

Tour:

Snorkel through Science

Destination:

Key Largo OR Marathon Key, plus Miami, Florida

Specialization:

Marine Biology & Ecology

Itinerary:

6-days / 5-nights in destination

SNORKEL THRU SCIENCE - Sample Itinerary			
Day	Morning	Afternoon	Evening
1	Travel to Miami; transfer to Marathon Key; boat to Pigeon Key	Orientation & Swim Test	Marine Habitats of the Florida Keys & Reef Fish Identification
2	Sombrero Reef Catamaran Reef Snorkel	Invertebrate Biodiversity + Island Snorkel	Shark Biology, Dissection and Feeding
3	Conservation 'Town Meeting'	Marine Biology Field Snorkel	Squid Anatomy and Dissection
4	Plankton Lab	Marine Adaptations	Astronomy & Plankton Tow
5	Coral Reef Ecology	Dolphins Plus Educational Program	Transfer to Miami; Evening in Miami
6	Everglades Safari Park or Jungle Island Park	Departure	



Specialists in STEM Student Travel

As with all sample itineraries, please be advised that this is an 'example' of a schedule and that the activities and hotels shown may be variable dependent upon dates, weather, special requests and other factors. Itineraries will be confirmed prior to travel.

We are pleased to partner with 2 amazing marine operations to bring you an unforgettable tour to the Florida Keys in exploration of Marine Biology and Ecology! Located in either Key Largo or Marathon Key, and surrounded by the protected marine environments of the Florida Keys National Marine Sanctuary, Everglades National Park, and the John Pennekamp Coral Reef State Park, our program offers easy access to seagrass, mangroves, and the only bank coral reef off the continental United States. Through hands on investigation and snorkeling, preceded by scientist-led discussions focusing on the ecology and biology of these unique communities, students and staff alike learn while having fun and adventure.

Our program is based on a combination of introductory discussions and hands-on activities. Each day is a new adventure! Snorkeling in the varied marine communities plus interactive discussions with experienced marine naturalists reinforce science concepts introduced in students' home classrooms. Groups spend several days learning about these marine habitats which allow for experience of ecological concepts and observation of marine creatures in their natural habitats.

The daily schedule is varied and can be based on a specified focus or taken as a general itinerary filled with a variety of components to introduce your students to this amazing environment. Most time, activities consist of labs and lectures in the evening and snorkeling field trips by day. Levels of instruction are variable dependent upon the age of the group. Core curriculum consists of seagrass ecology, mangrove ecology and coral reef ecology however, schools may also add diverse curriculum such as hardbottom and coralline algae ecology and may even include Everglade hydrology. Evening discussions on coral reef ecology, field identification of reef fish, invertebrate diversity, astronomy and plankton are also part of our core curriculum.

Day 1

Dinner

Travel to Florida arriving at Miami International Airport in the late morning or early afternoon. After boarding your motorcoach, your school will be transferred to either Key Largo or Marathon Key, dependent upon your booking. Upon arrival, we can retire to our dorm rooms and get settled into our new home!



Housing is in on-site dorm facilities. Dorm accommodations consist of large rooms, containing 12 to 16 students if lodging in Key Largo, or in gender houses if lodging in Marathon. All dorms are air-conditioned.

Meals are served in-house. Limited vegetarian meals are available with advance notice, however, vegan, kosher or special diet meals are not. A typical day's meals would include: choice of eggs and bacon, biscuits, fruit, cold cereal for breakfast; tacos with salad sides for lunch; and lasagne, garlic bread, salad and dessert for supper. Peanut butter, jelly, and bread are always available!

Upon arrival, groups will have our Visions Welcome & Safety before a scheduled **Orientation Meeting** with the local staff to educate us on what our week will hold, the facilities, the rules to abide by and general information about our programming.

After our orientation, we'll get ready to start our snorkel program with a swim test.

Swim Test - Participants do not need to know how to snorkel, or even know how to swim prior to their visit. All students are carefully oriented to the water and the use of snorkeling equipment in every program. The

first thing program instructors implement with every student is a 'swim test.' This test demonstrates the student's comfort level in the water. There are no required time limits or strokes to swim the 100 feet required in the test. If a student appears uncomfortable at all, instructors pay special attention to that student while in the water. Non-swimming students are provided with extra buoyancy and extra supervision. Being an educational facility, our partners specialize in encouraging unsure swimmers, through patience and care, to become reasonably confident snorkelers. All staff members are experienced in instructing students in the water and hold Lifeguard certifications.

