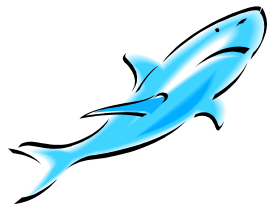


Curriculum Guide Pre- and Post-Activities



Grades
9-12

Introduction

Welcome to the Florida Aquarium! This guide is designed to help you utilize your time efficiently and get the most out of your field trip experience. The following pages will provide you with suggestions for pre- and post-visit activities, in addition to things you can do while at The Florida Aquarium.

Use The Florida Aquarium to introduce students to “The Florida Water Story.” Trace a drop of rain beginning in the Wetlands Gallery as it travels from freshwater streams and rivers, to estuaries and beaches, and finally out to the coral reefs, and the open ocean. With The Florida Aquarium as your guide, explore these individual habitats and learn about the many different plants and animals that live there.

Aquarium Classes: Supplement your visit with one of our school programs!

- Inside Story: Behind the Scenes Tour
- Reef Survey 101
- Sleep with the Fishes
- Exploring the Bay

Traveling Programs: Bring The Florida Aquarium to you!

- Sharks!
- Wild Jobs: Working with Animals

Vocabulary to Consider

- **Adaptation** – Adjustment over time to environmental conditions.
- **Aquifer** – Underground rocks or soil that hold and release water.
- **Camouflage** – behavior and/or markings designed to disguise or hide.
- **Density** – How close water molecules are to each other.
- **Estuary** – a semi-enclosed body of water in which freshwater from rivers and streams mix with saltwater from the ocean.
- **Food Web** – A way of describing the complex relationships between organisms and what they eat.
- **Invasive Species** – A non-native species, often with no natural predators, that disrupts the natural ecosystem, causing potentially significant ecological and economic impacts.
- **Plankton** – Organisms that are carried around by ocean currents, rather than swimming to determine their course; consists of phytoplankton (plant plankton) and zooplankton (animal plankton).
- **Salinity** – A measure of the amount of salt in the water.

- **Watershed** – A land area that contributes runoff, or surface water flow, to a water body. The water resources within a watershed are affected primarily by what happens on the land within the watershed.

The key to getting the most out of your visit to The Florida Aquarium is to come prepared. By discussing relevant topics and incorporating fun and interesting activities into your classroom, students will better appreciate what they see on their field trip.

Pre-Visit Suggestions

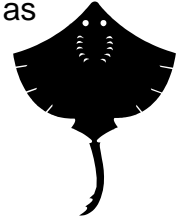
- How can you conserve water? Discuss the concept of a watershed, and create your own. (1) Take a piece of paper, fold in half, and open (2) Crumple paper (3) Gently open paper (4) Using water based markers, mark high points with one color and low points with another color (mountain tops and valleys) (5) After all high and low points are marked, gently spray with water using a water spray bottle. The watershed is created when the colors run to the larger body of water (the first crease that was made in the paper when it was folded in half).
- On a map, have students locate rivers, streams, and other bodies of water that make up your watershed. Have them list ways in which the watershed might be affected by human uses.



- Help students to better understand the importance of classification. Give each student, or group of students, a variety of seashells. Using a taxonomic key, have students locate the scientific names of the various shells.
- Make a collage from magazine cut-outs that depict products, food, or industry which comes from the ocean.
- Carrageenans are compounds extracted from red algae that are used to stabilize and gel foods and pharmaceuticals. Brown algae contain alginates that make foods thicker and creamier. They are used to prevent ice crystals from forming in ice cream. Alginates and carrageenans are often used in puddings, milkshakes, and ice cream. The commonly used color additive beta-carotene often comes from green algae as well as many vegetables, including carrots. Examine the foods in your own kitchen and make a list of all the items containing "alginate" or "carrageenan" on the labels.
- Learn about invasive species. Have students choose an invasive plant or animal and do some research. Find out where a particular species



- As you move through the exhibits, starting in the Wetlands, notice as the water changes from fresh water to brackish water to salt water. Do you see any overlap in plants or animals? Think about how some species are adapted to live in multiple environments. What might be some benefits to this?



Now is your chance to build on the concepts discussed before your visit to The Florida Aquarium. Take this opportunity to further explore the many different plants, animals and habitats you discovered on your field trip.

Back in the Classroom

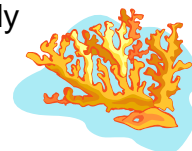
- You've had a chance to observe our sandy beach, but how much do you really know about the sand? Look closely at a bag of sand using a magnifier. List the colors you see, and draw a picture of some of the sand grains (draw them BIG). Gently rub a magnet on the outside of the bag of sand. Are any of the grains attracted to the magnet? If so, what color are the magnetic sand grains? Are all the grains the same size? Same color? What do you think your sand is comprised of? How did it get to the beach? Where do you think it was collected?



- Many marine plants and animals have medical uses. Algae, horseshoe crabs, coral, and sharks are just a few of the subjects scientists are studying. What benefit may there be to studying these animals? Can you think of any other plants or animals that are important to the medical field?



- Divide the class into constituencies and have them debate a particular subject from their constituencies' point of view (whether they agree with it or not). For example, make up an endangered species. Generations of native people have been hunting it for food, conservationists want to protect it, government wants to drill for oil in its habitat, etc. Manatees: conservationists want to protect them, fishermen want to be able to fish in areas where they are found, boaters do not want restrictions placed on where they can boat, scientists want to be able to study them freely, etc.
- All of the coral you saw in the *Coral Reef Gallery* was actually man-made. Discuss why The Florida Aquarium does not use live coral in its large exhibit. What makes coral so special that we need to protect it?





- After visiting The Florida Aquarium your students should have a good overview and appreciation of Florida native wildlife. As a class, help prevent invasive species from spreading by volunteering to remove Brazilian pepper. Organizations such as The Tampa Bay Estuary Program and Tampa BayWatch are good resources to consult for this project.