



MarineLab

Marine science education
in the Florida Keys
305.451.1139
www.marinelab.org



Core Curriculum

Seagrass Ecology Program

This program has a classroom component prior to a field trip to snorkel the seagrass habitat of Florida Bay. Students will understand the role of seagrasses in the subtropical marine ecosystem, identification of common species, and threats to the habitat.

Advanced/Citizen Science Option: This advanced version of our seagrass ecology program involves training students on seagrass survey techniques. The data students collect will be analyzed and entered into MarineLab's database. This program is best suited for grade 9 or above.

Mangrove Ecology Program

The mangrove ecology program allows MarineLab instructors and students to truly use the outdoors as a classroom. Students will learn about the importance of mangroves along with their adaptations during a discussion on the boat on the way to the mangrove snorkel site. Students will snorkel and get a hands on lesson with marine invertebrates collected by the instructor.

Advanced Option: The advanced version of the mangrove ecology program incorporates a sediment analysis lab done aboard the vessel. Students will use a core to collect and analyze mangrove sediment.

Coral Reef Ecology Program

Students discuss coral reef ecology with a MarineLab instructor before boarding the boats to snorkel the coral reefs off of Key Largo. Students will snorkel two sites per boat trip. MarineLab staff will be in the water and on the boat to lifeguard, point out marine life, and discuss observations.

Advanced/Citizen Science Option: The advanced version of the coral reef ecology program trains students to collect coral bleaching and disease data for Mote Marine Laboratory. Data is discussed and submitted.

*** We also have a Coral Reef Ecology II program for students that have already participated in the Coral Reef Ecology program (whether in a previous year or a previous day of their trip). CRE II expands on the concepts discussed during the core program and provides students with a list of behaviors, relationships, interactions, etc. to look for during their snorkel trip. ***



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Fish Identification Program

Students will learn the best field marks to use to identify a fish, behavioral characteristics of specific fish families, and learn how to identify fish species that we commonly see on Key Largo's reefs. Level 1(grades 5-8) and Level 2 (grades 9-12) curriculum used accordingly (same concepts, varied classroom teaching methodology). The students are then taken out into the water to put what they learned into practice!

Advanced/Citizen Science Option #1: The first option expands on the original fish ID program by training students in a roving diver data collection technique used by Reef Environmental Education Foundation Fish ID. Students will record and all fish they are able to properly ID. This option is available for Grade 7 and above.

Advanced/Citizen Science Option #2: For this particular program, in addition to the basic fish ID class, students will be taught how to ID four species of parrotfish and how to collect appropriate feeding data. Protocols for data collection and the reasoning behind the study will be discussed. Data is submitted to a professor at University of California. This program is better suited for more advanced learners and snorkelers – we recommend grade 9 or above.

Invertebrate Diversity Lab

Students will briefly be introduced to the concept of diversity and the correlation of stable diversity with a healthy, stable habitat. Students will identify invertebrates they find on live rock collected from Largo Sound, the body of water adjacent to MarineLab's property. The lab concludes by staff projecting a sample of every species found for all to see followed by a discussion on the corresponding environmental health of Largo Sound.

Advanced Option: This version of the lab takes the data collection a step further and has students determine biodiversity using Simpson's Diversity Index. The purpose of diversity indexing is discussed, data collected is analyzed and compared to years past, and data is submitted into MarineLab's in house database.

Zooplankton Lab

Students will be introduced to plankton, with a focus on zooplankton, and the overall role of plankton in the ecosystem. Students will use stereoscopes to observe and identify zooplankton collected from Largo Sound.

Advanced Option: For advanced students who are staying for a mutli-day program, the phytoplankton monitoring lab incorporates zooplankton identification along with phytoplankton. The importance of monitoring phytoplankton along with the cause and effects of harmful algal blooms are discussed before students begin their own analysis. Students will use dissecting scopes with screens to allow for group discussions. Data will be analyzed and discussed.



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