



4TH GRADE: CYCLES, WEBS AND CHAINS

Program Overview

An ecosystem can be defined as the interrelationships among non-living and living elements: sun, air, water, earth, plants, and animals. Arizona has three distinct geologic/geographic regions: the southern deserts, the central highlands, and the northern plateau region. biomes can be disrupted if key elements are destroyed. Our Lynx Creek site offers us a microcosm of the larger systems in Arizona and the perfect outdoor location for the scientific study of natural sciences.

Objectives

1. Recognize and describe different regions in the state of Arizona: deserts, forests and woodlands, grasslands, chaparral, and wetlands, or riparian, areas.
2. Describe the elements of an ecosystem.
3. Discuss the concepts of food chains; create their own food chains using models of animals and plants.
4. Compare and contrast, through direct observation, handling and inquiry, some adaptations of herbivores, carnivores, and omnivores and which are likely to be predator or prey.
5. Synthesize the concept of an ecosystem through the creation of a chalk drawing.
6. Discover and discuss real, on-site examples of the interrelationships found in nature.
7. Through quiet, individual observation and descriptive writing discover the importance of careful observation and imagination as key tools for both the arts and sciences.

Introduction:

An interactive puppet show entitled 'Dirt' provides the background and theme for the day. Each class is then divided into three small groups, and each group rotates through a sequence of activities on the trail. A lunch break separates the sequences.

Arizona Rug Map Ecosystems (*Webs and Chains*)

Using a big rug map of the state of Arizona, the students interact with the instructors to determine the main constituents of any ecosystem, and the differences between each—the deserts, forest and woodland, chaparral, grasslands, and riparian areas. Using a variety of animal miniatures, students create and discuss examples of different food webs that occur in these systems.

Drawing Connections (*Cycles*)

Staff leads a chalk drawing activity to reinforce the concept and constituents of an ecosystem. This ends with the sharing and explanation of each student's creation.

Skulls (*Food Chains*)

The students and staff discuss the meaning and give examples of omnivores, carnivores, and herbivores. Each child then has the opportunity to handle and observe a mammal skull and learn about the role of these animals in our ecosystems by observing the skull characteristics, i.e. teeth, eye sockets, and nose.

Trail Walk

The focus of this trail hike is for the children to explore, discover, and observe some of the interrelationships in nature. Docents guide kids along a trail looking for signs of animals and discussing the interdependency of life. Each trail walk differs from the next as we find different signs of life and clues to different relationships. Topics include, but are not limited to: animals and their food source, plant adaptations, and plant/animal relationships like pollination.

- **Journaling:** This is a quiet activity when the children spend a little time alone, and are given the chance to process their walk experience. They are provided a simple journal to write down descriptive sentences, poems, or a short story of their experience.

Closure Story '*The Most Beautiful Thing*'

The story provides a nice closure to the day and lays the groundwork for longer lasting impact of their experience. Using the natural world as the setting, the story focuses on the idea that the most important things in life are not material, but experiential, and that sharing the experience is the greatest gift.

If you have any questions, please call the Education Department at 928-776-9550 or email jmanleyewald@highlandscenter.org