

Students will discover animal adaptations as they travel around the Aquarium.

## 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 circled)
- 5 adaptations worksheets
- 5 dry erase markers
- Eraser
- Adaptations workshop answer key (for teacher only)
- Coat
- Whisker glasses
- Goggles
- Glove
- Suction cup
- Straw
- Ball



## Background

Adaptations are body parts and behaviors an organism uses to survive in its environment. Physical adaptations are body parts and behavioral adaptations are behaviors. Plants and animals must survive in their environment by avoiding predators and by finding food, nutrients and water. Some adaptations are unique to one type of organism, like the blue blood of horseshoe crabs, while others are seen in many organisms, like the webbed feet of ducks, turtles and frogs.

## Aquarium Animal Adaptations

### River Otter

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

Catfish have barbels on their "chin" that look like whiskers. They use these for feeling around for food and moving through murky water.

## American Alligator

Alligators have 3 eyelids on each eye. The top and bottom eyelids are like ours. They open and close to allow the alligator to see or sleep. The third set is transparent and comes from the inside of the eye toward the outside. This nictitating membrane, or third eyelid, protects the alligator's eye from particles in the water while allowing the alligator to see.

## Diamondback Terrapin

Diamondback terrapins are aquatic turtles that only live in brackish water, a mix of fresh and saltwater. They have webbed feet for swimming and claws to help pull themselves out of the water.

## Sea Star/Sea Urchin

Sea stars and sea urchins have appendages called tube feet. The tube feet act like tiny suction cups by allowing them to stick to rocks and coral.

## Sea Horse/Pipefish

Sea horses and pipefish are 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

The porcupine fish is a large type of spiny pufferfish. 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 activity bin from Information Desk. As you tour the Aquarium, stop at each exhibit and instruct your students to complete a step in the activity.*

- 1) Review the following with your students at your first stop:
  - a. What is an adaptation?
  - 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 finished, wipe off all answers with the eraser, return all items to bin and drop bin off at Information Desk.