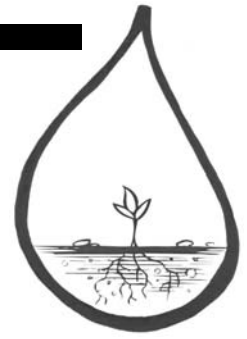


Building Environmental Youth Leadership

A High-School Service-learning Curriculum



Watershed Geography

TOPIC:

Background research

OBJECTIVES:

- Describe characteristics of watersheds.
- Understand the role that rivers have in watershed identity.
- Identify which drainage basin in which they live
- Identify the watershed in which activities are located.
- Explain the role of the property within the watershed.
- Discuss the movement of water on the property.
- Discuss land use on a watershed

LENGTH:

50 minutes

ENVIRONMENT:

Indoors and/or
Outdoors.

MATERIALS:

- Lake Superior floor map
- MN map with drainage basins outlined
- Map of St. Louis River watershed
- Drawing paper
- Large Pieces Heavy Paper
- Clipboards
- Pencils
- Markers/crayons

Background:

In this lesson, students are introduced to the concept of watersheds, A brief overview of Minnesota's drainage areas will be introduced. Once students have examined these large watershed drainage areas, the students are guided through considering Minnesota – Lake Superior Drainage – St. Louis River watersheds. Some guided activities and group discussion assists them in this transition from big picture to smaller picture. Students then map their immediate landscape for drainage characteristics. This is an opportunity for team members to directly experience the geography of watersheds, and how interactions occur that cause environmental stresses. It is particularly appropriate for teams considering erosion control projects.

Activity Outline:*Beforehand:*

It may work best to complete this activity at the proposed project site.

Create maps of Minnesota with appropriate watershed boundaries defined. This is something that can be copied and distributed to all students or a set for wall-viewing. Gather additional supplies for group work including drawing paper, pencils, markers or crayons, etc.

Mapping the Watershed:

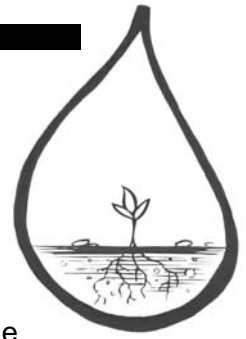
Students gather for introductions. Prompt them to discuss definitions for watershed, sharing knowledge on how water movement is critical to establishing watershed boundaries. Once students are comfortable with the idea of watersheds, explore the maps. Ask them to point out watershed boundaries at the Minnesota, Lake Superior, and St. Louis River levels. Finally prompt them to suggest characteristics of water movement relevant in their local landscape.

After classroom discussions and illustrations, students explore outdoors to find examples of drainage areas. Split students into small groups and assign each to map out a specific area including location of buildings, parking lots, playground, and natural areas. After general mapping, groups should investigate and predict the direction of water flow in their areas.

Groups then reassemble to compile information and complete the mapping project - a classroom mural created on heavy paper. In essence, the students depict the flow of water on the immediate property. All groups should share their maps with the team. Comparing the various depictions prompts discussion of the similarities and differences between students' work. All maps should be displayed, and a wrap-up discussion hosted to review information on watersheds.

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Additional Investigation :

Later, the students may venture out on a rainy day to determine the accuracy of their investigations. How is the water moving? Where are puddles located? Is there a focal point to which all water is moving?

If interested and relevant, contact the City Water and Sewer division and request a site visit. The City can provide additional resources to compliment this activity. For instance, using video equipment, they may place a robot vehicle in the city water pipes to provide feedback on how and where water is moving. Additionally, different dye colors can be added to water to trace movement. The City can also offer various map images to assist the learning process.

References:

Lake Superior Center. (1998). *More Than Just a Lake. Lake Effects, The Lake Superior Curriculum Guide for Grades K-8*. Duluth, MN: Lake Superior Center.

Western Regional Environmental Education Council, Inc. (1987). *Watersheds. Aquatic Project WILD*. Bethesda, MD: Western Regional Environmental Education Council.

The Watercourse and Council for Environmental Education. (1995). *Color Me A Watershed. Project WET*. Bozeman, MT: The Watercourse and Council for Environmental Education.

The Watercourse and Council for Environmental Education. (1995). *Rainy-Day Hike. Project WET*. Bozeman, MT: The Watercourse and Council for Environmental Education.