

ASTOUNDING ADAPTATIONS

Grades 4 - 6

NJCCCS: 5.1, 5.3, 5.4

Field Trip Overview:

On this field trip, your students will learn about animal and plant adaptations. The students will investigate movement, protection, and feeding adaptations through hands-on stations. These stations incorporate live animal interaction, tool manipulation, and cooperative work. Weather permitting, the students will go on a field hike to see these adaptations at work in nature.

Background Information:

Adaptations are specialized characteristics that plants and animals develop over time in response to environmental pressures. Adaptations may be physical features or specialized behaviors. These “tools” enable the plant or animal to survive in specific conditions. Adaptations come in many forms. For example, they might help an animal compete for specific kinds of foods; enable locomotion in air, water, trees, and on lands; or provide protection through color (camouflage), armor (shell), or the ability to fight or flee. Plant adaptations provide means for obtaining oxygen, nutrients, water, sunlight and other necessities.

Three quarters of Earth is covered with water and many plants and animals live in water-dominated habitats such as wetlands. These living beings have a variety of remarkable strategies for wetland survival. Developed over time, these adaptations help wetland residents make use of available nutrients and energy, protect species against enemies, and cope with different climates. There are many examples of how animals and plants are suited to live in wetland environments. For example, fish have streamlined bodies and fins to help them maneuver through water.

Behavior patterns are also examples of ways animals have adjusted to wetlands. Migration patterns of birds correlate with wetlands areas, which they utilize for food and resting spots. One example of this phenomenon occurs in early May each year when thousands of Red Knots (shore birds) migrate from South America to the Arctic to breed. Along their journey they stop at the Delaware Bay to rest and gorge themselves on horseshoe crab eggs to fuel up for the long trip north. Group behaviors are also adapted to

increase the chance of survival. For instance, Atlantic Silversides swim together in large schools to avoid falling prey to predators. As the small fish turn in unison, predators have a difficult time targeting a single fish.

Vocabulary:

Adaptation: a body part or behavior that aids in an organism's survival in their environment

Brackish: a mixture of fresh and salt water

Camouflage: an adaptation where an organism has certain colors or patterns that help it blend into a background to avoid predators

Consumer: an organism that feeds on plants or animals

Estuary: a habitat where the river meets the sea and creates brackish water

Habitat: the natural environment for an organism

Niche: an organism's place or role in its habitat

Organism: any living thing

Producer: an organism that collects energy from sunlight via photosynthesis, serves as a food source for consumers

Wetland: a habitat characterized by wet, spongy soil such as a marsh, swamp, or bog

References / Resources:

- Background information adapted from WOW! The Wonders of Wetlands [WOW! The Wonders of Wetlands](#)

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Pre-Trip Activities

1. What Lives Here?

Have students brainstorm to draw up a list of plants, animals, and other organisms that live outside around the school and/or neighborhood. Even though human communities seem to just be about people, even suburban and urban places host wildlife. However, not all animals can readily survive in our neighborhoods. Challenge students to think about some of their local wildlife and what it is about them that enable them to move in around us. Where do they make or take shelter? What kinds of food can they find? How do they get a drink of water? Who do they need to be careful of and how do they protect themselves?

2. Habitat Adventure

Adapted from Project Learning Tree “Habitat Pen Pals”

Students will use the internet to define a specific habitat, list at least five characteristics of that habitat, and find a picture of the habitat studied. What kind of water is present? Do plants provide shelter or food for animals? Have students print out a map, and shade in where the habitat can be found. Students could also create a diorama, mobile, poster, or collage showing animals and plants of the habitat.

3. Habitats of the World

Adapted from Discovery School

[Discovery Education: Habitats Of The World](#)

Tell the students they are going to research different habitats of the world. Each group will produce a report on its habitat including the following information: a. a physical description of the habitat; b. examples of the habitat (geographical locations); and c. examples of animals and plants that live in the habitat.

Assessment Opportunity: Students will prepare and present a report to the class about the animal/plant they chose to research.

4. Wonderful, Waterful Wetlands From US EPA's Water Sourcebook

In this teacher led table-top model, students will be introduced to the characteristics and functions of a wetland.

"Wonderful, Waterful Wetlands." US EPA.
[EPA: Wonderful, Waterful Wetlands](#)
Pages 1-5

References / Resources:
[EPA: Wetland in a Pan](#)

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Post-Trip Activities

1. What is your Niche?

Adapted from New Jersey Audubon Society's Bridges to the Natural World

In the classroom list on the board and describe different jobs and services offered by people in a human community, such as a sanitation engineer (cleans up waste material), security guard (sounds an alarm when an intruder enters), farmer (cultivates the soil so water and clean air can assist plants to grow) and a delivery person (carries products from one place to another). These are only examples and the list can be expanded to include other occupations. Next, assign students to teams of two and explain to the class that they are going to go outside and observe similar jobs performed in the wild. For example, a student may see a squirrel burying an acorn. One job of the squirrel could be interpreted as a farmer planting a crop. Match as many job descriptions that you listed on the board with animal activity or evidence of animal activity that is observed. Hand lenses, observation containers and binoculars can be placed in a central location for student use.

Assessment Opportunity: Students will record their observations and compare them to the service/jobs in a human community.

2. Importance of Wetlands Webquest

Through this website students will learn about the important value of the wetlands and the functions they provide. Students will be challenged to answer the question of "How to protect the wetlands?"

[Importance of Wetlands Webquest](#)

Assessment Opportunity: Students will work in teams to present their research and findings to the class.