



Creating a Wetscape

Focus/Overview

This lesson introduces students to the watershed. Students make their own watershed to see how their water systems can be affected by what others do.

Learning Objective(s)

The learner will:

- Locate and label the Mississippi River Watershed in conjunction to Louisiana
- Build a watershed
- Distinguish between nonpoint and point pollution and give examples
- Research their immediate watershed location

Louisiana Grade Level Expectations

5: GLE-50 7: GLE-39	<ul style="list-style-type: none"> ▪ Describe and analyze the consequences of several types of human activities on local ecosystems [e.g., polluting streams] (SE-M-A4).
5: GLE-49	<ul style="list-style-type: none"> ▪ Identify and give examples of pollutants found in water, air, and soil (SE-M-A3).
5: GLE-4 8: GLE-2	<ul style="list-style-type: none"> • Locate major landforms and geographic features, places, and bodies of water/waterways on a map of the United States (G-1A-M1, G-1A-M2).
6: GLE-47	<ul style="list-style-type: none"> • Illustrate how various technologies influence resource uses in an ecosystem [e.g., forestry management, soil conservation, and nontoxic fertilizers] (SE-M-A8).
7: GLE-1	<ul style="list-style-type: none"> • Analyze various types of maps, charts, graphs, and diagrams related to U.S. history (G-1A-M2).
8: GLE-50	<ul style="list-style-type: none"> • Illustrate possible point and nonpoint source contributions and natural or human-induced pathways of a pollutant in an ecosystem (SE-M-A3).

Materials List

Teacher:

- Large baking pan aligned with clay in middle. Make a river with bends and curves (allow water to travel downward).

BTNEP Connection

Water Quality and Habitat

Grade Level

5-8

Duration

90 minutes or two class periods of 45 minutes

Subject Area

Science and History

Extension Areas

- Research the Dead Zone (Hypoxia) in the Gulf of Mexico
- BTNEP provides markers and supplies to label all storm drains around your school. (nonpoint)

Vocabulary

- Watershed
- Nonpoint Source Pollution (NSP)
- Point Source Pollution (PSP)

Original Source :

- Wetscape activity was adapted from: [POW! Powers of the Wetlands](#) book
- My Watershed activity sheet adapted from: www.watershed.org
- Cally Chauvin

- Medicine bottles labeled and filled with the following:
 - a. Fertilizer (yellow unsweetened Kool Aid powder)
 - b. Herbicides (green unsweetened Kool Aid powder)
 - c. factory output (red unsweetened Kool Aid powder)
 - d. pollution (litter–small whole punched bits of paper)
 - e. oil (soy sauce)
 - f. animal waste (brown – bits of dried chocolate drink)
- Spray bottle with water (rain)

Student or groups:

- Cubes of clay, natural earth colors (brown, green, blue)
- Small plastic container (individual) or plastic paint roller pans (group)
- Use materials gathered from outside and/or other objects found or created in the classroom
- Bag of square sponges
- Plastic animals

Background Information

The Mississippi River drains 31 states and two Canadian providences. A raindrop falling in Lake Itasca, Minnesota would arrive at the Gulf of Mexico in about 90 days.

(www.nps.gov/miss/features/factoids/index.html)

A watershed is a basin–like landform defined by highpoints and ridgelines that descend into lower elevations and stream valleys. A watershed carries water “shed” from the land after rain falls and snow melts. (www.watershedatlas.org/fs_indexwater.html) To determine which watershed you live in visit the EPA’s Surf Your Watershed web site at www.epa.gov/surf/. There is a great mini movie about the Karst watershed at www.watershed.org/earth/karst.html.

Nonpoint source pollution (NSP) cannot be connected to one specific source. (run off, vehicles, boats, storm water, construction sites, agricultural sites, litter, etc..) Point source pollution can be identified. www.epa.gov/owow/nps/kids/index.html (Kid’s page) <http://ohioline.osu.edu/aex-fact/0465.html> (table of nonpoint source pollutants and major sources)

Advance Preparation

1. Collect the materials.
2. Decide whether each student will make a Wetscape or divide students into cooperative groups.
3. Take a large cake pan aligned with clay down the middle to create a river. Have a pitcher with water & blue food coloring.



Procedure

1. Pour a small amount of blue water (river) into the indentation of clay. Slant the pan as you fill the bottom of the pan. Ask students what will happen if you place a small amount of water into the river. They should tell you that it would travel to the end of the river. What happens if that drop of water is polluted? How can this affect the people living along the river?
2. Have all of the material available for each group of students. Tell them to create a model on a slope. They must build up one side of the container so that there is a slight indentation.
3. They must have at least one of the following in their model:
 - a. a river or stream going down the slope
 - b. a farming area
 - c. a manufacturing company
 - d. wetlands (sponges) at the end of their river or stream
 - e. use any other materials available or create their own
4. Have different colored unsweetened Kool Aid powders in small medicine containers. Label one fertilizer, herbicides, factory output, pollution (litter), oil (soy sauce).
5. Have each group bring up their model so everyone can stand around it. Assign students from the group and students from the class to hold the medicine containers. One student at a time will place a little of content of each container where it would belong.
6. The teacher will spray the water bottle (representing rain) onto all of the area.
7. Continue until all of the Wetscapes have been rained on.

Blackline Master(s)

1. Map of United States
2. Map of your watershed
3. My Watershed Address

Assessment

- Write a brief summary of what they saw happen to their Wetscapes
- Identify and give examples of pollutants found in water, air, and soil
- Illustrate possible point and nonpoint source contributions and natural or human-induced pathways of a pollutant in an ecosystem
- Outline and label the states that form the Mississippi River Watershed
- Research their immediate watershed and compare it to the Karst watershed www.watershed.org/earth/karst.htm.

Resources/Websites

www.nps.gov/miss/features/factoids/index.html Mississippi National River and Recreational Center. 4/12/04.



Resources/Websites continued

http://watershedatlas.org/fs_indexwater.html

www.epa.gov/surf/

www.watershed.org/earth/karst.htm.

See www.iucn.org/themes/wani/eatlas/html/na12.html Water Resources eAtlas:

Watersheds of North and Central America NA09 Mississippi

www.epa.gov/owow/nps/kids/index.html

<http://ohioline.osu.edu/aex-fact/0465.html>

www.watersheds.org/kids/printshed.htm

www.theodora.com/maps

Tradebooks:

Duey, K. and Bale, K.A. Survival! Flood. Aladdin Library. 1998. This book depicts the Mississippi River flood of 1927. Reading level: Ages 8-12



Name _____

Date _____

Class _____

My Watershed Address

What is your watershed address?

Go to www.epa.gov/surf/ to research your watershed. Using the information you've gathered, write your own watershed address in the form.

Street Address	Watershed Address
Street/road	Stream/creek
Town/City	Local bayou
Parish	River
State	Gulf
Country	Ocean

Watersheds Knowledge Section

Using the information at the website, answer the following questions:

1. In your own words, what is a watershed?
2. Where does the water from your local watershed finally end up?
3. What are some possible sources of watershed pollution in your community?
4. What would happen if everyone decided to start putting paved areas around their yards?
5. What can be done to reduce our impact on watersheds and their environment?
6. If you were designing a poster, what would you include on the poster to make the upper regions of the Mississippi River realize that what they do affects Louisiana?
Create a poster on the back of this sheet.

