

Wad-a-Watershed

Purpose: Students will be able to understand the basic geography of a watershed, how water flows through the system and how people can impact the quality of our water.

Time: 45 min

Level: 4

Materials:

- 8 ½ x 11 paper (one sheet for each student)
- 4 different colors of water soluble markers
- Spray bottles of water

A **watershed** is the area of land where all of the water that falls in it and drains off of it goes into the same place.

<http://ga.water.usgs.gov/edu/watershed.html>



Minnesota Science Standards and Benchmarks

4.3.2.3.1 Identify where water collects on Earth, including atmosphere, ground and surface water, and describe how water moves through the Earth system using the processes of evaporation, condensation and precipitation.

Background

A watershed is a geographic area in which water, sediment and dissolved minerals all drain into a common body of water like a stream, creek, reservoir, or bay. A watershed includes all the plants, animals and people who live in it, as well as the non-living components like rocks and soil. We are all part of a watershed, and everything we do can affect the surface and ground water that runs through this system.

Procedure

1. Give each student an 8 ½ x 11 sheet of paper and instruct them to crumple the paper into a tight ball. Gently open the paper, but don't flatten completely. Tell students that this piece of crumpled paper represents a watershed. Use the background information to define with the students the word watershed. On their paper watershed, the highest points represent hills and the lowest wrinkles represent valleys.
2. Choose one color of water-soluble marker and have all students mark the highest points on their watershed (crinkled paper). Discuss with students the "high points" in your community and also areas of high elevation that students have visited.
3. Discuss with students that most bodies of water are in lower elevations. Choose a second color (preferably a shade of blue) and mark the places where different bodies of water might be: creeks, rivers, lakes, etc. . Have students think of creeks, rivers, and lakes that they have visited and describe the land around these water features.
4. With a third color mark two to three spaces to represent human settlements: housing, factories, shopping centers, office buildings, schools, etc. Discuss with students what impact these areas might have on the bodies of water (Use the water for drinking, sanitation, etc, actions such as lawn irrigation, pollution, etc. can impact the water sources)
5. With a fourth color, mark two to three agricultural areas where plants and/or animals could be raised. Discuss with students the needs of these plants and animals (water, food, shelter) and also how the actions of the animals might impact the water.
6. Use the spray bottles to lightly spray the finished maps. The spray represents rain (precipitation) falling into the watershed. Discuss students' observations about how water travels through the system.
Some questions to ask:
 - a. What changes did you observe in the maps?
 - b. Where does most of the rain fall?
 - c. What path does the water follow?
 - d. What happens to the human settlement areas – are they in the way of a raging river or crumbling hillside?

- e. How would the flow of water through a watershed in real life affect our choice of building sites?
- f. What happens to the agricultural areas – would the water flowing from these areas impact any other areas?
- g. What actions do you think farmers take in real life to protect the water quality?
- h. How does your map demonstrate the idea of a watershed?

Additional Activities

- Research your local watershed district and invite a representative to speak with your students about watershed management.
- Contact your local Natural Resource Conservation Service and/or Soil and Water Conservation District to see if there are educational resources available, guest speakers and possibly an EnviroScape demonstration model.
- Invite a local farmer to visit your classroom and talk with your students about how he/she uses different conservation methods to protect the water supply.

Resources

- The United States Geological Survey website has a wide variety of watershed educational resources.
<http://ga.water.usgs.gov/edu/watershed.html>
- The University of Minnesota's Bell Museum hosts an online Watershed Game.
<http://www.bellmuseum.umn.edu/games/watershed/>

Adapted from Illinois Agriculture in the Classroom

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