

Legacy Ecology Lesson Plans(Grades 3-5)

THE VALUE OF WATER

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SUBJECTS: Science, Math

TIME: Two class periods, ongoing

MATERIALS: [Water Tally Worksheet](#)

[Water Dollars](#)

collection box

[Water Use Chart](#)

a two-liter soft drink container

OBJECTIVES

The student will be able to:

1. Determine the amount of water used or misused daily in a home.
2. Identify certain ways to conserve the use of water.
3. Discuss why water is essential for day-to-day living and how water contributes to the standard of living for Americans.

BACKGROUND

Water conservation is important in all states and for all individuals. Because water has so many uses, the more water we conserve, the more water there is available for other uses. Many homes waste water daily. This can be prevented with a very simple method as well as becoming "water conscious". We use water in everyday life. If you thought water was just for bathing, drinking, and swimming, then you're wrong!

Water Facts:

- It takes 1,800 gallons of water to produce the cotton in one pair of blue jeans.
- It takes 400 gallons of water to produce the cotton for one shirt.
- It takes 4,000 gallons of water to grow a bushel of corn.
- It takes 11,000 gallons of water to grow a bushel of wheat.
- It takes 4,000 gallons of water to produce one pound of beef, so it takes 1,000 gallons of water for a Quarter Pounder at McDonald's.
- It takes 16.5 gallons of water to manufacture a 12-ounce Coke.

ADVANCE PREPARATION

1. Copy five pages of the [Water Dollars](#) for each student. Label a cardboard box "Water Bank" and place it where the students can see it. Fill the two-liter soft drink container with water and place it next to the "Water Bank."
2. Make a water-use poster. See [attachments](#).

PROCEDURE

(Setting the stage)

1. Discuss the useful and wasteful practices of water use.

2. Explain to the students that they are going to examine how each uses water by playing a water game. To learn about water use, each student will be required to pay for the water he/she uses with the water play money.

(Activities)

1. List on the chalkboard as many uses of water as possible. The poster provides some general categories. Have students identify the type of water use for each item on the list... in water, on water, and with water. Example: Students swim in water, boat on water, and wash with water.
2. Pass around the two-liter soft drink container. Explain that the soft drink container contains two liters of water.
3. Give each student five sheets of [Water Dollars](#). have each one cut out the play money and write his/her name on each dollar. Not that on each page there are three one-liter, three five-liter, tow 10-liter, and two 20-liter water dollars- a total of 78 liters of water dollars per page. Students will start with a total of 390 water dollars. They will be required to make "change" for certain water uses.
4. Each time a student uses water at school or his/her family uses water at home, it will cost the listed amount of water dollars specified on the "[Water Use Chart](#)." Have students pay before using water at school and in the morning after using water at home. Place payments in the cardboard box labeled "Water Bank".
5. Have students keep a record of how their dollars are spent.
6. Pass out the [Water Tally Worksheet](#) and have students take it home to determine if their homes conserve or waste water.

(Follow-up)

1. After students do their home tally, combine student results and graph. Brainstorm how homes could conserve water use. Examples should include:
 - Not running water while brushing teeth
 - Not filling the bathtub when bathing.
 - Running a full load of dishes in a dishwasher.
 - Installing flow restrictors to showers and faucets.
 - Fixing leaky toilets.
 - Installing water conservation devices in toilets.
2. Evaluate the graph and tally worksheets for completeness and accuracy.
3. Play the water game for three more days. Follow the same procedure, except do not list the water uses on the chalkboard. This time, at home and at school, have the students try the water-saving ideas identified by the class. Each time a student uses water at school or his/her family uses water at home, this usage will cost the student the dollar amount identified on the Water Use Chart. if water-saving measures are introduced, refund to the students the dollar amounts listed in the column titled "Potential Savings in Dollars." As before, each student begins with 390 water dollars. On the fourth day, have the students compare the water dollars they had remaining after playing the water game the first time with the water dollars remaining after playing the game the second time.
4. Have each student count the number of water dollars he/she has remaining on the fourth day. Discuss the possible consequences of running out of water dollars. Use the following questions for discussion:
 - What if there are no water dollars left?

- What can you do to get more water dollars?
- Is it fair to share water dollars with someone who used all of theirs?
- How could you have saved water dollars? If you played the game again, would you play any differently?
- Who used the fewest water dollars and why?

5. Have the students identify the uses of water they feel are the most important and then discuss ways to conserve water. Other water-saving ideas not on the "Water use Chart" include:

- Sweep patio or driveway instead of washing it.
- Install water-saving shower heads.
- Only get water in restaurants when you are going to drink it.

EXTENSIONS

1. Make an appointment to meet the public service director or community affairs director of a local TV station or radio station. Then create a Public Service Announcement (PSA) about the importance of conserving water and ways homeowners can conserve.
2. Take a field trip to a local water sewage treatment plant and recycling center.
3. Determine the amount of water out of a faucet, shower head, or hose by using a calibrated bucket. Watch and measure the volume of water that flows out in one minute. Your actual figures may differ from those listed on the Water Use Chart.

RESOURCES

Kids for Saving Earth. (1994, May). Chemtology Magazine, (Vol. 23. p. 3).

Write for posters: American Water Resources Association 5410 Grosvenor Lane, Suite 220 Beheads, MD 20814-2192 Telephone (301) 493-8600

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