Pima County Natural Resources, Parks and Recreation
Environmental Education Field Study

Water Quality
Lesson Plan - Grades 4-8

Description: Water Quality
Students learn first-hand how scientists study water by collecting water samples and taking scientific water quality measurements. Types of test performed depend on grade level.

Linked to Arizona Academic Standards: Mathematics 1M- R1, F2, E1, E6; 2M- R2, F1, F2, E1, P1, P2; 5M- F2; 6M-E1. Science S4: C1: G6PO1; S6: C3: G4PO1. Social Studies 3SS: F2PO5, E7PO6, P4PO3, D3PO6; 6SC: F1, E6, P5.

Duration: 2 hours

Objectives:

- Understand the importance of the natural spring water source for humans and wildlife in the past as well as the present
- Understand the concept of water quality and water quality monitoring
- Make basic water quality measurements and record data collected

Vocabulary:

Agua Caliente		
Base	Hydrologist	Neutral
Celsius	Hydrology	Temperature
Conductivity	Inlet	Thermal Spring
Fahrenheit	pH	Transparency
Groundwater	Pond	Watershed

Materials:

Hydrology Data Sheet 4-8 for each student and pencils, if needed
Clipboard for each student
Dry erase board or flip chart with a grid for recording data
Sample buckets with rope attached
Measuring cups
Celsius thermometers
pH meters
Laminated pH scale
Transparency tubes
Electrical conductivity meters

Preparation:

Water testing meters should be calibrated before the class starts. pH meters require a thirty-minute soaking before calibration. Use GLOBE protocols to calibrate the instruments.

Description of Activity:

- This activity emphasizes the importance of perennial water sources in the Sonoran Desert to wildlife and humans.
- Students learn the concept of water quality and the importance of water quality monitoring.
- Students understand that the physical characteristics of the water determine the organisms that can live there.
- Under the supervision of the instructor, students take samples at three sites at Agua Caliente and measure the temperature, pH, electrical conductivity, and transparency of the samples.
- Students compare and analyze water quality data from three sample sites at Agua Caliente Park: the spring, the inlet and the pond.

Late Arrivals: Do as many of the water tests as possible. When it is time for the students to go, give a short wrap-up about the importance of monitoring water resources to insure that the quality of water is appropriate for what the water is being used for (i.e. supporting animal and plant life, human consumption).