SCHOOL MARINE SCIENCE GROUPS

at the Tybee Island Marine Science Center 2011

We offer a unique outdoor learning experience for students of all ages!

Choose from the Classroom, Field, and Coastal Gallery modules to "build-a-program" with us to fill in a two-hour time slot. A really popular combination is the Coastal Gallery Tour, Beach Ecology Walk, and either Sand Sifting or Seining.

Our programs correlate to the Georgia Performance Standards (GPS), which are aligned with the National Research Council's National Science Education Standards.

Programs are offered year-round, rain or shine, on beautiful Tybee Island.

Coastal Gallery Tour

Educators lead students through a tour of the Coastal Gallery which features species native to the Georgia coast, a few invaders, and exotics from other oceans. The Gallery's live animal collection changes throughout the seasons and includes baby 'gators, lionfish, fresh and brackish water turtles, batfish, stingrays, puffers, and more. The Gallery also features shark, whale, and sea turtle exhibits. Students interact with live marine invertebrates like hermit crabs, snails, and sand dollars in the open touch pool. **All ages** (1/2 hour)

Classroom Modules

Dock Lab

Students investigate live animals that reside underneath a floating dock. Invertebrates are identified using a Dock Lab Guide, and the importance of estuaries is discussed. To improve observation skills, the class uses a flexible camera to get a "close up" look of the organisms as they are displayed–larger than life–on a large-screen television. Classification of fouling community organisms is included. Specimens are collected at a local dock by educators prior to the class. **Kindergarten and up** (1/2 hour)

Squid Dissection

An amazing video clip introduces students to key external features and the locomotion of squid. Students are paired up to perform a guided dissection of a squid and learn about the anatomy, adaptations, and behavior of these complex creatures. We'll discuss invertebrates versus vertebrates and why scientific classification is important. Students will better understand the diversity of living organisms through the richly weird world of this magnificent mollusk. **Third grade and up** (1 hour)

Gyotaku Fish Printing

The Japanese art of fish printing, Gyotaku, was initially developed as a method to record size and species of a fisherman's catch. Through the years it has become an international art form. By pressing painted fish and other sea life replicas onto t-shirts, students will create their own one-of-a-kind work of art. Students examine anatomy and function of fish – learning how they breathe, swim, and survive. Participants must bring their own tee-shirt. **Third grade and up** (1 hour)

Let's Meet A Fish

Through various interactive activities, young students learn about the anatomy, adaptations, and behavior of fish. Entertaining puppets introduce them to the basic concepts. Then, students help build a fun fish and even learn how to school! Lastly, using examples of camouflage introduced in the lesson, students have the opportunity to create their own fish drawing. **Pre-K to Second grade** (1/2 hour)

Check us out at TybeeMarineScience.org

or call toll-free 866-557-9172 • Open Daily 10 to 5

Have a blast on Tybee Island, Georgia's Peach of a Beach.

Dolphin Discovery

Our Floating Classroom

Students learn about the Atlantic Bottlenose Dolphin while exploring Georgia's tidal creeks from a 45' pontoon boat. We'll discuss physical and behavioral characteristics and learn how dolphins communicate, navigate and organize.

You'll also learn about other animals we observe along the trip and explore those under the water by pulling a trawl net and bringing it aboard to examine your finds (usually shrimp, squid, jellies, puffers, crabs).

Activities vary based on the age of group. Our coastal dolphin population is large and though we usually see them on our trips, we can't guarantee a sighting. The boat is accessible and has a restroom. You can bring snacks or lunch aboard, but no feeding the dolphins. Basic program fee, plus $10 extra per participant. **All ages** (1.5 hours)

Field Modules

Beach Ecology Walk

Students participate in a guided beach walk to explore the dynamics of Georgia's barrier islands. They learn about the ever-changing intertidal zone, the origin of sand, the forces behind the tides and waves, sand dune formation and importance, and the connections among the island's habitats. The effects of pollution and development on the ocean and shoreline will be examined. Students also identify the animals and plants found while exploring, which may include sand dollars, snails, barnacles, crabs, and pelicans. They'll discover how their remarkable adaptations allow them to survive on and around the barrier islands. The amazing life cycle of the summer nesting Loggerhead Sea Turtle is also discussed. Participants may collect unoccupied shells during the Beach Ecology Walk. **All ages** (1/2 or 1 hour)

Marsh Ecology Walk

Students hike into one of the most productive ecosystems in the world–the salt marsh. Here they will catch scampering fiddler crabs, examine salty grasses, observe soaring marsh birds, and hold periwinkle snails. We'll keep an eye out for the Diamondback Terrapin, a protected species and only turtle that prefers to live in the marsh and estuary. Students learn how the inhabitants have adapted to this unique environment full of marvelous mud and tidal flow. Find out how this ecosystem acts as a nursery, filter, and protector. Be prepared for feet to get wet and/or muddy. Groups must have transportation (seven minute drive) to the marsh from the Science Center. **All ages** (1 hour)

Sand Sifting

Students discover the marine life that resides below the sandy surface of the shoreline using strainers in ankle-deep water to sift the wet sand. We'll identify the invertebrates such as mole crabs, snails, sand dollars, coquina clams, and worms–and discuss their adaptations. Students will learn about the intertidal food web and the coastal predators of the sand-dwelling animals. If time permits, we'll use a flexible camera to get a "close-up" look at some of the organisms we've found on a large-screen television. **All ages** (1/2 hour)

Seining

Students will pull a 10-foot seine net through the surf to catch and observe the diverse marine life in our waters. Organisms that may be caught in the seine net include anchovy, pompano, kingfish, jellyfish, and crabs. Students handle the harmless animals and discuss the classification and adaptations of the species. Participants may get wet to the waist. To schedule this activity, each group must have two willing adults to help pull the net if needed. Educators determine if weather and wave action are suitable for seining that day. **Third grade and up** (1/2 hour)

Oceanography

Students learn about the four basic aspects of ocean study - physical, chemical, geological, and biological. A variety of oceanographic instruments and tools are used to examine such factors as tides, temperature, depth, visibility, salinity, sediment, and plankton. Students work together to collect, analyze, and discuss data. They gain a better understanding of the importance of studying the sea by experiencing firsthand the multiple disciplines of oceanography. **Fifth grade and up** (1 hour)