

# Explore Mammals & Their Features

## OVERVIEW

Students will observe physical features and explore how mammals are adapted to their environments.

## BACKGROUND FOR EDUCATOR

Mammals can be found in every kind of environment, from snow-capped mountains to the hottest desert. Their physical features enable them to adapt to and survive in their environment. For example, carnivorous mammals such as the jaguar and the badger use their bladelike teeth and sharp claws to hunt prey. The lynx's thick fur keeps it warm on the Canadian mountains and the skunk can ward off predators with its spray of musk oil.

## BEFORE YOUR VISIT

### Activity: Mammal Adaptations

Show students a picture of a cat and/or a dog. Have them observe the mammal and make a list of the body parts, or features (e.g. eyes, fur, teeth, legs). Then ask students to think about how each feature would help the animal survive if it lived in the wild.

*(Answers may include: The cat's claws would help it catch prey, such as birds.)*

Point out to students that both cats and dogs are mammals. They are also carnivores—animals that eat meat. Tell students that at the Museum, they will observe much bigger cats and dogs, such as jaguars and wolves, which live in different parts of North America.

## DURING YOUR VISIT

### Hall of North American Mammals

1st floor (30-45 minutes)

Have students use the student worksheets to explore mammals and how they're adapted to their habitats. Divide your class into nine groups and assign each group to one of the nine dioramas featured in the Teaching in the Exhibition section: (1) Alaska Brown Bear, (2) Mountain Lion, (3) Jaguar, (4) Canada Lynx, (5) Wolf, (6) Coyote, (7) Spotted Skunk & Cacomistle, (8) Short-Tailed Weasel, (9) Badger. When groups have completed their observations of the first diorama, direct each group to visit a second diorama that displays a very different environment (for example, the Alaska Brown Bear group might want to pick a diorama with a desert or forest scene). It is important that all students within the group visit the same second diorama.

### Milstein Hall of Ocean Life

1st floor (20-30 minutes)

On the Lower Level of this hall, have students explore the polar bear diorama and elephant seal diorama. Invite students to observe physical features, such as ears, feet, tails, and fur. Ask them to think about why the seal can live in water and swim so much better than the polar bear. *(Answers may include: The seal's webbed feet enable them to easily propel water.)*

### New York State Science Curriculum

**LE 3.1c** In order to survive in their environment, plants and animals must be adapted to that environment.

### Plan how your students will explore the Hall of North American Mammals using the student worksheets.

You might choose to divide your class into nine groups. Within each group, you may also choose to have students work in pairs.

Distribute copies of the student worksheets to students before coming to the Museum. You may want to review the worksheets with them (and their chaperones) to make sure they understand the activity before entering the hall.

## BACK IN THE CLASSROOM

### Activity: Mammals & Their Environments

Have students work in the same groups as at the Museum. Ask them to review Sections 1 and 2 of their worksheets and combine their data from the first two columns of the table to create a group list of (1) features and (2) how each feature helps the mammal survive in its environment.

Then create a class list, and have students point out features that all these mammals share. Point out to students that the mammals they observed have two different types of adaptations: (1) adaptations that help them find food and (2) adaptations that help them survive the environment. For example, sharp claws and teeth are features that will help any mammal find food, and these features are shared by most of these mammals. Other features, such as coat length, vary from habitat to habitat, even if the mammals are hunting similar prey.

Then have students discuss Section 4 of their worksheets and combine their data from the third column of the table. Ask students to discuss what happened when they imagined the mammal moving to a different environment. (Be sure to tell students that while mammals aren't going to suddenly swap environments, their environments may change due to factors such as habitat destruction or climate change.) Help students understand that adaptations that are suitable for some environment may or may not be suitable for other environments. For example, the lynx's heavy fur coat would not work in the mountain lion's desert. But sharp claws would help in any environment because they're all predators. Ask:

- What features help your mammal survive in its environment?  
(Answers may include: *It uses its claws to catch and kill prey. Its fur keeps it warm.*)
- What features do you think would work in any environment? Why?  
(Answers may include: *Sharp claws would help in any environment because the mammal is a predator.*)
- What features are really specific to its environment? Why?  
(Answers may include: *The lynx's heavy fur coat might not work in the mountain lion's desert.*)

## ONLINE RESOURCES

### Moving Mammals

[amnh.org/ology/movingmammals](http://amnh.org/ology/movingmammals)

Walk, hop, gallop, swim, glide, burrow, and even swing from trees. Explore this interactive to see how fast, and slow, mammals can move.

