

Lesson Title: Oklahoma's Biodiversity

Lesson Author: Tom Creider, Oklahoma State Parks

Grade Level: Grade 4 **Subject Area:** Life Science

Time Allotted for the Lesson : 15 minutes

Description of Lesson:

In this lesson, students will observe a large map of Oklahoma. The map features isopleths lines that denote average annual precipitation for different parts of Oklahoma. These isopleths lines run from north to south across the state. This map also displays colored patches that correspond to some of Oklahoma's eco-regions. Using labels that are attached to magnets, students place these labels on the map to delineate precipitation patterns, eco-regions, and those places within these eco-regions where particular native plant and animals live.

Organization for the Activity:

Students are divided into three groups. One group receives the labels for precipitation, another group receives the labels for eco-regions; the third group is given labels with the images of different native plant and animal species.

State Curriculum Standards That Are Met:

This hands-on activity addresses PASS objective 3.1 for Life Science: organisms can only survive in environments that meet their needs.

Instructional Objectives:

1. Become familiar with the definition of an isopleth line;
2. Learn which regions of Oklahoma normally have low to moderate amounts of annual precipitation;
3. Learn the location of some of Oklahoma's eco-regions;
4. Understand the relationship between where different kinds of native plants and animals are found and the characteristics of the eco-regions where they live;
5. Understand that because of its geography and climate, Oklahoma has greater biodiversity than nearly all other states in the U.S. Because of this, Oklahoma has great natural beauty and many special places to explore.

Materials, Resources and Technology

The materials that are needed for this activity are:

1. Map of Oklahoma that is mounted on a metal board;
2. Labels that are attached to refrigerator-type magnets;
3. Images of native plants and wildlife; labels of precipitation and eco-region names that are attached to magnets.

Technology Needed for this Lesson:

No technology is needed.

Web Addresses for this Activity:

None

Student's Present Level of Performance and Knowledge:

No pre-requisite skills are required to perform the hands-on activity.

Instructional Procedures:

Lesson Set

Begin by asking students if they know that Oklahoma has mountain regions, swamps, prairies and large areas that are covered with forests. Tell them that through this activity they will learn about where some of these places are found in their state. Let the students know that these might be fun places to explore.

Techniques and Step-by Step Process for the Activity:

1. Students in the first group place labels at the top of the isopleths lines that denote the average annual precipitation for different regions of Oklahoma.
2. Students in the second group place labels on the color patches that identify some of Oklahoma's eco-regions.
3. Students in the third group place native plant and wildlife labels on the appropriate eco-region where these plants and animals live.

As the students make their decisions on where to place their label, the teacher explains some of the reasons why certain eco-regions are found in particular areas of Oklahoma. Likewise, the teacher shares some of the ways that each eco-region meets the needs of those plants and animals that live there. For example, some eco-regions are in dry, arid locations. The plants and animals that live there have adapted to these environmental conditions.

Lesson Closure:

Through this activity, students are reminded that Oklahoma is a place that has much biodiversity and great natural beauty. They can take pride in knowing that they live in a state that has many different eco-regions; far more eco-regions than are found in most other states. Oklahoma has many places that are fun to explore. It is also important that we all do our part to help keep our environment clean and free of litter and pollution.

Adaptations for Special Learners:

No special equipment is needed. Assistance is to be given to those students who might not be able to read the eco-region labels, or who might be confused about the meaning of the numbers on the labels for the average annual precipitation values.

Supplemental Activities:

Possible extensions might consist of the teacher taking students for a walk around their school ground to see what plants and animals live there. Might distinguish between those plants that are native to Oklahoma and those that are ornamental and that were originally from other places. Native animals that will be discovered will most likely consist of birds and insects. Talk about the eco-region that best describes the region where the school is located.

Assessment/Evaluations:

Through the initial phase of this activity, determine the student's general understanding of differing precipitation patterns across Oklahoma (i.e. which region of Oklahoma is generally wetter and which side of the state has a drier climate). Student's pre-activity knowledge about eco-regions and native plants and animal communities is sensed through this activity. At the conclusion of the activity, student comprehension can be assessed by reviewing the student's work in placing the labels on the map.

Student Products:

A map of Oklahoma that is covered with labels and images that represent the biodiversity of our state.