

Thank you for choosing the Oregon Zoo for your field trip destination and helping us make a better future for wildlife. We look forward to seeing you and hope you enjoy your visit.

The activities in this guide explore how animals are adapted to their environment. They are designed to help you maximize your students' education experience during and following their zoo field trip. All activities are aligned to core academic standards and address the following Essential and Guiding questions:

- What happens to animals when their environment changes?
 - How are animals adapted to live in their environment?
 - Why is protecting animals and their habitats important?
 - What actions can people take to help protect animals and their habitats?

The Oregon Zoo hopes that as a result of this program, students will be able to:

- Define adaptation as a body feature or behavior that helps an organism survive, and differentiate between physical and behavioral adaptations.
- Identify what might happen to animals if their habitats are destroyed.
- Name two actions they and their families can take to help protect healthy ecosystems.

The program is correlated to the following academic standards:

Next Generation Science Standards:

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Background for Teachers:

An adaptation is a body feature or behavior that helps an animal survive in its environment. Specifically, they help an animal obtain food, keep safe, build homes, withstand weather, and attract mates.

Adaptations can be either structural or behavioral. A structural adaptation is any physical feature on an animal. Examples include the hooked bill on a raptor, the webbed feet of a duck and the spines on a porcupine. Behavioral adaptations are something an animal does usually in response to an external stimulus. Migration and hibernation are examples of behavioral adaptations.

Each animal's adaptations are unique to the environment it lives in. The webbed feet and moist skin are just a few of the adaptations an Oregon Spotted Frog has to help it live in a wetland. Because animals are adapted to live in a specific environment, if the environment changes the animal may not be able to survive. If the wetland an Oregon Spotted Frog depends on dries up, the animal will not survive because it does not have the adaptations needed for life on land.

Protecting animals is important because each plays an essential role in its ecosystem. Frogs, for example, help control insect populations. They also provide a valuable food source for a variety of birds and snakes. Without frogs, the ecosystem that it lives in is not as healthy.

Classroom Connections

Fourth Grade – Adaptations



Although habitat loss is a big problem, our small actions can make a difference. Encourage students to take the time to reduce, reuse and recycle materials; participate in re-planting project; or create wildlife habitat on your school grounds.

At the Zoo Activity

Download and print the student version of *Eco-Explorers: Adaptations*

<https://www.oregonzoo.org/discover/field-trips-and-school-programs/teacher-resources>

In this activity, students use the numbered map and clues below to find animals that have the following physical or behavioral adaptations. Students then describe how the adaptation is used for survival.

Number on Map	Where does this animal live? (Type of habitat)	Adaptation	Type of Adaptation (Physical or Behavioral)	Animal with this adaptation	How does this adaptation help the animal survive?
1	Flood plains in the African rainforest that often dry up	Fish that has lungs and can breathe air	Physical	Lungfish	Helps fish survive dry conditions
2	Shallow ponds in the African rainforest	Amphibian that covers body in mucus when it's hot outside	Behavioral	African burrowing frog	Helps animal stay cool
3	Underground tunnels in the African savannah	Rodent that has excess skin on sides of mouth	Physical	Naked mole rat	Keeps soil out of mouth as it burrows underground
4	African savannah	Cat with strong, sharp teeth	Physical	Lion	Helps to slice their food / prey
5	African savannah	Dog that hunts together as a team	Behavioral	African wild dogs	Helps them catch their prey
6	Pacific ocean along the Southern coast of Peru and Chile	Bird with solid bones	Physical	Humboldt penguins	Allows them to dive deep (air-filled bones would act like floaties)
7	Forests in the Pacific Northwest	Cat that hunts by stalking its prey	Behavioral	Cougar	Helps them to sneak up quietly on prey
8	Steep rocky mountains in the Pacific NW	Thick white fur	Physical	Mountain goat	Provides camouflage and helps them stay warm

Post-Field Trip Activity

- Review the information collected by students while at the zoo, paying particular attention to how each adaptation helps the animal survive. Now have students apply what they have learned by creating an animal and describing the adaptations it would need to survive in its habitat.

- Have students invent an animal and give it a creative name. In the first part of the activity, students need to describe:
 - where the animal lives (climate, vegetation)
 - the animal's body parts (e.g. type of body coverings, shape of mouth, length of tail, position of eyes)
 - what it eats
 - how it moves around
 - where it hides (shelter)

- Next, have students describe the animal's physical and behavioral adaptations. Specifically:
 - what adaptations help the animal gather and eat its food
 - what adaptations help the animal breathe
 - what adaptations help the animal to move through its environment
 - what adaptations help the animal to defend itself
 - what adaptations help the animal survive the climate it lives in

- Next, have students should make a poster of their invented animal and its habitat.

- Finally, have students present their animal to the class.

- After the presentations, discuss what would happen to an animal if its habitat changed and why this is problematic. Brainstorm a list of actions students can take to protect the animal's habitat.