Home School Series: 3 – 5 Marvelous Mammals

Welcome/ Introduction: Staff/Volunteer Names
Today's Topic- Mammals Question: How are mammals different from other animals?

Icebreaker: **Hibernation Guessing –**Students guess which animals hibernate or stay active.

Background/ Exploration: **What makes a mammal? -**Use posters, mounts, and pictures to help students discover the special features of mammals.

- Fur or hair for warmth and protection (porcupine quills)
- Horns or antlers on some mammals
- Drink milk when young
- Skin with sweat, oil, and scent glands
- Well developed sense of smell
- Whiskers for sensing surroundings
- Mammal brains are larger than birds and other animals.
- Sight is well developed in most mammals.

Marvelous Mammal Facts-Share some mammal records with the students and show them the record sheet of largest, fastest, etc.

Kinds of Mammals-Rodents, Carnivores, Insectivores, Hoofed mammals, Sea Mammals
Ask students to think of an example of each group, then show picture examples.
Discuss and compare the characteristics of each group.

Importance to People- Ask students how important mammals are to us.

- Food Source: We have hunted grazers through history for food & clothing (hides).
- Tools: We used bones, tusks, antlers as weapons and tools (hoes, needles).
- Shelter: Mammoth bones and hides, as well as other animal hides, have covered lodges.
- Work helpers: Dogs were tamed to help hunt and guard; horses, cattle for transportation.
- Domesticated: Cattle, goats, sheep and yaks give food and milk; sheep, goat hair is woven into clothing (angora).
- Modern times: What do we use mammals for today? Who is wearing an animal product? (milk, meat, leather for shoes, belts, etc., product and medical research)

Activity: **Scent Trail-**Students follow a scent with clues to a specific mammal.
Ask them if they could survive in the wild by using their sense of smell

Teeth and Skulls-The special adaptations that help mammals to live include their teeth.
Mammals have different teeth for different jobs:

- Canines pierce/hold
- Incisors clip/cut
- Premolars/Molars grind

Use skull examples to help students identify mammal groups from skulls and teeth.

- Carnivores-cats, dogs
- Herbivores-bison, horses
- Omnivores-humans, opossum, raccoon
- Insectivores-moles, shrews

Carnivore side teeth, called carnassials, are sharp-they cut like scissors.

Activity: Study some skulls and guess what animal they are from by using dentition formulae.

Winter Survival-Explain hibernation and dormancy.

- Hibernation-fat build up, slow breathing, slow heartbeat, lower body temperature
- Dormancy-breath like asleep, wake up when warmer and eat
- Active in winter-fat builds up, fur thickens, feet get furrier, store food

What animals are currently active or hibernating?

- Active: rodents like mice, fox & other predators, rabbits
- Hibernating: woodchucks, bats, bears (not in Iowa)
- Dormant: chipmunk, skunks

OUTDOOR EXPLORATION: Explain how snow protects animals and dormant plants in winter.
Look for tunnels and air holes in the snow.

Tracks- Look at different track shapes and patterns.
Discuss how to interpret a set of tracks (Which animal? How fast did it go? When?).
Hike in different areas looking for mammal signs and tracks.

Closing: **Survival Needs**-Ask the students to name mammal needs (space, food, water, shelter).
Habitat Lap Sit-Have students stand in a circle facing one way and sit on each other's knees.
Designate different students as space, food, etc.
Remove some students (resources), then try to sit again without moving in. Discuss.

Send Off: Bye!

Take Home: Track sheets
Horns and Antlers (*Ranger Rick*)

Vocabulary

Mammal, hibernation, horns, antlers, guard hair, rodent, carnivore, herbivore, omnivore, insectivore, incisor, molar, carnassial, dentition, dormancy, scat, habitat

References

Iowa Wildlife. 1998. Iowa Association of Naturalists Booklet Series. ISU Press, Ames, IA.
Iowa Mammals (IAN-601) http://www.extension.iastate.edu/pubs/wi.htm

Mammal Group Facts

Carnivores

Specialized teeth include canines/fangs in the front, carnassials on the side.
Claws help them catch prey.
Sense of smell:
- 100 X more sensitive than the human nose
- Find food, communicate with scents (territory, recognize individuals, mates)

Hearing - sensitive
Eyesight – eyes forward on head for good depth perception
Hunting – alone (cats), pairs (fox), packs (wolf)
Kill by biting prey.
Carnivores help regulate the populations of animals that they prey upon by taking young, old, & injured.

Rodents – Gnawers

Incisors never stop growing, must gnaw to control teeth growth.
1500 species
2 oz harvest mouse (smallest) to 146 lb. Capybara (largest)
Burrow, glide, swim, leap, hop, run

Incisors – chisel-shaped
- Eat nuts, bark, wood, snip stems, help them dig through hard packed soil.

Prolific reproducers
Include Mice, Gerbils, Beavers

Lagomorphs – Rabbits and Hares

Have a 2nd set of incisors behind first, otherwise seem to be a lot like rodents.
Hopping, running
Hares – open areas –run in zigzag pattern – young are precocial (ready to go!)
Rabbits – altricial – young have no fur, eyes closed, helpless

Insectivores

Small, nocturnal, secretive, eat only insects & larvae
Sharp, pointed nose, tiny eyes, tiny ears, primitive teeth, shrews use echolocation to find prey
Moles – burrowers with large claws, reversible fur helps in tunnels, sensitive sense of touch

Herbivores

Flat, grinding teeth – incisors clip, molars that grind, no canines
Those with hooves are larger than others.
Have a complex digestive system to handle tough plants-some regurgitate & re-chew food to digest later.
Include bison, horses, deer