



Urban Mammals

Curriculum Developer: Willamina Coroka

Lesson Title: Urban Mammals	Lesson Duration: 45-60 minutes
Suggested Grade Level: K-2	
Lesson Objective: Students will learn to identify several characteristics that mammals share and which differentiate them from other animal classes.	
NGSS Covered: K-2-LS1-1, K-2-LS1-2, K-2-LS2-1, K-2-LS2-2, K-2-LS4-2, K-2-LS4-4	

Instructor Notes

The following instructor notes are meant to accompany the Urban Mammals PowerPoint PDF located on the NH Fish & Game Website.

Slide 1: Urban Mammals Title Slide

Slide 2: What Makes a Mammal a Mammal? Briefly read through the list or have student(s) volunteer to read a bullet point.

Slide 3: All mammals are vertebrates! Have students feel for their spine by instructing them to place their hand on the back of their neck and slowly slide it down until they feel a bump. Ask if they know what they're feeling. Discuss backbones briefly- how it connects their head to the rest of their body, provides structure, how we share being vertebrates with many other animals. Fun fact: Human children have 33 vertebrates; human adults have 26!

Slide 4: All mammals are born alive. Mammals do not hatch traditionally (feel free to discuss monotremes briefly but the emphasis is on the vast majority of mammals rather than the outliers). Make it silly by asking them if they (or their siblings!) hatched from an egg. Explain how the largest mammal (the blue whale) to the smallest mammal (the bumblebee bat) starts off life inside their mother's belly/womb. Discuss how baby mammals may look quite different from their adult selves but develop gradually over time. Ask if they have ever seen a baby mammal before (kitten, puppy, lamb, foal, calf?). Mention that we use the terms baby or infant when referring to baby humans. Ask if they know the name of any other baby mammals from the slides. Answers: Skunk: kit; Squirrel: a pup, kit, or kitten; Bear: cub; Moose: calf; Mouse: pup.

Slide 5: All mammals are warm-blooded. Follow along with the slide to instruct students. Ask if they know what their average body temperature is. Ask how they know this. Discuss how humans, as mammals, are able to maintain that temperature even if it varies from our external environment.



Explain how this is an important feature that enables us to live on every single continent in the world. Ask if they can name a couple mammals that live in extreme climates like the north pole (examples: polar bear, arctic fox, timber wolves, snowshoe hares, muskox, caribou, narwhal, beluga, leopard seal). Ask if they know why these animals are capable of living there (heavy fur coats, blubber insulation, wide feet to help stay atop snow, etc.)

Slide 6: Care for their young: Ask the students if they were raised by an adult figure or expected to fend for themselves the moment they were born. “You changed your own diaper!?” is a good follow up for those who are being silly and challenging that last question! Emphasize that mammals are exceptional caregivers who not only protect and defend their young, but teach them to survive in the wild (finding suitable shelter materials, hunting, foraging, grooming, etc.). In the slide, we see a mama opossum giving her joeys a piggyback ride to get them safely to a new location; we see a mama bear leading the way to a foraging site with her two cubs following close behind; and we see a mama bobcat grooming her kit.

Slide 7: Produce milk: From moose to mice and every mammal in between, mammals begin their life on a milk-based diet. Baby mammals cannot eat solid foods until they are older, firstly because their digestion systems aren’t capable of absorbing diverse nutrients and secondly because they don’t have teeth with which to chew! Ask the students if they were crunching on Cheez-its or carrot sticks when they were infants.

Slide 8: Grow fur or hair. Ask students to point to their hair. Ask if the top of their head is the only place where it grows. Prompt them to point out their eyebrows, eyelashes, arm hair, nose hair, ear hair, etc. Explain how all mammals grow fur or hair whether they live entirely in water like whales and dolphins (who are born with scarce hair which later falls off) mostly in water like beavers or otters, or entirely on land like the fox or the chipmunk in the slide. Ask why they think all the three mammals in the slide have different lengths, textures, and color patterns of hair. Ask what they think the function of hair is. Some possibilities include thermoregulation, camouflage, communication, and navigation. Whiskers, for instance, can help any of the three mammals above navigate their immediate environment, even when it’s entirely dark outside!

Slide 9: Am I a Mammal Guessing Game

Present the slide and go through the following animals while asking the students to give a thumbs up if it’s a mammal or a thumbs down if it is not. They can offer a thumbs sideways if they aren’t sure and you can offer some suggestions for deductive reasoning.

- 1.) Striped skunk: has a backbone/is a vertebrate, is warm-blooded, is covered in thick fur, gives birth to live young... mammal or not? Mammal!
- 2.) Painted-turtle: has a backbone/is a vertebrate, doesn’t create his own warmth, hatched from an egg, is covered in scales and a shell...mammal or not? Not!



- 3.) House Mouse: has a backbone/is a vertebrate, is fuzzy and has long whiskers, is warm-blooded, was born alive in a litter with other brothers and sisters...mammal or not? Mammal!
- 4.) Garter snake: has a backbone/is a vertebrate, is smooth and scaled, is cold-blooded and hatched from an oblong egg...mammal or not? Not!
- 5.) Black-capped chickadee: has a backbone/is a vertebrate and is also warm and fuzzy but...is that fur? No, that's feathers! Do mammals have feathers? Mammal or not? Not!
- 6.) Eastern coyote: has a backbone and is warm-blooded. Raises its pups, and is born alive. Covered in stiff hairs from nose to tail....mammal or not? Mammal!

Slide 10: Lastly, are YOU a mammal? Why or why not!?

Extension: Head outside and see how many wild animals you can discover. Are some of them mammals? How do you know?

Assessment: Upon completing this lesson, students will be able to:

- Identify at least 2 characteristics of a mammal;
- Identify 3 urban mammals;
- Describe why they are a mammal;
- Formulate at least one question about mammals in their neighborhood.