



It's a Watery World!

LESSON

GRADE LEVEL 6-9

CATEGORY Water, Wetlands
and Watersheds

TOPIC Watersheds

LENGTH

One 60-minute period

MATERIALS

11x17 paper

SETTING

Classroom

GROUP SIZE

Individual, pairs, small teams

SKILLS

Description, discussion, classification

SUBJECTS

Language Arts, Social Studies, Art

Overview

Students consider different ways they use water on a daily basis through collage or a "Scattergories" type game and then create crosswords using water words to demonstrate their understanding of related vocabulary.

Objectives

Students will be able to:

- Recognize various ways we use water in on a daily basis
- Understand the importance of water to humans

Background

Humans need water. Our bodies need water for ingesting food, eliminating wastes, maintaining constant body temperature, digesting, reproducing, and enabling all the biochemical pathways in our cells. Without water intake, these systems stop functioning in a matter of days. We notice effects even after one day without water. Humans need clean water; many aspects of the worst human illnesses and diseases are caused by water borne pathogens (harmful microorganisms). Bacteria, viruses, and other microorganisms require water to survive and reproduce. When abundant pathogens contaminate water they threaten our health.

Water is part of all facets of our daily lives. Examples include:

- cleaning: ourselves, clothes, dishes, pets, houses, goods
- transportation: people, resources, materials and goods
- agriculture: food for humans and food animals
- cooling / heating homes and industry
- waste removal: municipal sewage systems, factory dumping
- recreation: boating, swimming, gardening
- energy: hydroelectric dams, water wheels
- industrial use: everything from aluminum smelting to car manufacturing

Procedure

1. Ask students to brainstorm in their notebooks all the places that they use water in a day. Encourage them to think about how they use water daily at different times throughout the year and the different seasons.
2. Have students share their thinking with a partner. After a few minutes for students to look at commonalities in their thinking, ask them to share their ideas with the class. The teacher can record these ideas on the chalkboard or on a piece of chart paper that can be posted on the wall for reference during the unit. These words can form the basis of a "Water Word Wall" for younger students.
3. Water is Life. Explain to students that we use water in almost all aspects of our life in one respect or another. We need water to survive and we humans use water for work, play and survival.

For younger students, ask them to draw a picture of a giant raindrop. Using photographs cut from magazines, students then create a water collage that shows many different ways that humans use water.

For older students, explain that they are going to show their "water wisdom" by playing a whole-class game of "Watergories". Divide the class into groups of three or four and give each group an 11 x 17 page of blank paper. One person is designated as the recorder and writes "W A T E R U S E" evenly spaced across the top of the page and then puts the categories of "recreation", "domestic use", "industry", and "transportation" evenly spaced down the left-hand side of the page so as to create a grid format. When the teacher says to begin, each group must brainstorm and record words for each category (recreation, domestic, etc.) that begin with the letters W, A, T, E, R, etc. For example, under the "s" in wateruse, for the category of recreation, students might record "scuba-diving" or "skiing" as these are both recreational activities that begin with the letter S. Under the letter T in the category of industry (or transportation) they might record "tanker" relates to a way in which those categories are related to water. The teacher gives the groups a predetermined amount of time (approximately 10-15 minutes); at the end of the game, each team counts up the number of words they have written in their chart. The class should decide ahead of time whether or not it is acceptable to use words with water already in them (for example, "waterslide").

4. Making connections. Now that students have studied the water cycle and have identified all the different ways in which we use water, have them create a tableau where they demonstrate some aspect of their daily water use and the part of the water cycle to which that use is most closely connected. They can either make group presentations to the class or all groups could be acting out their activities at the same time and the teacher freezes all groups at the same moment. The teacher then walks from group to group asking a student from each to explain to the rest of the class what is happening in their scenario.

Assessment

1. Have students use grid paper to create a crossword puzzle that includes the vocabulary and concepts covered in Activity 1 and 2. Brainstorm with students the criteria for a powerful crossword puzzle.

Criteria will include:

- Words across and down
- Definition or synonym clues for each word
- Words that connect other words in the puzzle

2. **Ticket Out the Door** - Give each student a sticky note and ask them to write one thing they learned or are wondering about based on these activities. This information could be added to a class KWL poster that is on-going for the unit.

Extensions

Do we all use water in the same way? Brainstorm questions with students that will help them examine whether there are differences (cultural, historical, etc) in the way different communities or cultures use and value water. These questions can form the basis of independent research that could be included in students' mind maps or power point presentations.

Resources

For a discussion on using questioning as a teaching strategy, see *Engaging Readers and Writers with Inquiry* by Jeffrey D. Wilhelm (Scholastic, 2007).