Water

Grade 5 Subject: Science

Aquatic Animal Adaptations

Overview

Why can some animals live in a certain type of habitat, while another animal cannot live in that habitat? Students will match an environment/habitat with an animal that has adaptations to survive in that environment or habitat.

Standards/Benchmarks *

- Describe how plant and animal structures and their functions provide an advantage for survival in a given natural system. Science (5.4.1.1.1)
- Write informative/explanatory texts to examine a topic and convey information clearly. ELA (5.6.2.2) Extension only.
- Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. ELA (5.6.7.7) Extension only.

Background

Plants and animals have adaptations for types of habitat where they live, and some have very specific adaptations for aquatic habitats. For instance, in addition to nearly waterproof feathers for insulation, many ducks have legs far back on their body and webbed feet adapted to swimming, but not well suited for walking or climbing. Beavers are well known for their adaptations for aquatic living; flat tails, webbed feet, and thick nearly waterproof fur. Cattails are plants with specialized seeds, roots and leaves all adapted for living in an aquatic habitat. Tamarack, Willow, Cottonwood and Alder trees have shallow root systems necessary for aquatic habitats.

The Activity

Warm Up

Read aloud the book, *Underwater Animals*, by Helen Cooney. Other book options are listed in the resource section.

1. After reading the picture book together as a class, take one of the animals from the book and list the adaptations that animal has to live in the water.

Example: In the above mentioned book, *Underwater Animals*; page 20, 'Tranquil Turtles'; pond turtles-webbed toes; sea turtles-broad, flat flippers; soft-shell turtle-breathes through its narrow snout; leatherback turtle-instead of hard, bony shell, it has a tough, leathery skin; turtles are toothless, they snip off pieces of food with hard plates covering their jaws.

2. Take students outdoors to observe animals that have adaptations for an aquatic habitat.

Time:

Days 1-3 60 min

Skills:

Critical thinking
Writing
Observing
Recording
Drawing
Designing
Interpreting
Predicting
Forecasting
Drawing conclusions

Vocabulary:

adaptations,
habitat

Materials Needed:

· Access to reference books/internet
· paper
· markers, crayons, colored pencils
· *Minnesota Environment™ Weatherguide Calendar*
· *Underwater Animals* by Helen Cooney

3. In small groups, have students list different types of adaptations that animals can have.

(examples: body parts: webbed feet, sharp claws, whiskers, sharp teeth, large beaks, wings, hooves; body covering; hair, fur, feathers, moist, slick skin, tough dry skin, coverings that allow animals to squeeze into small spaces (cockroaches).

4. Show students the *Minnesota Weatherguide Environment™ Calendar* and have students look through each month of the year. Have them specifically look at the picture for each month, observing the plants, animals and environment of each picture. Then have them choose a plant or animal and investigate it's adaptations for living in an aquatic environment.

5. Tell the students that they are artists/photographers and have been commissioned by the Freshwater Society to create a new picture for one of the months for next year's calendar.

6. Give them the list of requirements. Each picture must include; a habitat that includes water in some form and an animal that will survive in that habitat. Each picture should include the animal's name and habitat adaptations.

7. The students will have time to do research on an animal, and complete the picture or make the photograph.

Wrap Up & Assessment

1. Each student will present his/her picture.

Questions for Discussion

· What other animals could live in the habitat that was pictured? Answers will vary.

· What other adaptations would be helpful for the animal to have? Answers will vary.

Extensions

· Include other information from the *Minnesota Weatherguide Environment™ Calendar* in the picture; or use as side notes alongside the picture page.

· Create a PowerPoint presentation on the selected animal; include facts about the animal and photos of that animal in other habitats and identify the adaptations.(***fulfills the ELA Standard listed above)

Resources

Arnosky, J. *I See Animals Hiding*

Clarke, G. *Fake Out! Animals That Play Tricks*

Cooney, H. *Underwater Animals*

Dewey, J. *Can You Find Me? A Book About Animal Camouflage*

Otto, C. *What Color is Camouflage?*

Minnesota Weatherguide Environment™ Calendar

*Minnesota Academic Standards

Standards Met

Subject	Code	Standard	Benchmark
ELA (fulfilled in extension activity only)	5.6.2.2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.	Write informative/explanatory texts to examine a topic and convey information clearly **a.** Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting, illustrations, multimedia when useful to aid in comprehension**.**
ELA (fulfilled in extension activity only)	5.6.7.7	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic
Science	5.4.1.1.1	Living things are diverse with many different characteristics that enable them to grow, reproduce and survive	Describe how plant and animal structures and their functions provide an advantage for survival in a given natural system.

Created by: Marja Steinberg, ISD #719
Revised by: C. Rieckenberg, ISD #719