

Understanding Your Watershed

Description

What is a watershed, why is it important, and how can we help steward it? A watershed is the land area that drains water to a stream, river, or lake. It is a land surface feature that can be identified by tracing a line along the highest elevations between two areas on a map. Everyone lives within a watershed that drains to a local stream or river. Changes in small watersheds can affect the river systems downstream. The following activity demonstrates the concept of a watershed and how upstream activities impact students' communities and Clear Lake.

Objectives

Student Objectives	Make predictions and observations about how pollution moves through a watershed.	Core Activity: Develop expertise
	Use maps to find their community within the Clear Lake watershed and reflect on their own impacts to the watershed.	Core Activity: Make meaning
Educator Objectives	Connect students' observations with how pollution moves through a watershed.	Key Educator Practice: Attend to the unexpected

Key Vocabulary

Watershed, pollution, tributary

Instructions

Time

1 hour

Materials

- 1 large plastic tray or shallow tub (e.g., sweater-storage tub, large storage container)

- 4 tall containers (e.g., 16-oz. cups or soda bottles, oatmeal container, milk bottle, etc.)
- 1 large sheet of aluminum foil
- 1 spray bottle
- Food coloring to show the flow of rivers
- Glitter, spices, cake sprinkles, and/or other small particles to represent “litter”
- Towels for cleaning up spills
- Printed copies of the [Clear Lake watershed map](#)

Getting Ready

- You can create the watershed in advance or with the students by placing the containers inside the tray or shallow tub. Make an irregular mound with peaks, ridges, and valleys by draping aluminum foil over the containers (you can also use a tarp or large plastic sheet).
- Prep 1 spray bottles with food coloring added.

Facilitation

Start by defining a watershed. Tell students they are going to understand this by making a mini-watershed. Instruct them to make one mountain by making a fist. Have students point to the tops of their knuckles to represent the top of a mountain, which is the boundary of a watershed. While still holding a fist, have students point to their middle knuckles. This is the bottom of a mountain. Finally, have students create two mountains by making two fists, with their middle knuckles touching each other in an M shape. Where their middle knuckles touch is the bottom of the watershed, or valley, where all the water trickles down from the mountain peaks and collects in a river or lake. Have them give their “mountains” their own special names. Ask the students if they can name any mountains in the area, and if they can name any places where water collects in a valley is near them.

Show your group the materials, and ask, “How might we use these materials to build a model landscape with its own mountains?” Brainstorm for a few minutes, then build the watershed model together or bring a pre-made model out to the group. Have students discuss with a partner where the hills, mountains, and valleys are in the model.

Tell the group that you are going to add rain to their watershed by spraying water with food coloring on top of the mountains. Ask the students to tell the person next to them what they predict will happen when rain is added to the mountains. As it begins to flow downhill and collect, discuss what's happening with the group. You can ask the students:

- How does the shape of the mountains make the water flow faster? Slower?
- Can you find some lakes? Any rivers?

- Choose a lake in this landscape. Which rivers flow into it?

Reflection

Show your group the glitter, cooking oil, cake sprinkles, and/or food coloring. Experiment with them to model what happens to pollution in a watershed.

- If you add these materials into one of the rivers, where does it go when it rains? Are there any places in the landscape where it doesn't go?
- Why is it important to try not to pollute land and water within a watershed?

Once you've demonstrated this, have students circle which they are in on hard copies of the [Clear Lake watershed map](#), or display the [Lake County Water Resources Department's interactive stormwater map](#). Have students explore either map and find the main tributary nearest them that flows into Clear Lake. Now that the group understands that water and pollution moves downhill, ask them:

- Where can we expect the most trash and pollution to be?
- How does that impact aquatic species who use the streams and creeks, like the Clear Lake hitch?

Optional Post-Activity

Hand out the [Lake County Department of Water Resources' What Can You Do to Protect Clear Lake](#) brochure, and have them share one thing they can start doing to protect Clear Lake.