

Activity: Wad-a-Watershed

Activity Level: Intermediate

Source: Adapted from *Aquatic Outreach Institute "Kids in Creeks" curriculum*

Purpose

Explain a watershed, how water flows and how people impact the quality of our water.

Example Topics It Supplements

Pollution; topography

Activity Snapshot

1. Organize and Prepare Supplies
2. Read Background Information
3. Interest Approach
4. Conduct Activity
Students will create a small watershed by “wadding up” a piece of paper. They will highlight areas of the watershed using markers of different colors. Using a spray bottle of water, students will “rain” and move water across the watershed and monitor what happens.
5. Ask follow up questions and make the connection to agriculture.
 - What changes did you observe in the maps?
 - Where does most of the rain collect?
 - What path does the water follow?
 - How does this map demonstrate the idea of a watershed?

State Standards It Supports

SS 5.3.3.a—Explain how physical processes shape the United States’ features and patterns
SC 5.2.2.b—Describe changes in motion due to gravity.
SC 5.3.3.d—Recognize organisms cause change in their environment.
SC 5.4.4.a—Describe how slow/fast processes change Earth’s surface.

Materials

- 8 1/2 x 11 paper—1 per student
- Different colors of water-soluble markers—3 per student
- Several spray bottles of water

What’s the Connection to Agriculture?

We are all part of a watershed. Human impact and weather has an impact on the watershed. Pollutants, runoff, and soil erosion all affect the water in a watershed. Water is essential for human and animal consumption, but also clean water is needed to grow crops and provide habitat for wildlife. Conserving and preserving water is essential!

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PROCEDURES:

1. Organize and Prepare Supplies
See “Materials” on cover page.
2. Background Information
A watershed is a geographic area in which water, sediments, and dissolved minerals 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 groundwater that runs through this system. When you create your miniature watershed, be sure to use water-soluble markers. As the markers “bleed,” they demonstrate how rain moving through the watershed affects soil erosion and urban runoff.
3. Interest Approach
 - a) Ask students where water is found around the school. *Expected responses: water tower, lake, river, pond, aquifer, etc.* Ask students if the water found in those areas ever moves. Why?
 - b) Explain that a watershed is the land that water flows across or under on its way to a stream, river, or lake. Everyone lives in a watershed. You and everyone in your watershed are part of the watershed community. The animals, birds, and fish are too! You influence what happens in your watershed, good or bad, by how you treat the natural resources – the soil, water, air, plants, and animals. What happens in your small watershed also affects the larger watershed downstream.
4. Conduct Activity
 - a) To create the watershed, crumple a piece of paper up into a tight ball. Gently open up the paper, but don’t flatten it out completely. The highest points of the paper now represent mountaintops and the lowest wrinkles represent valleys.
 - b) Choose one color of water-soluble marker and use it to mark the highest points on the map. These points are the mountain ridgelines.
 - c) Choose a second color and mark the places where different bodies of water might be, creeks, rivers, lakes, etc.
 - d) With a third color, mark four to five spaces to represent human settlement, housing tracts, factories, shopping centers, office buildings, schools, etc.
 - e) Use the spray bottles to lightly spray the finished maps. This spray represents the rain falling into the watershed. Discuss the students’ observations about how water travels through the system.
5. Ask Follow-Up Questions and Make the Connection to Agriculture.
 - What changes did you observe in the maps?
 - Where does most of the rain collect?
 - What path does the water follow?
 - Where does erosion occur?
 - What happens to the human settlement – are any buildings in the way of a raging river or crumbling hillsides?
 - How does the flow of water through the watershed affect our choice of building sites?

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- How does this map demonstrate the idea of a watershed?

Water collects in the low spots of the map. The colors moved around the paper the more water that was added. This shows that watersheds are influenced by weather and human activity.

As the markers "bleed," they demonstrate how rain moving through the watershed affects soil erosion and urban runoff.