### Super Teeth

[amnh.org/ology/superteeth](http://amnh.org/ology/superteeth)

Explore mammals' teeth with this matching game and coloring book.

### Mammal Flipbooks

[amnh.org/ology/mammal\\_flipbooks](http://amnh.org/ology/mammal_flipbooks)

Create six flipbooks that show how mammals move.

### In Pictures: Extreme Mammals

[amnh.org/ology/pics\\_extrememammals](http://amnh.org/ology/pics_extrememammals)

From the extinct *Cynognathus* and *Repenomamus* to the plant-eating dugongs and manatees, explore some of Earth's most unusual mammals.

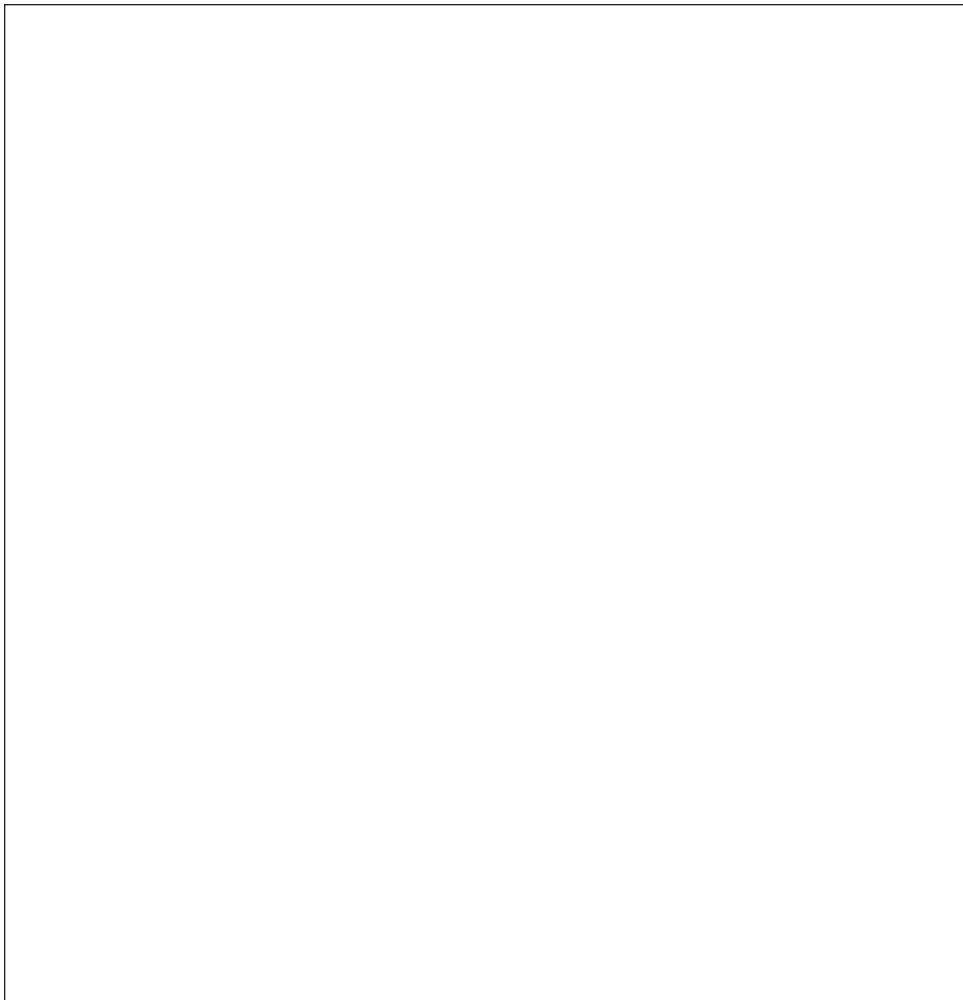
## Explore Mammals & Their Features

Welcome to the American Museum of Natural History! Today you will explore mammals that live in different environments in North America.

