

WATERSHED WALK

GRADES K-5

This activity was designed as a companion for the music video “We All Live in a Watershed.”

BACKGROUND

A watershed is an area of land where the water drains to a common low point. We name watersheds after the waterbody where the water collects, such as the Mississippi River Watershed. Watersheds can be as large as the Mississippi River Watershed (the fourth largest in the world), or as small as the area of land draining to a small creek in your neighborhood. The video demonstrates rain flowing over land, into a river, and to a lake at the lowest point. When it rains on the cornfield on the hill, the dots show the water moving either right or left. This high point where the water either goes one way or the other is the boundary between two adjacent watersheds, as the water always flows downhill.

The video also shows who lives in a watershed and how that can affect the water quality. Every living thing lives within a watershed, including humans. How we use the land or what we put on our land will affect the water. A cornfield’s loose brown soil can erode into the water, a factory could be leaking dangerous chemicals into the water (pink dots), the urban area could be leaking oil or litter from the streets, and cows (and other animals) could be pooping in the water which cause bacterial problems. Any pollutants that the water obtains moving over the land, anywhere in the watershed, will accumulate in the final collection point.

It is important to understand the quality of our land; how we use it directly affects the quality of our water. The video shows the different animals living in the watershed, and like humans, they depend on natural resources such as soil and water for survival. There are also vast amounts of living organisms in the soil (e.g. worms and germs) that affect how fertile the soil is and how well water will move through and over it. There is no new water on Earth, but instead water is continually moving through the water cycle over time.

MATERIALS

Map of school grounds for each student
Clipboard or books to take outside for surface to write on
Pencils
Maps of local area, region and the US

DID YOU KNOW?

World’s largest watersheds:

- | | |
|----------------|--------------------------|
| 1. Amazon | 2.7 million square miles |
| 2. Congo | 1.4 million square miles |
| 3. Nile | 1.3 million square miles |
| 4. Mississippi | 1.2 million square miles |

TEACHER PREPARATION

Use the Iowa DNR Watershed Atlas (http://programs.iowadnr.gov/ims/website/water_monitoring/viewer.htm) to locate your local watershed. You can print maps from this site for local and regional reference. Other maps you might find useful are city maps, county plat maps, and state maps.

Draw a simple map of the school grounds that include details such as buildings, parking lots, trees, hills, ditches, etc. Make enough copies for every student.

INSTRUCTIONS

1. In the classroom use maps of the local area to show students rivers and creeks within the vicinity. Ask students how the water gets in the rivers, and ask where the water moves once the rain hits the ground. Locate the school on a local map and ask the students if there is any connection between the schoolyard and the rivers.
2. Distribute copies of the school grounds map. Go over it as a class so everyone understands the symbols and how to read it.
3. Take the students for a walk around the school with their maps and pencils. Have them use arrows on their maps to show which way water will run over a piece of land. Arrows should point down hills, off parking lots and rooftops; if there is a creek or ditch with water, note which way the water is flowing. Let the students explore and see if there are low wet spots with evidence that water collects there, or high dry spots where the water will run downhill. Have the students pick a main spot where water is collecting or exiting the school grounds or what direction most of their arrows are pointing. Ask them where that water goes next.
4. Back in the classroom relate their maps of the school grounds to local maps of the area that show streams and rivers. Have the students continue their arrows to the appropriate waterbody.
5. Using the video as a reference, define a watershed as an area of land where all the water drains to a common point. The land the school is on drains to a particular waterbody, and we name watersheds after the waterbody in which the water collects. Explain that just as we each have a home address, we also have a watershed address that describes where our water goes.
6. Using bigger maps when necessary but still locating the school or town as a starting point, follow the waterbody to the next and so on, eventually leading to the Mississippi River. Use a map to show the Mississippi River Watershed and explain it's the fourth biggest in the world, and that most of the US drains into it leading to the Gulf of Mexico. Using the Mississippi River Watershed as an example, explain that the high points form the boundaries of the watershed. On the west side lie the Rocky Mountains and on the east the Appalachian Mountains. While there are not mountains around your school, there are still high points where water will flow one way or the other at the tip.

7. We all live in watersheds and have watershed addresses. Have the students discuss how we might change the water. Discuss pollutants we as humans might put on land that water can wash away (litter, oil from cars, nutrients for gardens and crops, chemicals for weeds, etc). Ask the students to find sources of pollution from the school grounds – fertilizer on grass, chemicals inside the building for cleaning, litter, etc.

8. Have the students brainstorm about what else lives in a watershed (the video mentions ants, worms, germs, and birds, but all living things do). Discuss how these other living things interact with humans, the land, and the water.

9. Finally ask the students where drinking water comes from. Remind them there is no new water on the planet and water is recycled, so water they drink once was rain, flowed overland, or moved underground. We are all connected through watersheds and the water cycle!

DISCUSSION/REVIEW QUESTIONS

What is a watershed?

What is the school's watershed address?

How is the land used in the watershed?

What is the highest point and lowest point?

How might the land use in the watershed affect the water quality?

- Science (Grades 3-5)
 - Science as Inquiry
 - Use evidence to develop reasonable explanations
 - Earth & Space
 - Understand and apply knowledge of processes and changes on or in the Earth's land, oceans, and atmosphere
 - Life Science
 - Understand and apply knowledge of organisms and their environments
- Social Studies (Grades 3-5)
 - Geography
 - Understand the use of geographic tools to locate and analyze information about people, places, and environments