



Tour:

KEY SCIENCE

Destination:

The Florida Keys

Specialization:

Marine Biology, Oceanography, Ecology

Itinerary:

7-days / 6-nights (tour can be shortened upon request)

Availability:

September through May

KEY SCIENCE - THE FLORIDA KEYS					
Day	Morning	Afternoon	Evening		
1	Travel to Miami, Florida; transfer to Homestead		Hotel Check-In	Welcome, Safety & Orientation	Local Dinner
2	Everglades Alligator Farm Airboat Ride, Show & Tour	Travel to Marathon Key; boat to Pigeon Key	<i>Check-in at Marine Science Center; dinner</i>		
3	<i>Pigeon Key Marine Foundation - Marine Biology / Ocean Sciences Programming</i>				
4	<i>Pigeon Key Marine Foundation - Marine Biology / Ocean Sciences Programming</i>				
5	<i>Pigeon Key Marine Foundation - Marine Biology Programming</i>	Turtle Hospital Master Class Tour	Transfer to Homestead; hotel check-in	Dinner	
6	Dolphin Master Class, Mammal Care Lab & Interaction	Coral Reef Restoration Foundation Master Class	Wild Bird Rehabilitation Center & Master Class	Dinner in Key Largo	
7	Tropical Fruit Sampling	Transfer to Miami; depart for home			



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.



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Day 1

Dinner on arrival, dependent upon flight times

Travel to Miami, Florida, arriving in the late afternoon or early evening. After boarding your motorcoach your group will be transferred to the Homestead area, approximately a 45-minute drive dependent upon traffic. On arrival, meet your personal Ambassador and have your **Welcome, Safety & Orientation Meeting**. That evening, we'll have dinner at our hotel or locally.



Sample Hotel – Hampton Inn & Suites Miami South / Homestead - The friendly team here will be delighted to serve you! Room amenities include rooms with 2 queen beds, desk and ergonomic chair, free WiFi, 32-inch LCD flat-screen HDTV, coffee maker, fluffy towels and a weekday newspaper. Hotel amenities include a fitness center and outdoor pool, on-property ATM, guest laundry, elevators, business center, boardroom, safety deposit boxes and on-site convenience & snack shop. Students generally sleep in rooms with 4 pupils sharing 2 queen beds; staff generally sleep in rooms with 2 staff sharing 2 queen beds. Please ask us about different configurations if needed.



Day 2

Breakfast & dinner included; lunch on own

After breakfast, we'll head out! First stop – let's learn everything about the south's greatest reptile – the American Alligator!



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**STEM
STUDY TOURS**
TRAVEL WITH PURPOSE

Everglades Alligator Farm – Discover the Everglades at South Florida’s oldest alligator farm. Near the entrance of Everglades National Park, the farm contains more than 2,000 alligators. A trip includes an airboat tour, alligator show, snake show, and an alligator feeding demonstration. On the airboat ride you can step out of our boats, and into the everglades. Airboats travel at high speeds, doing 360-degree spins through the Everglades sawgrass prairies.

After our trip into the Everglades, we’ll head south down to the Florida Keys. About midway, we’ll hit Marathon Key and get ready to be picked up by boat to be transferred to Pigeon Key.

Pigeon Key Foundation - Nestled in the heart of the Florida Keys, and accessible by ferry boat, The Pigeon Key Foundation operates a Marine Science Center on its private five-acre island. The center gravitates towards hands-on learning, turning the island and surrounding ecosystem into the classroom. Students are provided with a pivotal, one-of-a-kind experience that is invaluable to them the rest of their lives. Pigeon Key only hosts one group at a time, allowing for an individualized experience targeted at your specific curriculum requirements.



Swim Test - Participants do not need to know how to snorkel prior to their visit. The first thing 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. All staff members are experienced in instructing students in the water and hold Lifeguard certifications.



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 are done under constant watch of instructors.

Meals – All meals are taken at Pigeon Key starting with dinner on your night of arrival and ending with breakfast on your day of departure. Breakfasts include continental-style offerings with one hot option daily such as pancakes, French toast, biscuits and gravy, eggs and bacon, etc. Fresh fruit is always available. Lunches include sandwich meals, fruits and salads, with options rotating daily. Dinners include a starter, an entrée with sides and a dessert. Vegetarian options are available, and the food team is more than happy to work with special dietary needs. Coffee, water and assorted beverages are always available.

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. Levels of instruction are variable dependent upon the age of the student group. Core curriculum may include the elements listed on the next pages, however we are happy to customize your experience if you want to focus in on any specific educational topics.



