



EDUCATING STUDENTS THROUGH TRAVEL



Tour: Snorkel thru Science
Destination: Key Largo & 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 Key Largo	Orientation & Swim Test	Classroom: Key Habitats / Lab: Water Quality
2	Classroom & Field: Seagrass Ecology	Field: Mangrove Ecology	Classroom: Coral Reef Ecology / Lab: Invertebrate Diversity
3	Field: Coral Reef Ecology #1	Field: Hardbottom Shoal Ecology	Classroom: Reef Fish ID / Lab: Sponge Spicule ID
4	Field: Rodriguez Key Zonation	Field: Coral Reef Ecology #2	Summary / Field: Astronomy & Plankton Tow
5	Field: Coral Reef Ecology #3	Dolphins Plus Educational Program	Transfer to Miami; Evening in Miami
6	Everglades Safari Park or Jungle Island Park	Departure	



Snorkel thru Science

We are pleased to partner with MarineLab to bring you an unforgettable tour to the Florida Keys in exploration of Marine Biology and Ecology! Located in Key Largo 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, MarineLab's site offers easy access to seagrass, mangroves, and the only bank coral reef off the continental United States! Through hands on investigation and snorkelling, preceded by biologist-led discussions focusing on the ecology and biology of these unique communities, students and staff alike learn while having fun and adventure.

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



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MarineLab is a combination of introductory discussions and hands on activities. Each day is a new adventure! Snorkelling in the varied marine communities plus interactive discussions with experienced marine biologists reinforce science concepts introduced in students' home classrooms. Student groups spend several days learning about these marine habitats of Key Largo through snorkelling which allows experience of ecological concepts and observation of marine creatures in their natural habitats. Over 20,000 students from the United States, South America, Canada, Korea, and Japan have participated in MarineLab programs since the facility opened in 1985.

The daily schedule consists of labs and lectures in the evening and snorkelling field trips by day. Levels of instruction are variable dependent upon the age of the student group. Core curriculum consists of seagrass ecology, mangrove ecology and coral reef ecology – the basis for every MarineLab program. Specialized Visions school programs also add diverse curriculum such as hardbottom and coralline algae ecology and may include Everglades hydrology. Evening discussions on coral reef ecology, field identification of reef fish, invertebrate diversity, astronomy and plankton are also part of our core curriculum.

Comments from teachers about the MarineLab Program:

"I discovered that the students learn much more from their Key Largo experience than I could ever teach them in a classroom. We were all impressed with the courtesy and patience which all of you extended, and also with the amount of knowledge you possess. We were also pleased to see that the instructors were involved with all aspects of the program: lecture, lab, and field trips."

Science Party Leader, Frankfort, KY.

"You have an excellent staff, both in the office and in the lab / field / lecture areas. Thanks for helping me relay my love for the marine environment to my students."

Science Party Leader, Tulsa, OK.

"One mother told me that her normally very quiet son spent 2 hours 'chattering' about his adventure when he got home. She said he described it as a 'life-changing experience'."

Science Party Leader, Florida

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 swiftly transferred to Key Largo, approximately 1.5 hours south of Miami. Upon arrival, we can retire to our dorm rooms and get settled into our new home!

As our program is executed in a full laboratory-style facility, all housing is in on-site dorm facilities. Dorm accommodations consist of large rooms, containing 12 to 16 students. Student rooms will be private and specific for your school; however students are encouraged to inter-mix socially with others from around the world to share cultural experiences. Smaller rooms are used for chaperone housing. All dorms are air-conditioned and carpeted, as are the meeting areas. Restrooms with showers are located on the first floor. In addition, there are several "dock showers" for a quick rinse between field trips during the day.



All meals – full-board – are served in-house. The cafeteria is air conditioned and can seat up to 80 people at one time. Meals are often staggered to accommodate all participants. The meals are institutional-type, nutritious and filling but not gourmet fare. 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 a scheduled **Orientation Meeting** with the MarineLab staff to educate us on what our week will hold, the facilities, the rules to abide by and general information about our program as a whole.