**1. Pick a mammal from the list.** These are all carnivores (meat-eaters).

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Alaska Brown Bear | <input type="checkbox"/> Jaguar        | <input type="checkbox"/> Short-Tailed Weasel        |
| <input type="checkbox"/> Badger            | <input type="checkbox"/> Lynx          | <input type="checkbox"/> Spotted Skunk & Cacomistle |
| <input type="checkbox"/> Coyote            | <input type="checkbox"/> Mountain Lion | <input type="checkbox"/> Wolf                       |

**Observe this carnivore and draw it in the box.**



**Describe its environment.**

**What animals do you think it eats?**

**2. What features help this mammal survive?** For example, what features help it hunt and eat? Protect itself from other animals? Not get too hot or too cold?

**Fill in the first two columns below.** (You will complete the 3rd column later.)

Feature	How does this feature help the animal survive?	How will this feature work in a very different environment?

**3. Label the features from the chart in your drawing.**

**4. Next, go to a different diorama that shows a very different environment.**

Diorama: \_\_\_\_\_ Name of Environment: \_\_\_\_\_

**Compare the two environments.**

What's the same?

What's different?

**Imagine that your animal lived in this new environment.** Would it be harder or easier to survive there? Why?

Would the features you listed in your chart help it or hinder it in this new environment? **Fill in the third column of the chart.**

Do you think your animal would be able to find its normal prey? How would what it eats have to change?

Would it have to change its behavior in any way to survive in the new environment? How?

## ANSWER KEY

### Explore Mammals & Their Features

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| <input type="checkbox"/> Coyote            | <input checked="" type="checkbox"/> Mountain Lion | <input type="checkbox"/> Wolf                       |

*(Sample Answer)*

**Observe this carnivore and draw it in the box.**

**Describe its environment.**

*(Sample Answer: It lives in the Grand Canyon. It's dry and rocky, with very few plants.)*

**What animals do you think it eats?**

*(Sample Answer: It eats animals such as deer and rabbits.)*

# ANSWER KEY

**2. What features help this mammal survive?** For example, what features help it hunt and eat? Protect itself from other animals? Not get too hot or too cold?

**Fill in the first two columns below.** (You will complete the 3rd column later.)

Feature	How does this feature help the animal survive?	How will this feature work in a very different environment?
<i>(Sample answer: claws)</i>	<i>(Sample answer: It uses its claws to catch and kill prey.)</i>	<i>(Sample: It would still use its claws to hunt prey.)</i>
<i>(Sample answer: fur)</i>	<i>(Sample answer: Its fur keeps it warm.)</i>	<i>(Sample: Its fur is too short and can't keep it warm on the snowy mountain)</i>

**3. Label the features from the chart in your drawing.**

**4. Next, go to a different diorama that shows a very different environment.**

Diorama: *(Sample answer: Musk Ox)* Name of Environment: *(Sample answer: Ellesmere Island, Canada)*

**Compare the two environments.**

What's the same?

*(Sample answer: Both environments are rocky and mountainous, with both high and low elevations.)*

What's different?

*(Sample answer: The Grand Canyon is very dry and it looks very hot. It has a few plants. The environment of the musk ox is very cold and snowy. I don't see any plants here.)*

**Imagine that your animal lived in this new environment.** Would it be harder or easier to survive there? Why?

*(Sample answer: I think the mountain lion would be very cold and may not survive.)*

Would the features you listed in your chart help it or hinder it in this new environment? **Fill in the third column of the chart.**

Do you think your animal would be able to find its normal prey? How would what it eats have to change?

*(Sample answer: No, I think that the deer it normally eats is not there. It would have to try to hunt the larger prey and it might have a hard time.)*

Would it have to change its behavior in any way to survive in the new environment? How?

*(Sample answer: Yes. It would have to try to stay warm. It might have to find new prey, since it would not find its normal prey, the deer.)*