



Wildlife Lesson/Activity

Magnificent Mammals - Adaptations and Identification

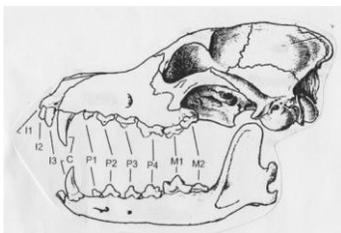
At-a-Glance

Content Area	Mammal adaptations, feeding relationships, North Carolina common native species
Audience	4-6 th grade
Setting	Inside or Outside
Duration	Class period
Objectives	Students will: 1. Use skull references to identify up to twelve common NC native mammals by recognizing key characteristics.
Key Terms	carnivore, omnivore, herbivore, auditory bulla, sagittal crest, zygomatic arch
Materials	Magnificent Mammals Skull and skin references – included with this lesson package Skull ID PowerPoint - teacher reference Animals <ul style="list-style-type: none"> ○ Carnivore animals: coyote, fox (red and gray), bobcat and river otter ○ Herbivore: deer, beaver, rabbit and squirrel ○ Omnivore animals: bear, raccoon and opossum Loaner skulls: contact wrceducation@ncwildlife.org about skulls available for loaning or inquire at a local state park or nature center about skins/skulls available for loaning.

Overview: Instructor provides information about the wildlife category for up to 12 common North Carolina mammals based on the food they eat. The skulls of animals help us determine what type of animal it is and if they are a carnivore, omnivore or herbivore. Participating in a hands-on activity matching replica skulls to information about the animal students learn to identify and categorize wildlife based on skull characteristics. Teachers with access to animal furs can incorporate skull and fur matching into the hands-on activity.

Background:

Review Skull ID PowerPoint, Magnificent Mammals -skin/skull references, and [Species Profiles](#) . Animals are placed into three categories: carnivore, omnivore or herbivore. Skull adaptations for each category help students learn how to identify the animal and know whether it is a carnivore, omnivore or herbivore. Some characteristics that help determine the animal groups include: teeth structure and type, eye placement, nose length, the auditory bulla and skull shape. While examining the teeth of a skull, there is a formula that comes in handy when differentiating between the 3 groups of animals. The dental formula represents the number of Incisors, Canines, Pre-molars and Molars. See coyote skull diagram and dental formula below.



Coyote: I C P M

$\frac{3 \ 1 \ 4 \ 2}{3 \ 1 \ 4 \ 2}$ top one half of mouth
 bottom one half of mouth

Carnivores are meat eaters and have all four types of teeth, incisors, canines, pre-molars and molars. While eating, carnivores use their incisors to cut and pull, canines to pierce, pre-molars to grasp and tear, and molars for crushing. Carnivore eye placement is closer to the front of their skull than omnivores and herbivores for hunting purposes. Canines have longer, more narrow skulls because they hunt using smell.

Omnivores have all four types of teeth like carnivores, but their diet includes meat and plants. Their teeth aren't as sharp and their incisors aren't beveled since their diet isn't strictly meat.

Herbivores have incisors, pre-molars and molars. If an herbivore has canines, they are very small or used by males to attract mates. Their incisors are wide to strip and crop vegetation, pre-molars and molars are mostly flat topped for grinding and breaking down plants parts to aid in digestion.

Introduction: Query students to find out what they already know about human teeth types. Ask students what their favorite food is and if they only ate that food would they be an omnivore, herbivore or carnivore. Then Instructor demonstrate skull dental form and teeth types using their own and student mouths. Briefly go over teeth/skull characteristics based on food animal eats or have students research this info. Use one skull and skin to demonstrate how to use Skull/Skin reference sheet. Go on to activity.

Activity:

Option 1: Matching

1. In classroom or outdoor area, scatter the skulls.
2. Write animal names on small pieces of paper (one animal/piece); put in bag.
3. Divide student into groups. Pull animal names to assign corresponding 'animal info' sheet to groups.
4. Students use info sheet to find skull of animal.
5. Wrap-up - each group shares two reasons why the skull they found matches the info sheet.
6. Skull/fur option: if teacher has access to furs scatter furs and skulls. Students find the matching pair for the animal they are assigned.

Option 2: Stations

1. Set up a 'skull' station for each animal.
2. Divide students into groups; handout the wildlife ID reference and wildlife ID worksheet.
3. Students rotate to each station and fill out their handout.
4. Large group round up – go over ID for all stations reinforcing adaptations based on feeding relationships.
5. Skull/fur option – set up skull/fur station for each animal. And follow steps 2-4.