

**TEACHING KATE
TEACHING KIDS ABOUT THE ENVIRONMENT**

EVERYBODY NEEDS A HOME

Grade Level: 9-12

Time Required: 3 class periods

SC Science Standards

This lesson plan was correlated with only the grade level specified unless otherwise noted.

- I. D. 1
- II. D. 4. b
- II. D. 5. a, b

Purpose

Students will at both outdoor and indoor locations learn about the habitat requirements of different animals and predict what various changes in the habitat will do to the different animal populations. Biology and ecology of animals will be discussed. Students will gain a better understanding of the forces that impact the survival of different species of animals.

Skills

Application, comparison, decision making, discussion, evaluation, observation.

Concepts

Awareness and appreciation of wildlife, wildlife habitat requirements, impact of nature and/or humans on the environment, species diversity, interrelationship among organisms.

Materials Needed

| | |
|---|------------|
| Pencils | Paper |
| Clipboards | Data Sheet |
| Wildlife Resource/ Identification Books | |

Definition of Terms

| | |
|-------------------------------|---|
| <u>Carrying Capacity</u> | The maximum number of organisms of a given species that can survive in good condition in a particular ecosystem on a long-term basis. |
| <u>Cover</u> | Any material that provides protection to an animal (usually vegetation). |
| <u>Diversity/Biodiversity</u> | The variety of species present and interacting in an ecosystem and the relative abundance of each. |
| <u>Environment</u> | The sum of all external conditions and influences that affect the life and growth of organisms. |
| <u>Habitat</u> | An area that provides an animal with adequate food, water, shelter and living space. |
| <u>Limiting Factors</u> | Influences that restrict the growth and reproduction of organisms. (e.g. food, water, space, shelter, predation, pollution, poaching, accidents, disease, parasites and climatic conditions.) |
| <u>Parasite</u> | Organism that lives off another organism (host); the parasite benefits at the expense of the host. |
| <u>Population</u> | All organisms of the same species in the same area. |
| <u>Predator</u> | An animal that captures other animals for food. |
| <u>Prey</u> | Animals that are captured for food by other animals. |
| <u>Species</u> | The members of a group of organisms that successfully interbreed with each other under natural conditions. |
| <u>Wildlife</u> | Non-domesticated animals. |

Before the Session

The lesson would be more meaningful if the teacher would choose the type of habitat and wildlife indicative of the area. Obtain wildlife resource books that list habitat requirements. Options would be to allow students to do the research beforehand or have data cards made up for each species that lists habitat requirements and estimated carrying capacities. The local Department of Natural Resources biologist could also supply the needed information.

Background Information

Many people never stop to think how their activities impact other organisms. Even natural occurrences such as the death of a tree in a forest affects that forest and the organisms living there.

The death of one mature tree opens up the forest canopy and more sunlight reaches the forest floor. This in turn could cause the growth of a new plant or plants, in the opening on the forest floor, that could provide a new grazing or browsing area for animals. It could mean that some animal has lost a home, while another has found a home.

Suggested Lesson Plan

Day 1

1. Select a site outdoors in a wooded area if possible for students to observe for at least 15-20 minutes in silence with no movement or communication with one another. Have students choose a spot away from other students. They will use all of their senses of observation.
2. Have students record all observations.
3. Allow students to move about quietly for another 10 minutes and record additional observations.
4. Instruct students to write a poem, song or story to convey their feeling about the experience.
5. Use class time remaining to discuss observations. Focus discussion on what the requirements are for survival of the organism observed.

Day 2

1. Discuss carrying capacity and limiting factors. (15 minutes.)
2. Have students define prey, predator and parasite and give examples of each. (5 minutes.)
3. Review food chains and food webs. (10 minutes.)
4. Divide students into 6 groups. Give each group 5 minutes to derive a definition for one of the following words: cover, environment, habitat, population, species, wildlife. Each group will then explain their definition to the rest of the class. (15 minutes.)

Day 3

1. Keep students in the same groups from the day before. Explain that they are owners of a 100 acre tract of land. The tract of land should be the type of forest found in the area. Choose four or five animals that would inhabit that type of forest. The teacher will tell students how many of each type of animal lives in their forest. Each group will be given a data card on habitat requirements for the animals. (See options under Before the Session.) Each group will be given a different event that occurs on their tract of land. Students are to predict the impact the event will have on their different animal populations and record their predictions on their data sheets.
2. Students need to determine which animals will die outright, which can remain on the land, and which will need to find new homes. Students need to be able to justify their decisions.

Events

- a. A class 4 hurricane passes over the area.
- b. The land is developed into one-acre lot homes.
- c. The land is clear-cut and planted in pines.
- d. The land is clear-cut and planted in crops.
- e. The land is developed into a school (or a shopping mall).
- f. Disease wipes out 80% of the mature trees.
- g. Fire burns half the land.

Application

Many students probably notice development occurring around them. This is an activity that allows for reflection on how these activities impact the organisms living in these areas. Students will be in positions one day to help make decisions about development and management of land.

Resources Available

Project Learning Tree. 1993. American Forest Foundation, 1111 19th Street, NW, Washington, D.C.

South Carolina's Best Management Practices. The South Carolina Forestry Commission, Columbia, S. C.

South Carolina's Furbearers. South Carolina Department of Natural Resources, P. O. Box 167, Columbia, S. C. 29202.

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DATA (PREDICTION) SHEET

Name:

Date:

| Animal Species | Beginning Population Numbers | Ending Population Numbers |
|-----------------|---------------------------------|------------------------------|
| I. Reason: | | |
| II. Reason: | | |
| III. Reason: | | |
| IV. Reason: | | |
| V. Reason: | | |