Animal Adaptations

South Carolina Aquarium

Students will discover animal adaptations as they travel around the Aquarium from the Mountains to the Sea.

Objectives

- Students will be able to define the term adaptation.
- Students will be able to identify animal adaptations (physical and behavioral).
- Students will be able to label an animal as a vertebrate or invertebrate.

South Carolina Science Standards
4.L.5A.1, 4.L.5B.1, 4.L.5B.3

Materials in Bin

- Copy of 'Animal Adaptations' activity
- Aquarium map (with activity exhibits starred)
- 5 Adaptations Worksheets
- 5 dry erase markers
- Eraser
- Adaptations Workshop Answer Key (for teacher only)
- Fleece jacket
- Nose with whiskers
- Goggles
- Webbed glove
- Suction cup
- Straw
- Small beach ball

Background
Adaptations are the body parts and behaviors an organism has to survive in its environment. Physical adaptations are body parts and behavioral adaptations are the behaviors. Plants and animals must survive in their environment by finding food/nutrients and water as well as staying away from predators. Some adaptations are unique to one type of organism (blue blood of horseshoe crabs) while others are seen in many organisms (webbed feet of ducks, turtles, frogs,…).

Aquarium Animal Adaptations

River Otter – fleece jacket
River otters have very thick fur. They have over 300,000 hairs per square inch which is more hair in one small area than we, humans, have on our entire bodies. Their thick fur keeps them warm in cold waters, just like a coat keeps us warm when it's cold outside.

Channel Catfish – nose with whiskers
Catfish have barbels on their "chin" that look like whiskers. They use these for feeling around for food and for moving around in murky water.

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American Alligator – goggles
Alligators have 3 eye lids on each eye. The top and bottom eye lids are like ours and open and close to allow the alligator to see or sleep. The third set is clearer and comes from the inside toward the outside. This nictitating membrane, or third eye lid is used underwater so the alligator can see, but protect the eye from particles in the water.

Diamondback Terrapin – webbed glove
Diamondback terrapins are aquatic turtles that only live in brackish water, a mix of fresh and salt water. They have webbed feet to help them swim and claws to help them get out of water to lay in the sun.

Sea Star/Sea Urchin – suction cup
Sea stars and sea urchins are both animals with many tube feet. The tube feet act like tiny suction cups for gripping or sticking on to rocks and corals to help them move around.

Sea Horse/Pipefish – straw
Sea horses and pipefish are very closely related and this can be seen by their small, straw-like mouths. They use their tiny mouths to suck up plankton, tiny plants and animals floating around in the ocean.

Porcupine Fish – small beach ball
The porcupine fish is a large type of spiny puffer fish. They can swallow water (or air) to puff up their bodies, just like a beach ball. This makes it hard for predators to eat them.

Procedures
Pick up exhibit activity bin from Information Desk. Tour the Aquarium and when you get each activity exhibit, stop and have your students complete a step in the activity.

1) Review the following with your students at your first stop.
    a. What is an adaptations?
    b. What is the difference between a physical adaptation and a behavioral adaptation?
2) Give each pair of students an Adaptations Worksheet and a dry erase marker.
3) Pick an item from the bin that matches the exhibit you are in.
    a. Ask, “What could this item represent on an animal? How could it help them survive?”
4) Have the students look around the exhibit to locate an animal the item could represent as an adaptation.
5) When they think they have correctly found the animal, they should fill out the worksheet by listing the animal and describing the adaptation (how it helps the animal to survive).
6) Have the students share their thoughts. Ask them, “Is that a physical adaptation or a behavioral adaptation?” Hint: the body part is the physical adaptation and how they use the body part (the action word) is the behavioral adaptation.
7) Repeat step #3-6 for each stop on your Aquarium tour.
8) At the end of the tour, ask students what adaptation they wish they had and why.
9) When done, wipe off all answers with eraser and return everything to the a bin and drop off at Information Desk.