

PREDATOR AND PREY

ACTIVITY:

This center provides a variety of activities that illustrate prey and predator relationships and the importance of predators. You may not have time for all of the activities included in this lesson, so decide which you want to use, keeping in mind the time length of the centers. However, the food chain lesson should be used as an introduction. Background information is also provided in this lesson plan. The activities included in the kit include the following:

- Using the laminated pictures of various animals:
 - identify the animals
 - create a food chain (energy cycle)
- Using the skulls and jawbones:
 - discuss the three different kinds of "eaters"
 - talk about how different kinds of teeth are specialized for eating different kinds of food
- Using laminated pictures of animal faces:
 - talk about the placement of eyes in finding prey and avoiding predators
 - identify various animals
- Using laminated pictures of various animals:
 - talk about the three types of animal feet and how they help animals to move, run, find food, and defend themselves
- Using the rubber mammal foot replicas: make animal tracks in the sand
- Read from either of the two books:
 - The True Story of the Three Little Pigs (in English and Spanish)
 - A Bold Carnivore

LOCATION:

CESC staff will inform you of the location for the activity.

EQUIPMENT AVAILABLE:

Velcro board
Laminated food chain pictures
Laminated animal pictures
Set of real animal skulls or jawbones
Set of rubber mammal foot replicas
(1 set each: Badger, Coyote, Bobcat, Mule Deer)
Book: A Bold Carnivore
Book: The True Story of the Three Little Pigs

EQUIPMENT BROUGHT FROM SCHOOL:

None needed.

ASSIGNMENT FOR GROUP LEADERS A FEW WEEKS PRIOR TO TRIP:

The leader reads all the material about the lesson, selects the activities to be used, and works out a plan for the time allotment. The leader may wish to do additional research about predator and prey relationships.

DIRECTIONS FOR GROUP LEADERS ON TRIP DAY:

Take the kit to the activity area and look over the materials.

THE LESSON:

1. The Food Chain

Begin with a lesson about the food chain. This is a basic, very important concept...the interrelatedness of all organisms. Then choose the remaining activities to suit the knowledge level of the group. You may keep it very simple or you may expand on a concept if the students have some background knowledge.

- Using the velcro board and laminated pictures, create a simple food chain. Hand each child a picture and ask them to place it on the board as each element of the food chain is discussed.
- Ask the children if they know the terms ***herbivore, carnivore, omnivore***. What do they mean? Looking at the pictures, ask the students to tell which animals are herbivores, carnivores, and omnivores.

2. Characteristics of Teeth

- Show the jawbones and skull. Let the children touch the teeth. Ask if they can tell which belongs to an herbivore, carnivore, omnivore. Discuss the shape of the teeth of each jawbone or skull and how the shapes help the animals to eat the types of food they eat. **At this point in the lesson discourage the group from trying to guess the animal...instead concentrate on the types of teeth.**
- Ask the children to feel their own teeth with their tongues. Can they locate different shaped teeth? What kind of teeth are in human mouths? Flat grinders? Sharp pointed cutters? Answers will vary depending on the age of the children and the teeth they have lost and replaced.
- Ask the children to think about what kind of eater we are based on the shape of our teeth.

3. Characteristics of Eyes

- Place pictures of various animals on the velcro board. Ask the group to notice the eyes and the direction the eyes face. Are the eyes on the side of the head, or are they in front? Can they tell which animals are prey and which are predators? What are the reasons for their answers?
- Ask the children to look at one another and decide if we have predator or prey eyes.

- Ask the children to identify the animals posted on the velcro board.

4. Characteristics of Feet

- Using the same animal pictures, take a closer look at the feet. Which animals can run the fastest? Who might run the slowest? Which feet are good for holding and grabbing.
- Introduce the words ***plantigrade, digitigrade, unguligrade***. (Plantigrade = bear, human, badger; digitigrade = coyote or mountain lion, unguligrade = deer, javelina.)
- Give each child a set of rubber foot replicas and ask them to make tracks in the sand. Encourage the children to tell stories about a predator and its prey using the sand tracks as illustrations.