Gear Outfitting - After the swim test, students are provided with gear and shown the proper technique for fitting their snorkel gear. They are instructed to use the "HHH" snorkeling position: head, hind end, and heels at the water line to avoid touching coral. Orally inflatable snorkel vests are worn by participants. These vests provide extra buoyancy if desired by the individual and are brightly colored to aid in visual tracking. A wide variety of fins and masks are available to fit every snorkeler. In addition to gear and technique instruction, students are taught hand signals, use of the dive flag and snorkeling etiquette.



The buddy system is used among all participants. A novice or apprehensive snorkeler is usually paired with a more experienced buddy or with the instructor. Buddy pairs are instructed to stay within arms' length of each other and within 100 feet of the boats.



Initial Snorkel - After completing the swim test and getting outfitted with gear, we will embark upon an initial Snorkel. This allows for participants to get their bearings and test their equipment. All swimming and snorkeling is done under consistent watch of program instructors and lifeguards.

After our beginning Snorkel, we'll have dinner. Following dinner we'll have a classroom discussion to learn about The Habitat of the Florida Keys.

Classroom Program: Key Habitats – This introduction program allows students to understand the habitat in which they will be working over the following days. Detailed discussions give an overview of the entire Florida chain of Keys, the Florida Bay and the southern tip of the Florida Peninsula. Additional topics focus on hydrology and water flow with a focus on how the waters affect the natural marine habitats of the Florida Keys.

Following our classroom activity, we'll have our evening Laboratory Program focusing on Water Quality.

Laboratory Program: Water Quality Sampling Techniques - Students will collect samples of water from two simulated seas. They will use this water to test salinity, temperature, pH, dissolved oxygen, ammonia, and nitrite. The differences in the parameters from each sea will be discussed. If time allows, students will also learn to use a secchi disk to measure water clarity after retrieving water samples at depth in the lagoon. On each subsequent field trip to various sites around Key Largo, a team of students will test each of these parameters at the snorkel site. Data will be compiled at the lab.

Day 2

Breakfast, Lunch & Dinner

Your specific program will be based on your location and any specific objectives you wish to include. The following sample itinerary notes are based on our program offered through our Key Largo Lab.

Good morning! After breakfast, students will start with a discussion followed by a snorkeling field trip to discover Seagrass Ecology!



Classroom Program & Snorkel Field Trip: Seagrass Ecology

Seagrass beds are a commercially crucial habitat where spiny lobster, stone crabs, and baitfish abound. Students learn about the grass-bed as habitat, identifying characteristics of the three local species of seagrass, distinguishing characteristics of algae and grass, the role of seagrass, abiotic factors affecting seagrass distribution, and the threats to seagrass communities and Florida Bay.

Students will transfer back to the facility for lunch then embark upon their second field trip of the day.

Snorkel Field Trip: Mangrove Ecology - Mangroves are a biologically rich and environmentally crucial transition zone between land and sea. Students learn about the geology of the Keys, characteristics which mangroves share, distinguishing characteristics of local mangrove species, the roles of mangroves and as a habitat, abiotic factors controlling mangrove distribution, and the detritus-based food web.

After our afternoon snorkel trip, we'll have dinner followed by a classroom program and a laboratory program.

Classroom Program: Coral Reef Ecology - The coral reef tract, extensively developed off Key Largo, has been compared to the tropical rainforest, due to the high levels of biodiversity, the fragility and susceptibility to human impacts, and the importance commercially if properly conserved. In an introductory lecture, students learn about the reef habitat and its organisms, the abiotic limiting factors affecting coral reef growth and distribution, behavior and structural adaptations of reef organisms, the mutualism present on the reef, coral reproduction, and the importance of the mangrove and seagrass habitats to the reef ecosystem.



Laboratory Program: Invertebrate Diversity Lab - This lab is preceded by a discussion relating diversity to health and stability. Algae covered rocks are collected from the beach and brought into the lab, where students "shake" the rocks in seawater and collect the resident invertebrates. These invertebrates are identified and their taxonomy discussed.

