



Environmental Education Field Studies

Exploring Watersheds Grades 4-6

Description: Exploring Watersheds

Students track the movement of water through the landscape and learn about land use issues that affect watersheds. Student teams participate in a watershed management planning exercise.

Linked to Arizona Academic Standards: Science S4: C1-G6PO1; C3-G4PO1, G4PO4, G6PO2; Social Studies S3: G4/5 3SS-E1PO3, 3SS-E3PO2; G6 3SS-E7PO3,PO4, PO6.

Duration: 1-2 hours

Objectives

- Students learn the definition of a watershed (a land area that drains into a body of water)
- Students understand the water cycle
- Students understand they and everyone else live in a watershed
- Students understand how non-point source pollution as well as point source pollution can pollute a watershed
- Students understand the concept of land use and how land use affects watersheds

Conceptual Framework:

- Renewable natural resources are replenished through natural cycles, but are still finite.
- Effective conservation practices depend on clearly defined management objectives, and understanding of natural processes and the application of knowledge from many disciplines.
- The decisions and actions of individuals and groups of people impact natural systems.

Vocabulary

Aquifer, condensation, contour line, evaporation, infiltration, lake, ocean, pond, precipitation, ridge, river, spring, stream, topography, transpiration, valley, water body, watersheds, water cycle, groundwater, pollution.

Work Plan Objectives-SDCP elements:

- **Riparian Protection;** through this program we highlight the intrinsic value and vulnerabilities of Pima County's riparian resources and aquatic habitats.

- **Biological Corridors and Critical Habitat;** in the course of this program we introduce the importance of the biological diversity of the Sonoran Desert and Pima County's role in the conservation of natural and cultural resources.

Materials:

Relief and topographic maps

Dry erase board

Dry-erase markers

Description of Activity

1. Open a discussion of the water cycle & watershed

Sit at the tables or in a circle on the ground.

Encourage students to describe the water cycle and introduce vocabulary.

Define watershed "A land area that drains into a water body". Write the definition on a whiteboard.

Ask students for examples of water bodies. Ask students for examples of land areas.

Write examples on a white board.

Explain how to identify the boundaries of a watershed. Make drawing on white board of mountain ridge with valleys and a water body on either side. Use arrows to indicate flow of water and left side #1 watershed, east side #2 watershed.

2. Identifying Watersheds on Topo or Relief Map

Pass out 1 map for 2-3 students

Provide instruction on how to read a topo map

Ask the students to find a landmark on the map such as their school. On the topo map determine the boundaries of the watershed in which the landmark is found.

Ask the students to look at the area within the boundaries that you have drawn on the maps and draw lines to indicate the route that rain water might take using arrows to indicate the direction that it would flow.

3. Identify land use practices within the watershed.

Discuss land use practices in southern Arizona and their impact on Arizona's water budget. Land use practices include agriculture, construction, forestry, wastewater disposal, surface mining, and residential and urban development. A pie chart shows the relative amounts of water used by each practice.

4. Wrap-up.

If time allows, wrap up the program with a discussion of water conservation on a city scale as well as on a personal level.