5. Reading a Story

If there is time read from one of the books: [A Bold Carnivore](#) or [The True Story of the Three Little Pigs](#).

Upon completion of each session, collect all materials and place in the kit box.

CLEANUP:

AFTER EACH GROUP: Collect all the pictures and foot replicas and return them to the box. Use the list in the kit to check that all tracks have been returned.

AFTER THE LAST GROUP: Upon completion of all sessions, collect all materials, arrange them in the kit box, and return the box and the Velcro board to the table in Biznaga cabin.

BACKGROUND INFORMATION FOR GROUP LEADERS

A SIMPLE FOOD CHAIN

All living organisms in an ecosystem are dependent on one another. To understand this relationship better we can show how energy flows from one organism to another in a simple "food chain" or energy cycle. Any food chain begins with the Sun and the energy it provides for growing plants. Plants are the first group of organisms in our food chain. Many insects, birds, and mammals depend on plants for their food. Animals that eat plants are called **herbivores** and make up the next group of organisms in the food chain. Examples are grasshoppers, kangaroo mice, deer, pronghorns, and sparrows. Herbivores provide food for the next group...meat-eating animals we call **carnivores**. Mountain lions, bobcats, snakes, and hawks are carnivores. The next group, **omnivores**, eats both plants and meat. Bears, coyotes, and most people eat both plants and meat and are omnivorous. When any organism dies it provides food for the **decomposers**. Bacteria, fungi, and earthworms are examples of decomposers. Many decomposers live in the air and soil and return dead material back to the soil where it is used by the plants.

Predators are animals that eat other animals. **Prey** are animals eaten by predators.

Please use the word "predator" rather than "enemy". Enemy implies the emotion of hatred. Predators play an important role in the energy cycle.

In our simple food chain, mountain lions, bobcats, bears, coyotes, snakes and hawks represent predators. Insects, mice, deer, and sparrows are prey.

CHARACTERISTICS OF PREDATOR AND PREY

EYES:

The eyes of predators face forward. These animals have good depth perception which means they can see how close or far away an animal is. Chasing and catching prey requires good vision in the direction one is moving...forward. Forward facing eyes can also focus on a single forward point.

The eyes of prey animals are located along the side of the head. They have good side and rear vision. If an animal spends most of its time eating grass and leaves, being able to see to the side and rear without moving the head allows it to look out for predators and eat at the same time. Prey animals have almost 360-degree vision.

TEETH:

Predators, usually carnivores, have sharp, pointed teeth used for grabbing and cutting. Little chewing takes place and the food is swallowed whole or in chunks. Long, sharp canine teeth are used for killing, holding and tearing. The sharp, pointed back teeth cut the food into chunks small enough to swallow. The teeth cut much like scissors.

Prey, usually herbivores, have flat teeth that are used for grinding tough plant material.

Some of the teeth have sharp edges, but these are used to break down the plant material and make it easier to digest.

Omnivores, like coyotes and bears, have both sharp and flat teeth for cutting and grinding.

FEET: Mammals have three types of feet:

1) **Plantigrade** (walking on the sole of the foot)

The flat surfaces, which bear the animal's weight, extend from toe to heel and are in contact with the ground at some point during the step. These are slower moving animals.

...To illustrate this foot type, ask the children to "walk" their hands on the ground using the entire flat of the hand.

...Examples:

bear, badger, raccoon, coatimundi, skunk, human being

2) **Digitigrade** (walking on toes)

These animals walk on their toes, with the heel permanently raised. These are faster movers than the plantigrade animals.

...To illustrate this foot type, ask the children to "walk" their hands on the ground with only fingers touching the ground, and the "heel" of the hand raised up.

...Examples:

bobcat, mountain lion, wolf, coyote, fox, rabbit, squirrel, mouse

3) **Unguligrade** (walking on hooves)

These animals move on the tips of their toenails. The toenails have evolved into enlarged nails we call hooves. This group includes the fastest moving animals.

...To illustrate this foot type, ask the children to "walk" on their hands with the fingers bent under so that they are "walking" on their fingernails.

...Examples:

deer, javelina, pronghorn