Marine Habitats of the Florida Keys

“Marine Habitats of the Florida Keys” focuses on the four main habitats found around Pigeon Key and throughout the Florida Keys: Mangroves, Seagrass Beds, Shallow Hardbottom and Coral Reefs. Recommended as the first program for visiting education groups, this presentation explores the common environments students will be exposed to during their time on Pigeon Key. Throughout the program, students learn about each ecosystem, their benefits and threats, as well as how they can help. The program ends with a Scavenger Hunt around Pigeon Key where groups of students explore the island and search for objects they just learned about, for example a sacrificial leaf from a Red Mangrove tree.

Reef Fish Identification

Reef Fish Identification is a fun and interactive program that highlights numerous fish that students will see while snorkeling. Every group’s itinerary includes a trip to Sombrero Reef and Pigeon Key Staff believe that the more fish students can identify while visiting our local coral reef, will make for a more memorable trip! Students are introduced to fish behaviors, life strategies, and how those factors relate to morphological characteristics. After a brief presentation, students use their new knowledge to identify fish species on our 50-foot long marine ecosystems mural that depicts fish in their natural habitats. An optional “Reef Fish Challenge” can be included with this program where students are quizzed on the fish they have encountered.



Invertebrate Biodiversity

Our shoreline is the laboratory for this flagship program! After a brief classroom presentation that teaches students about the unique characteristics of the eight most common invertebrate phyla in our waters, students search the island for specimens. Whether they are found via snorkeling or tide-pooling, all the invertebrates are taken to our wet labs where everyone is encouraged to participate in a hands-on session to identify and gently examine each organism. After careful exploration, all specimens are returned to their original habitats. You will be amazed at the variety of life that your students find!

Shark Biology and Dissection

Discover the science behind the world’s most feared and misunderstood fish! This program is a student favorite, delving into the life history of sharks and their importance to the marine world. No fact is left unexplored—from the first shark in existence, to the most common shark eaten today—students learn the truth behind many of the common shark myths. After gaining an understanding of shark morphology, students dissect a shark reiterating the importance and function of each physical characteristic and participate in a shark feeding in our enclosed saltwater pool.



Pigeon Key History

The island of Pigeon Key is the single most historically significant location in the Florida Keys island chain. Since Henry Flagler’s original turn-of-the-century work camp, the island has seen some unbelievable uses and changes. In this program, students learn the fascinating story that brought this one-of-a-kind island treasure from a work camp to a vacation destination, to the Historical Foundation and Marine Science center that it is today. Students then explore Pigeon Key’s on-island museum during a scavenger hunt, which allows them to discover a piece of Pigeon Key History for themselves.



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Marine Adaptations

In this program, the staff introduce students to the plethora of adaptations that marine organisms have developed for survival. From obvious features like fins and gills, to the more obscure such as protective setae of a fireworm, students are immersed in this fascinating topic! After discussing everything from claws, camouflage, night vision, and bioluminescence, students are given the opportunity to design their own marine creature! An optional evening tide-pooling session can be added to hunt for creatures with nocturnal adaptations. Creatures found are brought back to our touch tanks for a more in-depth explanation and hands-on learning experience.



Plankton Lab

Plankton produce nearly 70% of the oxygen in the atmosphere (more than all land plants combined), yet students tend to know little about them. Plankton are fascinating; from microscopic algae, to larger-than-human-sized jellies, they comprise a dizzying array of animals and plants. After discussing what qualifies an organism as a plankton and how they are ecologically important, students collect plankton from the waters around Pigeon Key. Samples are brought back to the classroom to be examined under a microscope, where

students discover the mysteries of tiny plankton for themselves. Students typically find planktonic organisms, fish, and nudibranchs in their samples!

Squid Anatomy and Dissection

Squid belong to a family of unique creatures! This program examines the amazing adaptations squid exhibit in order to survive and how this relates to their morphology. By exploring the idea that different species live in different environments and therefore have different morphological characteristics, students realize how well adapted each creature is to its unique environment. Following the short presentation, students dissect a squid in order to better understand their anatomy and why each feature is important. For an added bonus, students are quizzed on squid anatomy.



Conservation Angling

If your students already enjoy fishing, or want to try it for the first time, this is an invaluable course for them. After a brief fishing tutorial, students head to the Pigeon Key dock with rod and reel in hand. Pigeon Key Staff members oversee all fishing to help bait hooks and catch and release caught fish. Notable species caught and released include grunts, barracuda, tarpon, snapper, grouper and a variety of shark species! Pigeon Key has been fortunate enough to also start tagging sharks! Lucky students are now able to land, tag, and release sharks which is added to a citizen science database. Each student who successfully tags a shark receives a certificate in the mail!



