Water

Grades 1-4 Subjects: Science & Art (ELA Extension idea) Updated in 2024

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.

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.

Activity

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.

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.

Time:

Days 1-3: 60 min. each day

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

5. Tell the students that they are artists/photographers and have been commissioned by Freshwater 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 presentation using a presentation/slide program of choice; on the selected animal; include facts about the animal and photos of that animal in other habitats and identify the adaptations.(fulfills ELA Standard)

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
online: https://jeffersfoundation.org/programs/calendar-in-the-classroom/

Minnesota Academic Standards

3-D Science Standards
Science Practices:
3. Analyzing and Interpreting Data
7. Engaging in Argument from Evidence
8. Obtaining, Evaluating and Communicating Information

Crosscutting Concepts:
1. Patterns
2. Cause and Effect: Mechanism and Explanation
6. Structure and Function

Disciplinary Core Ideas:
LS1: From Molecules to Organisms: Structures and processes
1st Grade: Animals use their external parts to help them survive, grow, and meet their needs

3rd Grade: Animals have internal and external structures that function to support survival

3rd Grade: Organisms have unique and diverse life cycles

LS2: Ecosystems: Interactions, energy, and dynamics

3rd Grade: Strategies animals use to survive

LS3: Heredity: Inheritance and variation of traits

4th Grade: Traits can be influenced by different environments

LS4: Biological Evolution: Unity and diversity

2nd Grade: Some organisms survive better in particular habitats

Art Standards

Grade	Strand	Anchor Standard	Benchmarks
1	Create	Generate and develop original artistic ideas	2. Use observation and investigation in preparation for making a work of art.
2	Create	Create original artistic work	1. Create art that represents natural and constructed environments. For example: Landscapes versus architecture.
3	Create	Create original artistic work	1. Create visual representations of places or systems that are part of everyday life using artistic foundations.
4	Create	Create original artistic work	1. Create art that is representational and non-representational using artistic foundations. For example: Naturalism and abstraction.

Standards met by additional lesson idea in the Extensions:

ELA Standards and Benchmarks

Grade	Benchmark with Anchor Standard/Code
1	Create written, oral and digital content that communicates knowledge and ideas in a variety of presentation styles. (LSVEI 3: 1.3.3.1)
2	Create written, oral and digital content that communicates knowledge and ideas, including relevant facts and descriptive details, in a variety of presentation styles. (LSVEI 3: 2.3.3.1)
3	Create written, oral and digital content that communicates knowledge and ideas, including relevant facts and descriptive details, in a variety of presentation styles. (LSVEI 3: 3.3.3.1)
4	Create written, oral and digital content that communicates knowledge and ideas in an organized manner, including relevant and credible facts and descriptive details to support central ideas or themes, in a variety of presentation styles. (LSVEI 3: 4.3.3.1)