

## ***Building Your Own Watershed***

**Grade Level:** 5-8

**Subject Areas:** Physical Science, Life and Space Science

**Duration:** two-three class periods

**Setting:** classroom/lab

**Skills:** organizing, analyzing, and interpreting information

**Vocabulary:** watershed, nonpoint source pollution

### **Related State Content Benchmark Objectives**

- Describe how rainwater in Michigan reaches the oceans
- Describe and identify surface features using maps

### **Objectives**

Students will:

- construct a model watershed made out of clay; and,
- predict how water will move off “the land” and where it will end up.

### **Materials**

- 2 lbs. of modeling clay
- miscellaneous items like flexible plastic straws and tongue depressors
- food coloring or granulated jello mix
- sprayer

### **Background**

A watershed is defined as the land area that drains water towards a common channel or body of water. For younger students, the concept of a watershed is fairly abstract and embodies such concepts as topography and energy potential. To help make the concept of a watershed more concrete for younger students, it is helpful to link an outdoor activity, with hands-on/constructive type activity. For the Grand Traverse Bay watershed, it is important that students make the connection between the relatively still waters of the bay and the moving waters of rivers that flow into the bay. It is also important that students understand that we are part of a much larger basin (the Great Lakes) that sends water through the St. Lawrence River to flow into the North Atlantic.

### **The Activity**

1. To introduce this activity, and to assess prior knowledge, take students outside during, or immediately after a rain. Have students observe how water flows off parking areas or paved areas around the school. Where do these little rivers go? Do they ever flow uphill?
2. Give each student a piece of paper. Ask them to crumple up the paper into a ball, and then to gently undo the ball. Students will discover a piece of paper with little valleys and hills when they lay it on their desks. Students may place their pieces of paper on a waterproof tarp or plastic sheet, and spray their pieces of paper with water. Observe the routes the water takes as it flows “uphill”. Talk about a watershed and introduce the clay watershed activity.
3. Inside the classroom, divide the class into small groups. Each group should have one lump of clay about the size of a softball. Explain that this will become their watershed. Students can form valleys and hills in the clay that look like the crumpled paper.
4. Once students have molded the clay into valleys, hills, mountains, rivers, and lakes remind them that they can use the tongue depressors to build bridges, or houses, or any structure they might see in their community. The food coloring or granulated jello mix can be applied to the surface of the model to highlight the flow of water from the sprayer.

5. As an extension activity, the flexible straws can represent sewers that students embed into their clay model. The food coloring or granulated jello mix represents pollutants on the land that are carried away by the rainfall (nonpoint source pollution).

## **Additional Resources**

Holling, Clancy. 1941. *Paddle to the Sea*. Boston, MA: Houghton Mifflin Company.

“Supplemental Curriculum Activities” for use with Clancy Holling’s *Paddle to the Sea*.

Two very good related activities in this supplement: “Travel-to-the-Sea” and “In One Lake and Out Another” (Order from Ohio Sea Grant)

Locker, Thomas. 1984. *Where the River Begins*. New York, NY: Dial Books.

The Watercourse and Western Regional Environmental Education Council. 1995.  
*Project Wet Curriculum and Activity Guide*.