Activity: Paws and Jaws

Grade Level: Grade 4

Major Emphasis: Animal Adaptation: Mammals

Major Curriculum Area: Science

Related Curriculum Areas:

Refer to Outdoor Education Curriculum Matrix 3-5
Language Arts
Social Studies

Program Indicator:

The students explain the adaptation of mammals to their habitat in terms of structures and behavior in the life cycle. **(DL2&3)**

Student Outcomes: The student will:

1. identify specific mammals by name. **(DL2)**
2. locate and describe the paws and jaw of each animal. **(DL2&3)**
3. describe how the structure of the paws and jaw affect the mammal's eating habit, type of movement and means of protection. **(DL3)**

Readiness: (DL2&3)

1. Introduce vocabulary:

adaptation	mink	red squirrel	placental
habitat	muskrat	woodchuck	omnivores
environment	opossum	river otter	marsupial
gray fox	raccoon	rodent	herbivores
gray squirrel	red fox	gnawer	carnivores

2. Identify mammals to be used in the activity using SVE study prints.
3. Discuss basic needs of mammals including food, water, shelter and air.
4. View the following filmstrips to introduce examples of adaptation:
   !"Fur, Fins, Teeth and Tails" (Kit 591 Fur)
   !"How Animals Get Food" (National Geographic Society)
   !"How Animals Protect Themselves" (National Geographic Society)

Materials:

stuffed mammal mounts and skulls	animal pictures to correspond with skulls
SVE study prints of mammals	mammal tracks set
Student Supplement A (data sheet)	Golden Guide Book of Mammals

Procedures: (DL2&3)

1. Activity leader will place stuffed animal mounts and appropriate skulls and paws on the trail.
2. Discuss trail rules with students.
   a. Students follow group leader at all times.
   b. Students should not run on the trail.
   c. Students should freeze when an animal is spotted, allowing other students to locate the animal.
   d. Students should not disturb living or non-living things on the trail.
3. Explain to students that they will be looking for animals in their natural habitat to make observations and interpretations about paws and jaws.
4. After all students have found the animal, they can identify it, touch the mammal (gently with one finger), and identify the structure of the jaws and paws. Use skulls and paws as needed.
5. Leader should initiate a discussion about the observation and interpretation of structural adaptations of the jaws and paws.
6. Use the Golden Guide Book of Mammals and the following questions and prompts to stimulate the discussion.
   a. Describe the mammal's teeth.
   b. Are these teeth gnawing, tearing or cutting?
   c. Classify the animal as a carnivore, herbivore or omnivore. Support your answer.
   d. Based upon your observation of the mammal's tooth structure, make a prediction about the habitat needed for the animal's survival.
   e. Describe the mammal's paws.
   f. What function do you think these paws serve (food gathering, protection, climbing, etc.). Support your answer.
   g. Identify other habitats in which the animal could survive.
7. Students will complete student worksheet. (Refer to Supplement A)
8. After completion of the trail, the leader will gather the students in a group and distribute the skulls of assorted mammals. Using their newly acquired information about jaw adaptation, they should hypothesize about this animal's eating habits, any similarities to the mammals seen along the trail and possible clues to this mammal's identity. *Note: Some could have been previously seen, others could be mystery skulls.*
9. Have students use rubber animal tracks to create track prints and patterns. Use index cards or newsprint. Use the following questions to encourage observation and interpretation.
   a. How does the animal walk; on flat fleet, toes or toenails?
   b. Do you think this animal moves fast or slow?
   c. Is the animal large or small?
   d. Does the animal move alone or in a group?
   e. What animal is it?
10. Leader could also use the rubber tracks to make prints along the trail if possible.

Summary: (DL4)

During the summarizing activity, the instructor can present environmental problems plaguing mammals today and can encourage the students to develop plans to alleviate these problems. Some potential problems are:

< loss of protective cover
< overhunting
< loss of natural food supplies
< overcrowding and disease
< smaller amounts of available habitat

Follow-Up:

1. Students select one mammal to research from the trail animals or one of interest. Focusing on the jaw and paws, have students describe how these structures aid in adaptation. **(DL2&3)**
2. Write a descriptive paragraph, sharing observations and interpretations about mammal adaptations. **(DL2&3)**
3. Using the adaptation chart, compare/contrast two of the mammals. Have students use a Venn Diagram to organize their thoughts prior to starting their rough drafts. **(DL3)**
4. Play "Tricky Tracks Part 1, Part 2, Part 3" (Nature Scope-Amazing Mammals: Part 1, p 45).
5. Play a "Menu for Mammals" (Nature Scope-Amazing Mammals: Part 1, p 41).

Extended Activities: (DL2,3,4)

1. Write a haiku about a mammal. **(MC)**
2. Make a paper mache mammal, highlighting an adaptation.
3. Design and create a diorama of mammals common to Maryland, Kenya or Japan. **(MC)**
4. Activity "Habitats for Sale-Writing Classified Ads" (Nature Scope-Amazing Mammals: Part 1).
5. Activity "All Around the World" (Nature Scope-Endangered Species: Wild and Rare). **(MC)**

Teacher Resources:

Books:

< *Nature Scope: Amazing Mammals: Parts 1 & 2, National Wildlife Federation.
< *Golden Guide of Mammals, Zim.
< *Nature Scope: Endangered Species Wild and Rare.

Filmstrip:

< *Fur, Fins, Teeth and Tails" Fur, 591.

Study Prints:

< *Mammals, SVE.

Supplementary Materials:

< *Animal Collection Guidebook.