

PAPER 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

White computer paper (2 sheets for each group)
Water-based markers such as Crayola
Spray bottles
Cookie sheets or similar pans to catch excess water

DISCUSSION QUESTIONS

What is a watershed?
How are watersheds divided?
How many watersheds were on your landscape?
What is a pollutant?
How do pollutants end up in our water?
Where do pollutants collect?

INSTRUCTIONS

1. Give pairs of students two pieces of paper. Have them crumple them and then smooth them most of the way while still being able to distinguish between high points and low points. Explain this is their landscape filled with mountains and valleys and they will find out where the rivers and lakes will be.
2. Using blue markers, have the students color along the ridgelines on both sheets of paper.
3. Take the first piece of paper and place it in a pan. Use a spray bottle to simulate rainfall all over the paper. Observe where the blue marker (rain) runs. Have the students identify streams or lakes that form. Explain that the high points in their landscapes are watershed boundaries because the blue marker ran right or left to different streams. Reference the video in defining a watershed by explaining water will move over the land to collect into water bodies such as the lakes and streams (in the valleys) on their papers.
4. On the second piece of paper the students will include human activities. Use brown markers for farmland, red for factories, black for streets and buildings.
5. Put the second sheet in the pan and again use spray bottle for rain. Along with the blue, have the students observe what other colors are in their streams and lakes.
6. Have the students brainstorm what these other colors could be in real life. Discuss sources of pollution – brown from farmlands can be soil erosion, red can be chemicals from a factory leak, and black can be oil and litter that is on the streets and parking lots. Explain that every watershed has a low point where all the water collects, and that point also collects all the pollutants the water has taken with it on its path over the land.