After our orientation, we'll head back to MarineLabs, have lunch, and get ready to start our snorkel program! The afternoon will start with a swim test, gear outfitting and a lagoon snorkel.

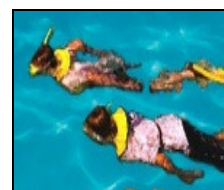


Swim Test - Participants do not need to know how to snorkel, or even know how to swim prior to their visit. All students are carefully oriented to the water and the use of snorkelling equipment in every program. The first thing program instructors implement with every student is a 'swim test.' This test 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, MarineLabs 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" snorkelling position: head, hind end, and heels at the water line to avoid touching coral. Orally inflatable snorkel vests are worn by all participants at all times in the water. These vests provide extra buoyancy if desired by the individual and are brightly coloured 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 snorkelling 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.

Lagoon Snorkel - After completing the swim test and getting outfitted with gear, we will embark upon a Lagoon Snorkel. This allows for participants to get their bearings and test their equipment. All swimming and snorkelling is done under consistent watch of program instructors and lifeguards at a 1:11 ratio inclusive of visiting students and teachers.



After our Lagoon 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

Good morning Key Largo! After breakfast, students will start with a discussion followed by a snorkelling 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 of 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, behaviour 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, behaviour, pattern, and colour. 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 of 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 harbour. 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 harbour, 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 snorkelling 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 from around the world to observe the dolphins and sea lions in

a natural seawater setting. Students will learn about dolphin and sea lion behaviour and also be able to examine their form and function. As part of the educational program, schools will have access to all observational areas, as well as shaded outdoor briefing huts, indoor classrooms with audio-visual technology (e.g. projector with laptop input), the growing Dolphins Plus library (both primary and secondary literature), an outdoor touch tank aquarium display, and the use of educational tools (e.g. cetacean skull and hydrophone). In addition, Dolphins Plus staff educators will teach a 1-hour lecture (selected from the curriculum list below) to your group:

Curriculum List Options:

- | | |
|--|--|
| Dolphin intelligence and communication | Marine mammal care |
| Dolphin reproduction and maternity | Introduction to marine mammals |
| Dolphin anatomy and physiology | Dolphin identification and personalities |
| Behavioural analysis/training game | Marine mammal conservation |
| Marine mammal strandings | Sea lion biology and behaviour |

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 behaviours (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 behaviours, which may vary depending on the dolphins and trainer. Dolphin swims continue until each swimmer has completed all behaviours. This program does not involve any free swimming or snorkelling 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 \$80 USD for a disk of approximately 6 swimmers).

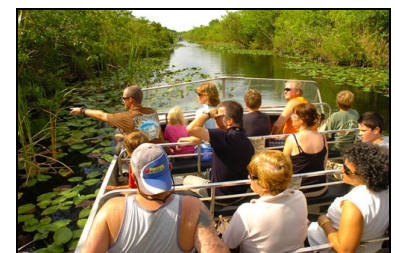
After our fantastic day, we'll board our motorcoach and head for Miami! After checking in to our new hotel, we'll have dinner and free time to explore the exciting city of Miami!

Day 6

Breakfast

Good morning Miami! This morning, after breakfast at the hotel, Visions groups will have the option of two fantastic activities. (Party Leaders will choose the specific excursion for their class 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



OR....



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!

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As always, our staff is 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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SNORKEL THROUGH SCIENCE

Minimum Booking Numbers: 18 students

What's Included: Round-trip flights with a scheduled carrier
5-nights' accommodation (4 in Ley 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 Program at MarineLabs
Use of all Snorkel Gear during your trip
Dolphins Plus – Educational Program
Choice of Excursion to Everglades Safari Park OR 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 both MarineLabs as well as Dolphins Plus.

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