Day 3

Breakfast, Lunch & Dinner

Good morning Florida Keys! Following breakfast, we'll head straight for the water!



Snorkel Field Trip: Coral Reef Ecology #1 – Following our previous in-depth classroom discussion on the Coral Reef, we will now embark on one of our three scheduled reef field trips in exploration of the only living coral reef in North America! During these three outings, students will snorkel various reefs in the Florida Keys National Marine Sanctuary.

After our reef expedition, we'll come in for lunch then in the afternoon, embark upon our second snorkel field trip of the day!

Snorkel Field Trip: Hardbottom Shoal Ecology – Students will enjoy this specialized field excursion as they learn about the progression of the shoal reef and the bottom communities spreading from shoreline to reef.

Following dinner, we'll enjoy another classroom session followed by a laboratory program.

Classroom Program: Reef Fish Identification – Students will enjoy a slide presentation and discussion which covers identifying reef fish by use of field marks: shape, habitat, behavior, pattern, and color. Students are also introduced to fish biology and taxonomy.

Laboratory Program: Sponge Spicule Identification – This identification lab program allows students to study sponge tissues and their spicules. By taking samples of the tissue, students dissolve the sponge allowing the remaining spicule (skeleton) to be researched for identification purposes. Students will study five types of sponge and learn to identify the independent type by determination of the shape of the spicule.

Day 4

Breakfast, Lunch & Dinner

Good morning Florida! Following breakfast, we'll depart for our first snorkel trip of the day!



Snorkel Field Trip: Rodriguez Key Zonation – Rodriguez Key is located directly off Key Largo and is important in the study of coralline algae. This area produces many young fish and invertebrates and allows for us to study the animals in a new and exciting habitat.

Following lunch, we'll head back to our boats for our second **Snorkel Field Trip to the Coral Reef** and study of Reef Ecology.

We'll enjoy dinner at our facility then in the evening, after wrapping up with a **Program Summary**, we'll enjoy an evening field trip.

Evening Field Trip: Astronomy / Plankton Tow - Students are taken on a night-time boat ride to just outside the harbor. There, away from the light pollution of the shore, important constellations are pointed out and students discuss the moon's effect on tides, the plane of the ecliptic, celestial navigation and other pertinent "sky" facts. On the way back into the harbor, plankton nets are deployed behind the boats. The collected sample is then placed in deep well slides, put in a projector, and the instructor leads the students in a discussion on holo- and mero-plankton and the taxonomic characteristics of the local planktonic fauna.

Day 5

Breakfast & Dinner (Lunch on Own)

Rise and shine Key Largo! Following breakfast, we'll embark on our last snorkel trip!



Classroom Program & Snorkel Field Trip: Advanced Coral Reef Ecology - Important concepts of coral reef ecology (including zooxanthellae and potential hazards) will be reviewed. This brief review will lead into an advanced discussion of coral reef ecology. Concepts to be emphasized include: morphology of coral reefs; the effect of sunlight availability (depth) on the shape of boulder corals; the impact of sunlight availability on the community composition; Keys geology, including the formation of Hawk's Channel and the banks; community interactions including competition and predation; the influence of water quality parameters on community composition; coral diseases, artificial reefs, and the impact of exotic invasive species. A last snorkeling field trip to representative reefs will follow the discussion.

After lunch, we'll gather our belongings, formally check-out of our dorms and finish our Key Largo programming with a visit to the Dolphins Plus Marine Research Lab!

Dolphins Plus Educational Program – Dolphins Plus is committed to the conservation and protection of marine mammals worldwide through education, research, experiential learning, and environmental awareness. The Dolphins Plus facility is located on a canal, adjacent to the Atlantic Ocean, thus creating natural seawater homes for their Atlantic bottlenose dolphins and California sea lions. This creates an enriching and stimulating environment for both marine mammals and guests.



Dolphins Plus welcomes educators and students to observe the dolphins and sea lions in a natural seawater setting. In our ½-day class, students will learn about dolphin behavior and be able to examine their form and function. As part of the educational program, schools will have access to observational areas as well as outdoor briefing huts, indoor classrooms, an outdoor touch tank aquarium display, and the use of educational tools (e.g. cetacean skull and hydrophone).

