



MINNESOTA ZOO™
Changing how you see the world

Plants and Animals- United They Stand, Divided They Fall Post Visit Activity

MN Graduation Standards supported:

Grade 7

Strand IV.B.3.

The student will recognize that behavioral responses of organisms may be determined by heredity and past experiences.

Strand IV.C.4.

The student will explain the factors that affect the number and types of organisms an ecosystem can support, including available resources, abiotic and biotic factors and disease.

Grades 9-12

Strand IV.B.2

The student will recognize that organisms have both innate and learned behavioral responses to internal and external stimuli, including the tropic responses in plants.

Strand IV.C.1.

The student will describe the factors related to matter and energy in an ecosystem that both influence fluctuations in population size and determine the carrying capacity of a population.

Introduction:

This lesson is a follow up activity to a visit to the zoo. Students will analyze their results and collectively discuss the zoo's performance in meeting the displayed animals needs and behaviors. Lastly, students will evaluate the observation skills and the inferences they made from examining a unknown animal.

Objectives:

At the end of this lesson, students will:

1. Analyze the zoo's capability of meeting animal needs and behaviors.
2. Evaluate their inferences made about a new animal.
3. Differentiate between learned behaviors and innate behaviors seen at the zoo.

Procedure:

Step 1:

The following step will be done as a class discussion.

1. Students will attempt to reconcile the differences between what they saw at the animal exhibit they studied and what they know benefits the animal from their research. They should meet with their small group and compare their pre-activity design to the exhibit design. They will create a list of things that were added or lacking in the zoo exhibit they visited. They will also discuss reasons for the differences and create conclusions for the differences.
2. The class will then discuss as a group if the zoo does an adequate job meeting the needs of their animal population. Students will give concrete examples from what they learned in step A to support their opinion during the discussion.
3. Discussions should include how artificial habitats need to be durable for animals in enclosed areas. Are there ways to modify the area to include more real vegetation?

Vocabulary:

Ecosystem
Arboreal
Camouflage
Carrying Capacity
Behavioral Response
Innate Behavior
Internal Stimuli
External Stimuli

Links:

Designing a Zoo Exhibit:
<http://www.mnzoo.com/education/ticadventures/handbook/c1.htm>

MN Zoo Web Site
(Animal Information):
http://www.mnzoo.com/animals/animals_a-z.asp

Information on Exhibit Design:
<http://www.sfzoo.org/education/pdf/ZDLP.pdf>

Procedure Continued:

4. Some additional questions to discuss are:

- Were there any innate behaviors that were not accommodated for in the exhibit?
- Did the zoo sacrifice roaming space to facilitate visitors to see the animal more easily?
- What safety measures were in place to ensure visitor and animal safety that you have not noticed before?
- What were some innate behaviors seen that the zoo adapted for well?
- What were some learned behaviors seen that may or may not seem out of the ordinary? What were they? You could talk about animal behavior as a sign of boredom.
- What things were you not able to observe and why?

Step 2:

1. Students will compare their inferences about animal behavior and need for vegetation to the animal information that is available at the zoo web site or other internet resources.
2. They will complete a writing assignment summarizing their observations.
3. The students will evaluate their predictions from the second step zoo visit activity and explain how they differ from what is published about the animal needs.