



Frisch's Outreach: Amazing Adaptations (Gr.4-6) Extensions

At a glance

This program allows students to explore the many ways adaptations allow animals to survive.

Goals

This class is designed to give students the opportunity to explore how animal adaptations enable them to survive.

Objectives

At the conclusion of this program, students should be able to:

- 1) Define the term "adaptations" and cite three examples.
- 2) Explain the importance of adaptations (i.e. defense, food gathering, etc.) to animals.
- 3) Discuss the premise that behavioral adaptations are essential to an animal's survival

Theme

Animals possess many types of diverse adaptations that enable them to survive.

Sub-themes

1. Animals will depend upon body parts to find food, water, shelter, and space.
2. Animals will depend upon behavioral adaptations to find food, water, shelter, and space.
3. Adaptations that are used less or never used will become smaller or disappear.
4. Humans possess specific adaptations that allow us to achieve many complex tasks.

Academic standards

Ohio Science Academic Content Standards	Science <i>Grade 4-6</i> Diversity and Interdependence of Life 4,5
Kentucky Core Content—Science	Life Science: Grades Primary through 4: <i>The Characteristics of Organisms: SC-E-3.1.2, SC-E-3.1.3</i> <i>Organisms And Their Environment: SC-E-3.3.1</i> Grades 5-7: <i>Diversity and Adaptations of Organisms: SC-M-3.4.1, SC-M-3.4.2</i> <i>Regulation and Behavior: SC-M-3.2.1, SC-M-3.2.2, SC-M-</i>
Indiana Science Standards	Grade 5: Physical Setting- <i>The Living Environment: Diversity of Life: 5.4.2</i> <i>Interdependence of Life and Evolution: 5.4.7, 5.4.8</i> Grade 6:

Vocabulary

- Adapt**—Changing in structure, form, or habits to fit different conditions.
- Adaptations**—Something that helps an animal survive.
- Behavior**—Activity or change in relation to an environment; the way an organism acts in response to a stimulus.
- Biome**—A natural community of plants and animals that is largely controlled by climate.
- Defense**—Resistance to, or protection from attack.
- Display**—A means of attracting attention.
- Habitat**—Natural home or dwelling place of an organism.
- Hibernation**—Spending the winter in close quarters, in a torpid or lethargic state.
- Migration**—To pass periodically from one region or climate to another for feeding or breeding.
- Mimicry** --The superficial resemblance which some animals exhibit to other animals or to the natural objects among which they live; thereby, securing concealment, protection or the like.
- Movement**—Change of place, position or posture; particular act or manner of moving.
- Sense**—The faculty by which an organism is aware of an environmental change.
- Survival**—Living or continuing longer than something else.

Extension

- Direct each student to make or bring to class 1 or 2 pictures of animals that exhibit camouflage. Get as many different examples as possible and display them around the room. Discuss camouflage as an adaptation and develop this as a discussion of other adaptations.
- Prepare a collection of smells by soaking cotton balls, putting objects in small closed containers, or covering cut fruit or vegetables with foil and poking holes in it with a toothpick. Have students close their eyes and guess, after sniffing, what the odor is. (You can use freshly cut grass, onion, banana, peanut butter, lemon, lime, garlic juice, perfume, spices, etc.) Discuss the importance of the sense of smell to the survival of various animals. Extend this to a discussion of other adaptations and their importance to survival. The class could suggest classroom experiments that would demonstrate specific adaptations (i.e. hearing, touch, eyesight, etc.)
- “Pretend you are a large grass-eating (herbivore) animal.” Divide the class into groups. Assign a large herbivore to each group and ask them to decide which adaptations their animal needs to be able to eat the large amounts of grasses or leaves it

requires. After research, each group can present its animal and adaptations. Stimulate discussion on the differences among the animals’ adaptations.

- Using tape, fasten the thumb to the palm of each student’s hand. Have students try picking up nuts or seeds, writing their names, cutting out paper on a line, buttoning or unbuttoning buttons, etc. Students could also try to construct a bird’s nest of twigs, grass, and string without using their thumbs. Discuss the importance of the opposable thumb, to human survival. Is the thumb as important as a bird’s beak in terms of survival?
- Assign a different animal to each student. Each student must be able to tell after doing research how their animal would defend itself from cold wind, predators, hunger, drought, heat, et al. Discuss whether these are physical or behavioral adaptations.

Create a new animal: Each student must design a “new” animal. They will need to describe what it would look like, what its habitat is (water, sea, another planet, etc.) and what adaptations it would need in order to survive. These students should be very creative, perhaps humorous in their approach. Encourage them to be specific about size, weight, color, movement, defenses, etc. They should include as many types of adaptations as possible. Models or drawings can be included as part of the classroom display

Resources

Books:

Attenborough, David. The Trials of Life: A Natural History of Animal Behavior. Ted Smart. 1995.

Bekoff, Marc. Encyclopedia of Animal Behavior. Greenwood Press. 2004.

Goodall, Jane. In the Shadow of Man. Houghton Mifflin. 1983.

Masson, Jeffrey Moussaieff. When Elephants Weep: The Emotional Lives of Animals. Random House. 1995.

McCarthy, Susan. Becoming a Tiger: How Baby Animals Learn to Survive in the Wild. Harpercollins. 2004.

Websites:

ALA's Great Websites for Kids:
Animals

<http://www.ala.org/gwstemplate.cfm?section=greatwebsites&template=/cfapps/gws/displaysection.cfm&sec=1>

Awesome Library – Kids

<http://www.awesomelibrary.org/Classroom/Science/Animals/Animals.html>

Awesome Library – Teachers

<http://www.awesomelibrary.org/Classroom/Science/Animals/Animals.html>

Cincinnati Zoo & Botanical Garden

www.cincinnati-zoo.org