

DELINEATING CLAY WATERSHEDS

GRADES 3-5

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

Modeling clay or Play-Doh
Brightly/contrasting colored thread
Dropper
Shallow pan or plate to work on

Iowa DNR provides an interactive watershed atlas where you can locate your local watershed at programs.iowadnr.gov/ims/website/water_monitoring/viewer.htm.

INSTRUCTIONS

1. As a class or in groups of 2-4, use the clay to create a landscape. The landscape shouldn't just be flat but include mountains and valleys. Create this on the pan/plate to limit the mess.
2. Use a dropper to release one water droplet at a time on different areas of the landscape. Observe how and in what direction that water droplet moves over the land.
3. Use pieces of thread to represent the boundaries of different watershed within the clay landscape. The thread should go along the highest points of the landscape and identify an area where all the water travels to the same point. When unsure if an area of land is in the same place, use the dropper to test.
4. Using the IDNR Watershed Atlas, show the class their local watershed. Talk about the boundaries of that watershed and what might create those high points. Use larger maps to show the entire state and then the Mississippi River Watershed, which is the fourth largest in the world.
5. Optional: Discuss what else might be moving with the water and collecting at the drainage point. Common pollutants in Iowa's water bodies include sediment, nutrients, chemicals, and bacteria. Discuss how these pollutants from Iowa are contributing to the hypoxic (dead) zone which exists at the Gulf of Mexico draining point.