

Survival Curriculum Guide Grades 9-12



Goal: Students will be able to explain what an adaptation is and give examples of different types of animal adaptations.

Association of Zoos and Aquariums Conservation Message:

All life on Earth exists within an ecosystem.

- a. Ecosystems are made of interdependent relationships between groups of living things (biodiversity) and their physical environment.
- b. An impact on any element of an ecosystem has ramifications throughout the ecosystem.

Human beings are an integral part of all ecosystems.

- a. Human activities within ecosystems affect these systems

Sunshine State Standards:

- **SC.912.L.17.6** Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.
- **SC.912.L.15.6** Discuss distinguishing characteristics of the domains and kingdoms of living organisms.

Background Information:

Every animal must have unique adaptations in order to survive. An **adaptation** is any physical or behavioral characteristic that makes an animal better able to live in its environment. All animals have specific **physical adaptations** that help them find food and escape from predators, such as their coloration, size, type of teeth, and shape of feet. For example, a shark's gills allow it to breathe under water, its sharp teeth allow it rip through its prey's flesh, and its gray back and white belly help it to **camouflage** with the ocean floor from above and the bright sky from below. Animals also have **behavioral adaptations** that help them survive, such as the way they react to threats or the way they attract a mate and raise their young. For example, chameleons move very slowly and rock back and forth between steps, which makes them look like a leaf blowing in the wind to other animals. Physical and behavioral adaptations can also work together—when a hedgehog is frightened, it curls into a ball (behavior) so that it is protected by its sharp spines (physical).

Animals sharing the same habitat must each have special adaptations in order to **compete** with each other. Although not every species can be the fastest, strongest, and toughest animals, they do each have distinct adaptations to suit their own specific needs. For example, a turtle may not be able to run fast enough to escape from a raccoon, but it does have a strong shell to protect it. A tiny poison dart frog would be a perfect sized meal for many animals, but the toxins in its skin keep it safe from potential predators.

Because animals are so well adapted to live in their particular habitat, they are often unable to survive in different conditions. When humans make changes to an environment (draining a lake, building a road, cutting

Vocabulary

Adaptation – any physical or behavioral characteristic that makes an animal better suited to survive in its environment

Physical adaptation – a characteristic of an animal's body that makes it better suited to survive in its environment

Behavioral adaptation – something an animal does that makes it better suited to survive in its environment

Camouflage – blend in with surroundings

Competition – the simultaneous demand by multiple organisms for resources such as food and space

down trees, etc.), many animals cannot live in the new conditions. Even if only one species is initially affected, it can cause a chain reaction that will also affect other animals in the area. For example, gray squirrels are adapted to living in trees and eating food from trees. If people cut down all the trees in an area, the squirrels will have to go somewhere else. The other animals that are adapted to preying on squirrels, such as foxes, will also have to leave.

Procedure (as presented by zoo instructor):

- Introduction (5 minutes)
- Define adaptations and give examples using biofacts (10 minutes)
- Give examples of adaptations using hands-on animal interaction (15 minutes)
- Check for comprehension (5 minutes)
- Allow for questions (5 minutes)

Evaluation: The zoo instructor will continually check for comprehension throughout the lesson by asking questions and reinforcing ideas.