
Unit 4: Ecosystem Strategies (13 days)

Unit Overview:

This unit focuses on ecosystem strategies such as the types of niches, keystone and indicator species, and species interactions. The strategies are explained using case studies of selected species of high interest such as the Giant Panda, alligators and backyard birds. The Panda is often listed as one of the most popular animals and backyard birds are a connection to nature that millions of people enjoy. By using interesting species to teach ecosystem strategies, hopefully students will develop an interest in the nature in their own backyards.

Lesson Day 1 Lecture 4.18 Specialist and Generalist

Objective(s):

To differentiate between specialist and generalist niches

Topics: **Lecture 4:18A and B**

- The Giant Panda as an example of a specialist specie
- Why are Pandas endangered?
- American Alligator as an example of a generalist specie
- The success story of once endangered alligators

Procedure:

Use Lecture 4:18 notes for class presentation. Follow the guidelines given in Unit 1 on Day 2 under Procedure; Materials List; Motivation; and Suggested Teaching Strategies.

Suggested Teaching Strategies:

Make and hang the seed feeder from the Lab #11 or ask students to bring it in as a homework assignment. It takes about 5 minutes to put together. It will take several days for birds to begin using the feeder as a food source, and the class can not do the survey from Lab #11 until the birds arrive. The location of the feeder should be placed for easy viewing, but many birds like to "eat and retreat" to a nearby tree or bush, so make sure cover is available nearby. They will also be attracted if water, either dripping or in a bird bath is near. If the feeder is hung or mounted on a pole with an apron, it will help prevent squirrels from raiding the food source.

Lecture Support:

Read selections in the text and assign appropriate sections or pages for student reading.

Unit 4: Ecosystem Strategies (13 days) Daily Lesson Plans

Lesson Day 2

Lab #11 Birds as Indicator Species Part 1 Building a Nest Box

Objective(s):

To conduct a feeder box census as an indication of ecosystem health; to build materials to enhance a bird habitat; to learn to identify a common birds visually and by their songs; and to promote bird watching as a life-long way to enjoy nature

Skills attained:

Following construction directions
Safely using tools and equipment
Identifying habitat requirements for birds

Procedure:

Follow directions given in the lab.

Materials list:

See Lab #11 in the Teacher's Manual

Suggested Teaching Strategies:

If your school has a wood shop, this is an excellent project to coordinate with those classes. If not, the teacher should cut the planks of wood into the specified lengths before class so that this can be completed in one period. Borrow or ask students to bring in tools on loan for this lab for their own lab group so that the work goes faster and students do not have to spend time waiting for tools.