



MINNESOTA ZOO™
Changing how you see the world

Plants and Animals- United They Stand, Divided They Fall Onsite 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 designed for a visit to the zoo after students have completed the related pre-activity. This activity challenges students to evaluate their designed floor plan in the pre-activity to the actual exhibit at the zoo. In addition, students will observe an unfamiliar animal in another exhibit and make inferences about animal needs and behaviors from observations made.

Objectives:

At the end of this lesson, students will be able to:

1. Describe design characteristics of an animal's exhibit at the zoo.
2. Recognize the interaction of plants and animals in an exhibit.
3. List animal behavioral characteristics that are promoted by the exhibit's design.
4. Infer an animal's behavior from a zoo exhibit design.

Procedure:

(Make sure that students are chaperoned and are put into groups by the animals they have studied. There are two steps to the zoo field trip.)

Step 1:

- A. Print the worksheet labeled, "Analysis of Animal Exhibit - onsite worksheet". Make enough copies for each individual student.
- B. The students will sketch or diagram (or take digital pictures) of the animal exhibit they studied/designed in the pre-visit activity.
- C. In addition, they will take time to observe the animal's interaction with the vegetation in the exhibit by filling out their responses on the worksheet.

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:**Step 2:**

- A. Students will go to an animal's exhibit they have not studied. They will study it carefully and answer the questions on the worksheet based on their observations.
- B. They will sketch this exhibit and observe the use of vegetation in the animal's exhibit. Next, using the knowledge that they have gained from the pre-visit exercise, they will make inferences about animal behavior and vegetation needs.