

**Target Grade:** 5  
**Science Standard 2, Students will understand that volcanoes, earthquakes, uplift, weathering, and erosion reshape Earth's surface.**

**Objective:** 1. Create a watershed.  
2. Hypothesize about how watersheds are formed.

**Materials:** paper, water-based markers, spray bottles  
**Time:** 40 minutes

This watershed portion of this activity is taken from:  
[http://groups.ucanr.org/sns/Unit\\_Activities\\_\(for\\_Teachers\)/Activity\\_6-Defining\\_Our\\_Watershed.htm](http://groups.ucanr.org/sns/Unit_Activities_(for_Teachers)/Activity_6-Defining_Our_Watershed.htm). Students will create a watershed and observe how water drains from ridges into valleys. After creating a watershed, the students will experiment with erosion and deposition.

### **Background Information**

A watershed is all the land that "sheds" water into a particular body of water. The boundaries of a watershed are the mountains, hills, and other high points where land slopes toward the body of water.

### **Objectives**

Participants will: (1) make a simple model of a watershed

### **Time**

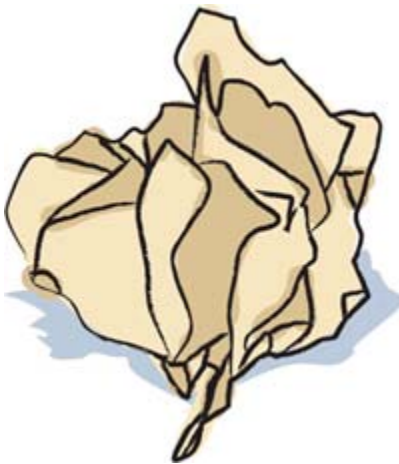
Setting the Stage: One group session

### **Materials**

- Sheets of scratch paper, 1 per person
- Blue, black, brown, and red water-based pens
- Paper towels for each person
- Spray bottle of water

## Setting the Stage

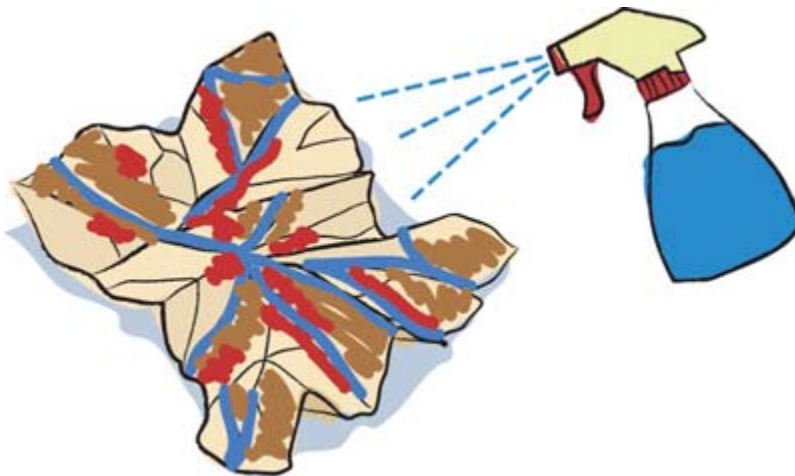
1. Ask participants, "Where do you think the water in our creek comes from? What is a watershed?" If participants are not familiar with the concept of watershed, explain what it means.
2. Conduct a quick demonstration of a watershed by having participants make a watershed model using a sheet of scratch paper. Have participants:
  - Crumple up the scratch paper into a loose ball.
  - Open up the paper and place it on a desk or table without flattening it completely. It should have various relief features on it that resemble mountain ridges and valleys.
  - Use blue water-based pens to mark the "creeks" on their paper and where they think water will collect as it runs downhill.
  - Use black water-based pens to outline the ridges that separate one creek from another creek.
  - Optional:
    1. Use brown water-based pens to draw exposed soil that could wash away in the watershed.
    2. Use red pens to draw possible pollutants they may find in their watershed, such as soap from washing cars, parks with lots of dog poop, or pesticides on lawns.
  - Place paper towels underneath the model.
  - Keep the model on the desk and spray a very light mist of water over it.
  - Observe where water runs down and where it collects.



*Crumpled Paper Watershed Stage 1*



*Crumpled Paper Watershed Stage 2*



*Crumpled Paper Watershed Stage 3*

Note: For another quick and simple model of a watershed using your hands and a spray bottle, see the 4-H curriculum *From Ridges to Rivers: Watershed Explorations*, excerpted below:  
(from <http://clubs.ca4h.org/sanluisobispo/r2rwe/!element.html> )

1. Gather students in small groups (5 – 8)
2. **Say** Everyone stand in a circle, shoulder to shoulder, facing towards the center of the circle. Cup your hands together, with your fingers together and the tips pointing up. Pretend that your fingers are now mountains, the space between the fingers are the creek valleys, and the



palms are the flatlands. You have each now created a model of a watershed with your hands.

Reach toward the center of the circle so that your cupped hands touch the hands of those people on both sides of you.

I am going to rain on your watersheds. Observe where the water goes.

3. **Spray** water on their hands.

### **Questions for students:**

Describe where the “rain” went when it hit your hands.

Which direction did it go?

Describe or show the places where it collected into pools or streams in your hands.

What would you name your little “watersheds”?

Describe where the water from your “watersheds” went when the pools in your hands filled up.

Compare the sizes of everyone’s “lakes” or “puddles.” Who has the biggest lake; who has the smallest lake? Why are they the same or different?

### Wrap up

1. Relate their experiences to the watersheds we live in. We live in a smaller watershed (Bear River Watershed) that makes up part of a larger watershed (Great Salt Lake Watershed). Each of their hands could be like a smaller watershed that makes up a larger watershed. The Bear River Watershed itself has many smaller watersheds, made up of the drainages around the Logan River, Cub River, Blacksmith Fork River, Little Bear River, and Spring Creek, to name a few. Ask the students if they know which stream or water body they are closest too?

2. Ask the students to look around them, or out the window, at some of the features that make up our watershed. How did we get a valley surrounded by mountains, did the mountains always have canyons?

3. Explain that geologic forces shaped our valley, from uplifting mountains to carving out canyons through weathering and erosion, and that the students will learn more about those processes during the Stokes Nature Center program.