

*Note: Some lessons are only available in certain seasons

Aquatic Organism Investigation: Students briefly observe the stream ecosystem and systematically describe its living and non-living components. Then, they collect stream water and identify insects and other microscopic life. They select one organism to 'interview'- asking questions and making observations of structure & function to answer their questions. They identify the structures that function to help their creature survive in a watery world!

NGSS 4-LS1-1

Life as a Yokuts: In the setting of a Yokuts village site, students learn to crack and prepare acorns in the traditional way using a mortar and pestle. Students play a Yokuts game called Hoop and Pole, training the skills of future hunters! Social Science/ History Standards 3.2- 1, 2 & 4. History 4.1 - 1

Exploring Insects and Spiders: Students design and perform a simple scientific investigation of insects and spiders. They capture insects and spiders using sweep nets, count them, and record data. They examine their catch by placing them in Lucite magnifier boxes and use Insect and Spider ID sheets to identify them. Students identify structures on the animals that may help them survive. 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Pond Ecosystem in Chalk Pastels: Students produce a work of art depicting 3 biotic and 3 abiotic components of the ecosystem and 1 interaction between the two (living and nonliving). For instance, mud on a turtle, fish jumping out of the water, an egret flying in the air. Science standard 3 a & Visual Arts standard 1.1, 1.3

Food, Build, Do, Waste: Students will investigate the way animals in nature use energy and matter. Students will discover how matter cycles and energy flows through ecosystems. NGSS 4-LS-1-1

Bird Communication Behavior: Students sit quietly listening to bird calls and songs, observing the birds and imitating the sounds. They think about different messages birds might communicate. Using binoculars, they make observations of birds communicating. They listen and create a map of bird communication illustrating the ways in which birds use communication to survive and reproduce. Students participate in a scientific discussion sharing their ideas about bird communication. NGSS 4-LS1-2

Erosion Shapes Landscapes: We define erosion and discuss forces involved in shaping the land as students pour water and see erosion in action. Can we find evidence of Erosion, Deposition, and Weathering? Students form teams, receive a safety briefing, and then explore the gully, looking for areas of erosion and deposition. Finally, we measure the depth of the gully and determine the rate of erosion since 1945. ESS2.A Earth Materials and Systems

Soil Analysis: Design an earthen dam: Students will investigate the properties of soils that would make the best earthen dam. They will create a hypothesis and test their design at the site of the Circle J dam. NGSS Science & Engineering Practices Grade Four: Planning and carrying out investigations. Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon.

Food Chain Safari: Students will use binoculars to explore the landscape for organisms in food chains of the Oak Woodland and will identify the sun as the source of energy entering all food chains and plants (producers) as the source of all food energy for animals (consumers), explain the eating behaviors of consumers (herbivores, carnivores, omnivores and decomposers) and give an example of each one in a Circle J food chain, accurately depict a food chain and explain the flow of energy from organism to organism using feeding relationship vocabulary words (producer, consumer, herbivore, decomposer, etc.), and explain at least two scenarios of producers or consumers competing with each other for resources at Circle J-Norris Ranch.

Pollinator Studies: Students will investigate the interdependence of plants and animals in pollination and seed dispersal at Circle J. Students will look closely at flowers and discover how they attract animals and deposit pollen. Students will collect and investigate pollinators and identify the structures that allow them to gather pollen and drink nectar from flowers. Students will find seed caches from animals that help the animal survive the winter and spread the seeds for plants. 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Custom Lessons can be created specifically for your class's needs and match your classroom curriculum.