



INVERTEBRATE EXPLORATIONS

Two lab activities followed by a field excursion on our US Coast Guard Inspected Passenger Vessel to tour the mangrove community in Florida Bay! Instructors will collect marine organisms and bring back to the boat for discussion, and students will test water quality parameters on land and in the field. No snorkeling is included in this program, which also makes it ideal for the cooler months.

COST: \$110 per student, minimum of 9 students, booked in groups of 9. One chaperone per 9 students is required, no charge. FUNDING AVAILABLE FOR TITLE I SCHOOLS.

TIME	ACTIVITY
8:30 AM	Arrive, orientation
9 AM – 10 AM	LAB: Water Quality Abiotic water parameters determine the health and the community of any fresh or saltwater system. Primary water quality parameters will be discussed as well as the best tools and methods to measure each parameter. Students will have hands on opportunity to use all of the tools in preparation for water quality field collection and analysis.
10:15 AM – 11:15 AM	DISCOVERY: Invertebrate Diversity Students will briefly be introduced to the concept of diversity and how stable diversity is generally indicative of a stable, healthy habitat before getting their hands wet. Students will explore live rock collected from Largo Sound, identifying each invertebrate they find. The lab concludes by staff projecting a sample of every species found for all to see and discuss.
11:15 – 11:45 AM	Bag lunch from home
12:00 – 2:15 PM	Boat Tour of Florida Bay All aboard! Students will be taken on a guided boat tour of Florida Bay. They'll be given the opportunity to conduct water quality testing in Florida Bay, learn about mangroves and their importance both to humans and marine life, and get to see mangrove invertebrates up close that one of our instructors has collected for them.
2:30 PM	Depart

MarineLab One Day Programs - Invertebrate Explorations Continued

Next Generation Sunshine State Standards Addressed

SC.5.L.14.2: Compare and contrast the function of organs and other physical structures of plants and animals, including humans, for example: some animals have skeletons for support -- some with internal skeletons others with exoskeletons -- while some plants have stems for support.

SC.5.L.17.1: Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.

SC.5.L.15.1: Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.

SC.5.N.1.3: Recognize and explain the need for repeated experimental trials.

SC.6.L.15.1: Analyze and describe how and why organisms are classified according to shared characteristics with emphasis on the Linnaean system combined with the concept of Domains.

SC.6.N.1.2: Explain why scientific investigations should be replicable.

SC.7.L.17.2: Compare and contrast the relationships among organisms such as mutualism, predation, parasitism, competition, and commensalism.

SC.7.N.1.2: Differentiate replication (by others) from repetition (multiple trials).

SC.8.N.1.2: Design and conduct a study using repeated trials and replication.

SC.912.L.14.7 Relate the structure of each of the major plant organs and tissues to physiological processes.

SC.912.L.17.2: Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature.

SC.912.L.17.4: Describe changes in ecosystems resulting from seasonal variations, climate change and succession.

SC.912.L.17.5: Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity.

SC.912.L.17.6: Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.

SC.912.L.17.8: Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.

SC.912.L.17.18: Describe how human population size and resource use relate to environmental quality.