Revised 6/09

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

Ecosystem Discovery - Elementary School Level

Description: Ecosystem Discovery
Explore the diversity of life in riparian and desert ecosystems through guided, hands-on exploration. Students use binoculars and hand-lenses to make observations and work as a class to understand the interrelationships between plants and animals and the environment.

Linked to Arizona Academic Standards: Science S3: C3: S4: C1: G1PO2, G1PO3; G2PO1, G2PO3; G3PO1; G4PO2; G6PO1; HSPO4; C2: G3PO2; C3: KPO1, KPO2, G1PO1, G1PO3; G3PO1, G3PO3, G3PO4, G3PO5; G4PO1, G4PO3; G6PO1, G6PO2; G7PO1, G7PO2, G7PO3, G7PO6; C4: G3PO1; G4PO1, G4PO2; G8PO1, G8PO6. Writing S2, C1, G1, PO2; S2, C1, G4-5, PO3; S2, C1, G6-8, PO4. Social Studies 3SS-P4, P5; 4SC- F4, F7, E7, P4, P6.

Duration: 2 hours

Objectives:

- Identify the biotic and abiotic components of the riparian or desert ecosystem at Agua Caliente or Feliz Paseos Park and construct an ecosystem model
- Understand the concept of riparian habitats and their critical role in Sonoran Desert conservation
- Identify adaptations of desert and riparian plants and animals that allow them to live in a specific environment
- Use observation skills to identify selected plants and animals, and understand their ecological role
- Make a detailed sketch of a selected plant or animal

Conceptual Framework:

- All living things are interrelated; they are a product of their environment which includes non-living resources and an integral part of it.
- Food webs are pathways through which energy flows from the sun to plants and subsequently to herbivores, omnivores, carnivores and decomposers.
- Species and habitat diversity are the foundation for a stable Sonoran Desert ecological system.

Vocabulary:

Abiotic	Exotic Species	Riparian
Adaptations	Interrelationships	
Biotic	Invasive	
Consumers	Native	
Decomposers	Producers	

Equipment and Materials:

Ecosystem components worksheet
Clipboards, pencils
Organism illustration worksheet
Hand lenses, binoculars, spotting scopes, binocular scopes

Description of Activity:

- Through field observations of riparian and desert habitats students identify and list the living and non-living components of the two habitats (cottonwood, Gooding's willow, sedges, cattails, California fan palms, mesquite trees, cholla, saguaros, prickly-pear, creosote, desert marigold, barrel cactus, palo verde, ironwood, jojoba, desert mistletoe, buffelgrass, seasonal, mammals {evidence of javelina, bobcat, mule deer}, hackberry, lizards, reptiles, seasonal birds)
- Compare and contrast adaptations of riparian and desert plants and animals
- Students construct a model of the riparian/desert ecosystem including biotic and abiotic components. Include the water cycle, carbon dioxide/oxygen cycle, nutrient cycles. Use arrows to show the flow of energy and materials.
- Students make a detailed sketch of a riparian or desert plant. Note adaptations (physical and behavioral) that allow them to survive in their habitat. Label parts.

Late Arrivals: Rather than sketching a model of the riparian and desert ecosystem, briefly discusses how biotic and abiotic parts of the ecosystems all work together to create an ecosystem. Ask students to point out connections between abiotic and biotic parts, and connections between biotic parts (i.e. predator/prey, herbivores/food source). This change should save about 20 minutes. If more time needs to be made up, shorten the hike and/or delete the sketching of a plant or animal. The important thing is to allow the students to have an outdoor experience and begin to understand riparian and desert ecosystems.