



Field Trip Enhancement Kit for PREDATOR AND PREY

GOAL

To understand the interactions between herbivores, omnivores and carnivores and simulate the stresses they experience during survival situations.

OBJECTIVES

Students will:

1. Learn what a food pyramid is, and understand the predator-prey relationship within it
2. Discuss factors that can affect the size of a wildlife population
3. Identify and describe the five basic needs for survival
4. Experience first hand the struggle for survival that an animal must face

VOCABULARY

Carnivore: an animal that eats only meat.

Food Pyramid: a table that shows the passage of energy from herbivores, which are eaten by omnivores, which are then eaten by carnivores.

Herbivore: an animal that eats only plants.

Omnivore: an animal that eats a variety of foods including plants and other animals.

Predator: an animal that hunts and kills other animals for food.

Prey: an animal that is hunted for food.

PRE-VISIT ACTIVITIES

1. Have your students name some of the animals that they might find at Fort Whyte or elsewhere in Manitoba. Have them decide whether these animals are carnivores, omnivores or herbivores. Where would each one of these animals fit into a food pyramid? After drawing out a food pyramid, have the students identify what types of food chains may occur within the pyramid. Where would humans fit into the big picture? To take this one step further, add a communicable disease to one of the animals in the food chain (e.g. Rabies), which animal would subsequently be affected?
2. Introduce the idea of Wildlife Populations to your students. Deer and geese are a prime example of populations that are growing "out of control". Deer and goose populations in Manitoba are at record highs. (Oh Deer! a game found in Project Wild is an excellent way to demonstrate fluctuating deer populations). There are various theories on how these populations can be managed. The two streams of thought are natural selection (i.e. survival of the fittest, disease, elements, etc.) vs. human intervention (i.e. hunting, habitat/animal protection, etc.). This is a great area of debate, many people, especially adolescents, have strong opinions with regards to hunting. Make up a scenario to include environmentalists vs. wildlife managers and have them debate the pros and cons of the issue.
3. Ask your students what they feel they might need to survive in a natural environment -- answers may vary from food to Walkmans. Animals require five basic things in order to survive in any given

habitat: food, water, air, shelter and space. If any one of these things is missing or disturbed it will

4. in turn affect the animal populations within it. Ask your students to come up with an ideal habitat. If the habitat is ideal, the population should begin to rise and rise. . . what subsequently will happen? You can then add a forest fire, flood, etc. to the scenario. What other natural and human interventions would affect their habitats.

POST VISIT ACTIVITIES

1. Goose populations at Fort Whyte are increasing annually. Have your students calculate the increase in goose population over the past three decades and where it will be in the future. Here's the scoop:
 - In 1968 Fort Whyte was home to 6 pairs of geese (geese mate for life)
 - The female will lay 6-8 eggs every year (you can assume 7)
 - Geese will mate when they are two years of age, and will live up to about age 10
 - The female goose will meet her mate on her wintering grounds, and the mating pair will always return to the place where she was born, and will nest there for the rest of her life.

Estimate how many birds FWC had on site in 1978, 1988 and 1998.

Ask your students how they feel about this huge and quick rate of change in population. What measures, if any, do they feel should be taken to lower the numbers of geese on Fort Whyte's property? Which of the five basic needs do they feel are affected by these numbers? How are the geese/goose predators affected? How will geese and other animals adapt to these rapid changes? Snow geese and other geese that are nesting in the Hudson Bay lowlands are experiencing even greater stresses caused by a quickly increasing goose population, space restriction, and slow plant growth. Have your students discuss these and other problems presently occurring in Canada.

2. Ask your students where they had fit into the pyramid during their visit to Fort Whyte. Did they gain an appreciation of the animals they represented? Did they feel an element of danger, excitement, anxiety, fear? Did they feel the scenario was fair or realistic? How did they manage to protect and feed themselves? Discuss the strategies they may have used. Did it fall into one of the following major categories? Which other animals fall into these categories? Would one of these strategies have helped them to survive in the game?
 - A. **Sit and Wait Predators:** these predators hunt from an ambush by hiding and then pouncing on the prey (which can usually be found near food and water stations). They depend on active prey, usually take on fairly large prey, and are less vulnerable than those that are running around since they are hidden. They are energy efficient, but also eat less. e.g. Spiders
 - B. **Active Seekers:** searching for prey by swooping or actively looking for food, and depend on sedentary prey types. They will usually take on smaller prey, and are more vulnerable because they are actively moving foragers and can be spotted. This requires much energy, but they are more successful at capturing food. e.g. Dragonflies
 - C. **Salutatory or Hopping Predators:** most predators fall into this "stopping and starting" category. These animals will find an area that they like, hunt there for a period of time, then move to another spot. e.g. Mink
 - D. **Protection in Numbers:** groups of animals living, feeding, or traveling together can escape predation in various ways. A group of animals can spot a predator more effectively than a single animal. This is called *mutual vigilance*. Upon attack, the group of prey

animals may react by scattering, to confuse the predator; they may deploy a physical defense, such as a skunk's spray; or they may even try to defend as a group, such as when a group of crows attacks an owl.

3. There are many videos available that show real life predation. Check out your local video library, Natural Resources, the National Film Board, or the internet for suggestions. You may want to take a look at food webs in a nearby park, ditch, or school yard. You are sure to see birds, insects, squirrels and other creatures interacting with one another. Try dipnetting in a pond or ditch: use an aquarium net and a margarine container, scoop up some aquatic insects, leeches, minnows, etc. You'll be sure to find a feeding frenzy occurring right before your eyes!
4. Specific animals have very specific roles that they play in nature. You may be surprised to hear that the average life span of a rabbit is three months! Its life consists of eating, hiding, reproducing and feeding other animals. In comparison, the fox is a hunter, always stalking and looking for food. Fox prints are always found in a perfectly straight line, unlike a dog's, which are sporadically spread over a large area. The dog has plenty of time to sniff, play and run in circles, never has to worry about food, its role is to be a companion. Ask your students to describe what they feel their role was in the game; e.g. mice, like rabbits, have a very simple job, feeding carnivores and omnivores! Have your students go to the library to research the animals that they represented in the game -- what was their actual purpose in the entire scheme of things? They may be quite surprised to find out the results. Have them share this information with the class.

APPROPRIATE DRESS FOR YOUR FIELD TRIP

To ensure students get the most out of their Fort Whyte experience, we ask that they be appropriately dressed for a 2 hour outdoor excursion. All our activities are outdoors, regardless of weather. Comfort and safety are key in making this an enjoyable and memorable experience.

Suggestions for Outdoor Dress

Layering of clothing is very important in maintaining body temperature and in remaining dry. Four thin garments may offer the same degree of warmth as one thick overcoat, but the four layers allow much greater flexibility. Layers can be shed or added as temperature, wind, exertion, or other variables dictate.

Waterproof outer layers are also important. Rain may get us wet but so will dew on grass, melting snow on pants and puddles on the spring. Boots in the winter are always important to keep moisture out and heat in. The play area is very muddy in the spring. Shoes and pants will get wet and muddy. Have your students wear old shoes and clothes and bring a change of clothes.

Young people are very concerned about their appearances. Remind them that they will enjoy their time better if they are prepared!