

# Watershed

**Skill: Science**

## Objectives:

-Students will demonstrate water movement through a watershed

## Experiment Time:

30 minutes

## Background Information:

A watershed is defined as all the land that drains to a point on the landscape. This includes the stream and all of its tributaries. Water will flow from the higher elevation in the watershed to the stream, or low elevation. The shape of the watersheds will vary from region to region. Some are long and narrow, while others will be more circular. Many Oklahoma watersheds are long and narrow.

The boundaries of a watershed can be defined using a topographic map. A topographic map has brown contour lines that represent the elevation of the land surface. Contour lines close together indicate a steep slope. Contour lines far apart indicate relatively flat land.

The water in a stream is affected by the activities on the watershed. As the water drains through the watershed, it can pick up materials in the watershed. As it flows over various parts of the watershed, it will pick up different types of materials. What do you think it could pick up when it flows over a forest? Leaves, soil, rocks and gravel are a few things it can pick up. How about over farmland? Fertilizers, soil, and pesticides are some of the things water may pick up over farmland.

## Procedure:

Steps in the activity:

Students will create a model watershed with hills on one side and a stream or large body of water on the other side.

1. Tear off a piece of wax paper larger than the pan. Crumble the wax paper to make creases and bumps.
2. Crumble one or two balls of wax paper and place at one end of the pan.
3. Fit the large piece of wax paper in the pan, covering the balls.
4. At the opposite end form a dip or basin.
5. Elevate the hilly end by placing books or erasers under the pan.
6. Simulate rain on the watershed with the watering can or with cups of water.

## Vocabulary

- watershed
- landscape
- tributaries
- topographic
- contour
- elevation
- fertilizer
- pesticide

## Materials:

- foil rectangular baking pan
- wax paper or foil
- small amount of sand or soil
- food coloring
- books or chalkboard erasers
- water can with showe head or paper cups with holes punched in the bottom
- water



# Watershed cont.

## P.A.S.S.

### 4th Grade

#### Science

- Read 1.1, 3.1b
- Process 3.1,3, 4.4, 5.4
- Life 3.1

### 5th Grade

#### Science

- Read 1.1a, 3.1b
- Process 3.1,3, 4.4, 5.4
- Life 2.2

### 6th Grade

#### Science

- Read 1.1a, 3.1b
- Process 1.1, 3.1,5, 4.5, 5.4
- Life 4.1
- Earth 5.2

Observe how the water runs across the landscape. The tributaries will run together and eventually run into the stream or large body of water.

7. Place a small amount of sand on the bank of a tributary.

Tell students to imagine a new housing development being constructed near one of the tributaries. Bulldozers have come in and cleared a large area, leaving the soil bare. Ask students what would happen if it rained.

8. Make it rain again.

Students should observe how the water carries the sand through the tributaries to the surface water where it settles on the bottom.

9. Create a chemical spill by adding a couple drops of food coloring near a tributary. Tell students the spill area was cleaned up by washing off the area. Ask them if they think this is a good clean-up method.

10. Pour water on the spill to wash it away.

Have students describe how the spill moved through the watershed.

Optional: Have students come up with different activities occurring near them. Try and simulate those activities in the model watershed.

Courtesy of Indiana's Water Riches

Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990, and other federal laws and regulations, does not discriminate on the basis of race, color, national origin, sex, age, religion, disability, or status as a veteran in any of its policies, practices or procedures. This includes but is not limited to admissions, employment, financial aid, and educational service.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert Whitson, Vice President, Dean and Director of Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is issued by Oklahoma State University as authorized by the Dean of the Division of Agricultural Sciences and Natural Resources and has been prepared for both internal and external distributions through print and electronic media.

