

RESOURCE LIBRARY  
ACTIVITY : 1 HR

## In Your Watershed

Students learn the components of a watershed, identify examples of point and nonpoint source pollution, and then build a 3-D watershed model.

### GRADES

6 - 8

### SUBJECTS

*Biology, Geography, Human Geography*

### CONTENTS

7 Images, 1 PDF

## OVERVIEW

Students learn the components of a watershed, identify examples of point and nonpoint source pollution, and then build a 3-D watershed model.

For the complete activity with media resources, visit:

<http://www.nationalgeographic.org/activity/in-your-watershed/>

## Program

NATIONAL GEOGRAPHIC'S  
**STRANGEDAYS**  
ON PLANET EARTH

## DIRECTIONS

### 1. Introduce the vocabulary.

Introduce the vocabulary term watershed. Ask students what they think the term means.

Display for students the satellite image of the Chesapeake Bay watershed. Then explain that a

watershed is the land area from which surface runoff drains into a stream, channel, lake, reservoir, or other body of water. Tell students that people are either directly or indirectly connected to bodies of water, which connect to land.

## **2. Distribute the worksheet.**

Distribute copies of the worksheet Components of a Watershed to each student. Have students label the watershed components using the words along the bottom of the diagram. (Answers: 1. River Source, 2. Upstream, 3. Downstream, 4. Main River, 5. Tributaries, 6. Floodplain, 7. Watershed Boundary, 8. Meanders, 9. Wetlands, 10. River Mouth)

## **3. Have students identify examples of pollution.**

Tell students that people use water for agriculture, industry, manufacturing, power, transportation, and recreation. Explain the meaning of terms point source pollution and nonpoint source pollution. Show students the photo gallery and ask students to identify examples of each. Point sources include facilities such as sewage treatment plants and factory discharges; Nonpoint source pollution includes excess fertilizers from lawns and farms, oil from roads, overflows from city sewers, and animal waste.

## **4. Have students make a 3-D model of a watershed.**

Divide students into small groups. Have each group begin by molding clay to represent mountains in a plastic or metal tray. Next, ask students to form the watershed by gradually leveling the clay so that it leads to the mouth of their river. Then, have them form river channels and coat with blue enamel paint and color the land with tempera paint. Finally, have students place construction paper figures on the model to simulate users of a river system, using the diagram in the worksheet as a guide. Let the model dry overnight.

## **5. Simulate the flow of water in a watershed.**

The next day, have a volunteer from each group pour a slow, steady stream of water from the top of the mountain area. Have students watch how the "river" runs from its source to its mouth and orally describe it.

## **6. Have students apply their understanding to their own watershed.**

Use the models to discuss your community's watershed. Ask:

- *Where are its boundaries?*
- *What are the main sources of pollution in our watershed?*
- *Who is impacted?*
- *How can we ensure the watershed is a clean resource for the community?*

# OBJECTIVES

## Subjects & Disciplines

**Biology**

**Geography**

- Human Geography

## Learning Objectives

Students will:

- define the terms
- create a 3-dimensional model of a watershed
- apply what they learned to their own community's watershed

## Teaching Approach

- Learning-for-use

## Teaching Methods

- Discussions
- Hands-on learning

## Skills Summary

This activity targets the following skills:

- Critical Thinking Skills
  - Applying
  - Creating
  - Understanding

# National Standards, Principles, and Practices

## NATIONAL GEOGRAPHY STANDARDS

- Standard 1:

How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information

- Standard 14:

How human actions modify the physical environment

## NATIONAL SCIENCE EDUCATION STANDARDS

- (5-8) Standard F-2:

Populations, resources, and environments

### Preparation

### What You'll Need

### MATERIALS YOU PROVIDE

- Blue enamel paint
- Construction paper
- Modeling clay
- Plastic or metal trays
- Scissors
- Tempera paint
- Toothpicks
- Water

### PHYSICAL SPACE

- Classroom

### GROUPING

- Small-group instruction

# BACKGROUND & VOCABULARY

## Background Information

People in a watershed are either directly or indirectly connected to bodies of water that connect to land.

## Prior Knowledge

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## Recommended Prior Activities

- None

## Vocabulary

Term	Part of Speech	Definition
nonpoint-source pollution	<i>noun</i>	toxic chemicals that enter a body of water from many sources.
point-source pollution	<i>noun</i>	pollution from a single, identifiable source.
watershed	<i>noun</i>	entire river system or an area drained by a river and its tributaries.

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### For Further Exploration

#### Websites

- [PBS: Strange Days on Planet Earth](#)

## FUNDER



This material is based in part upon work supported by the National

Science Foundation under Grant No. DRL-1114251. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the National Science Foundation.

The David & Lucile Packard Foundation

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