In addition to the educational program offered, schools will also have an opportunity to add on a specialized Dolphin Swim (additional costs apply).



Dolphins Plus Structured Dolphin Swims - are hands-on dolphin encounters, during which each individual will participate in a variety of trained behaviors (e.g. belly rubs, kisses, and dorsal tows) with the dolphins. The program is mediated by an experienced dolphin trainer however, all participants need to be able to swim, and feel comfortable in 10 - 15 feet of water wearing a flotation device.

The program, including training and the structured swim, is approximately 2-hours in length and begins with an educational briefing that lasts 45-minutes to 1-hour. The briefing will cover some information on bottlenose dolphins in general, specifics about the bottlenose dolphin at the facility, and the various dolphin interactions you can expect during your program. After the briefing the class will be split into smaller groups, each group on its own platform. Swimmers in each group will take turns entering the water and interacting hands-on with

the dolphins. Each swimmer will complete a series of behaviors, which may vary depending on the dolphins and trainer. Dolphin swims continue until each swimmer has completed all behaviors. This program does not involve any free swimming or snorkeling with the dolphins and all interactions are guided by a facility trainer. Sessions are photographed by a professional photographer and image collection are for sale as keepsakes (estimated cost \$100 USD for a disk of approximately 6 swimmers).

After our fantastic day, we'll board our motorcoach and head for Miami. After checking in to our new hotel, we'll have dinner and free time to explore the exciting city of Miami!

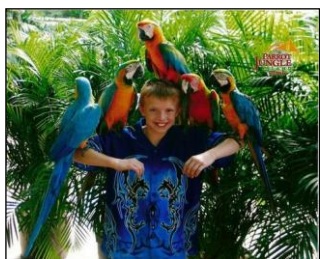
Day 6

Breakfast

Good morning Miami! This morning, after breakfast at the hotel, groups will have a morning of wild exploration. Of the two options below, groups will choose **one** of these two fantastic activities prior to travel.



Everglades Safari Park – Visit the Florida Everglades' premier and most complete airboat attraction! Everglades Safari Park has a modern fleet of airboats of all sizes, capable of accommodating everyone! Explore nature's 'River of Grass' on an Eco-Adventure tour. The experienced tour guides will describe the wonders of this unique ecosystem and the native and exotic wildlife that inhabit it. All tours include an airboat ride, alligator wildlife show, and a walking trail filled with crocodilian exhibits! www.evergladessafaripark.com



Jungle Island Park – Take off on a worldwide exploration at Jungle Island! Hop on over to Australia and see the Red Kangaroo exhibit; welcome the loveable Lemurs direct from Madagascar; marvel at the smartly dressed South African Penguins. No journey is complete without a visit to the Everglades Habitat, a true replica of the Florida Everglades! www.jungleisland.com

After our morning of exploration it will be time to head home. We'll travel back to the Miami Airport and start to say goodbye to Florida as we head off for our flight home; taking memories with us that will last forever!

Snorkel Through Science

Minimum Booking Numbers:	20 students
What's Included:	Round-trip flights with a scheduled carrier 5-nights' accommodation (4 in Key Largo; 1 in Miami) Breakfasts, lunches & dinners daily with the exception of lunch on Day 5 and travel days Transportation for programmed activities & airport transfers Full day & evening programming Use of all snorkel gear during your trip Dolphins Plus Educational Program Choice of Excursion to Everglades Safari Park <u>OR</u> Jungle Island Park Full Tour Ambassador Service 24-hour emergency cover
What's Not Included:	Fully comprehensive insurance (mandatory) Motorcoach transfers to/from home airport Lunch on Day 5 and any additional meals not noted Cost of inoculations or medication required for travel Dolphins Plus – 'Swim With Dolphins' Program Dolphins Plus – Professional Photography Additional Sightseeing / Entertainment Options Hotel incidental bills – meals, mini-bar items, recreation charges, purchases billed to room, etc Any gratuities – coach drivers, shuttle drivers, maid service, bellman service, Tour Ambassador, specialty park guides, etc.
Waivers:	Each participant will be required to submit a waiver with parental or guardian signature for the Marine programming as well as Dolphins Plus.

As always, our staff are always available to you to answer any questions you may have regarding programming. If we may serve you in any way, please do not hesitate to contact us.

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