create reservoirs, precious valley bottoms are often flooded, drowning farm and forest alike.

**toxin**
*Definition:* Any of various poisonous substances that are specific products of the metabolic activities of living organisms
*Context:* High levels of toxins in the eels brought the fishery to a near standstill.

**Academic Standards**

**Mid-continent Research for Education and Learning (McREL)**
McREL’s Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education addresses 14 content areas. To view the standards and benchmarks, visit link: [http://www.mcrel.org/compendium/browse.asp](http://www.mcrel.org/compendium/browse.asp)
This lesson plan addresses the following national standards:

- Geography—Environment and Society: Understands how human actions modify the physical environment, Understands how physical systems affect human systems, Understands the changes that occur in the meaning, use, distribution and importance of resources
- Language Arts—Writing: Uses the general skills and strategies of the writing process, Gathers and uses information for research purposes

The National Council for the Social Studies (NCSS)
NCSS has developed national guidelines for teaching social studies. To become a member of NCSS, or to view the standards online, go to [http://www.socialstudies.org](http://www.socialstudies.org)

This lesson plan addresses the following thematic standards:

- People, Places, and Environment
- Science, Technology, and Society
- Global Connections

Support Materials
Develop custom worksheets, educational puzzles, online quizzes, and more with the free teaching tools offered on the DiscoverySchool.com Web site. Create and print support materials, or save them to a Custom Classroom account for future use. To learn more, visit

- [http://school.discovery.com/teachingtools/teachingtools.html](http://school.discovery.com/teachingtools/teachingtools.html)