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Sustainability in Marine Fisheries

This program expands on Fisheries in order for students to learn how managers regulate both recreationally and commercially important species, and how they too can fish sustainably. Slot sizes, open and closed seasons, being a responsible consumer as well as many different types of fishing are discussed. A great addition to our Conservation Angling program, Sustainability in Marine Fisheries gives students a greater knowledge base about fishing before heading out to catch fish!

Conservation Town Meeting

What would happen to Pigeon Key if the foundation that works to preserve it was threatened? Your group gets to find out when half of your students become Developers lobbying for change, while the other half act as Conservationists hoping to preserve the island. A group of students acting as the Board of Directors gets to make the ultimate decision after both sides present their ideas and strategies for Pigeon Key's future. Recommended as the last program before groups leave, this is a great closing activity that keeps students talking about Pigeon Key the whole way home.



Seawater Chemistry

Students become researchers as groups conduct salinity, turbidity, dissolved oxygen, nitrates/phosphates, temperature, and pH tests to determine water quality around Pigeon Key. All results are recorded in an ongoing research collection data bank. After data collection, students answer questions about the water quality tests that their group performed and present their findings to the class. This program is a great chance for students to gain public speaking skills while learning about the importance of water quality—an important skill for any aspiring marine biologist!



EarthDive Research Project

Citizen Science is a growing form of data collection by members of the general public in collaboration with professional scientists. Your students become a part of this Citizen Science when they participate in the EarthDive Research Project, which helps create a database of indicator species in the Florida Keys. A great activity to add another level to all of the snorkeling done while on Pigeon Key. Students snorkel in teams with a dive slate and record certain species of marine creatures they observe and in what quantity. Once back on island, students are

responsible for entering the data into a global database.

Renewable Energy on Pigeon Key

Are you or your students interested in renewable energy? This program examines renewable and non-renewable energy sources and some pros and cons of each. Students are engaged in an open discussion about the ever-changing and controversial field of energy. After exploring different forms, Pigeon Key Staff focus on our very own Solar Array and explain how the island transformed itself in 2012 when it installed 99 solar panels. Students also get to play with solar panels and use their imagination and team-work skills to solve how to achieve sustainable energy for a hypothetical movie theater.



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Marine Remotely Operated Vehicles

We know surprising little about our oceans. In fact, we know more about our own moon than we do our oceans! Marine Remotely Operated Vehicles or ROVs are the most advance way scientists are exploring our oceans today. After a brief explanation of what ROVs are, their applications, and some of the discoveries they've made, students get to play with ROVs! Students are broken up into teams to compete against fellow classmates to see who the best driver is and determine the best overall team. Groups quickly discover driving an ROV is difficult by yourself.

Invasive Species of South Florida

Florida is a hotspot for invasive species. The most popular case of invasion for the Florida Keys is Lionfish. Pigeon Key staff explain the difference between non-native and invasive species while exploring some of the more common cases in Florida. We then focus on Lionfish and why this particular invader is such a problem. The hands-on portion of this program can vary. Schools can choose from 3 main activities or come up with one of their own: a Lionfish snorkel to look for them (yes, we get quite a few around Pigeon Key), a field game, or if we have a Lionfish in our fish tanks, a Lionfish feeding to demonstrate just how gluttonous these creatures truly can be!

Marine Debris

One of the most important issues in the coming years for our oceans, Marine Debris examines the overwhelming presence of unnatural items or trash in our oceans. It was recently stated there is now more trash in our oceans than fish. This issue is something Pigeon Key sees first hand as different items wash up on our shore. Students are taught about the different types of marine debris, common causes and most importantly, what they can do to help. After, students are asked to perform an island stewardship by collecting trash. It is amazing what students find from old boots, to fishing buoys, to even baby clothes! Pigeon Key staff turn it into a competition to see which group can collect the most trash and most unique piece.



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Days 3 & 4

Breakfast, lunch & dinner included

Full days of Marine Science programming!



Day 5

Breakfast & dinner included; lunch on own

Good morning Florida! We'll conclude our Pigeon Key program late morning, wrapping up and transferring to our motorcoach on the mainland. Once back in Marathon Key, we'll have lunch on our own (suggestion: Publix Super Market; budget \$10 pp), then we're in for an incredibly special stop to the Turtle Hospital.



Turtle Hospital Tour – Rescue, Rehab & Release. The Turtle Hospital is located on Marathon Key and is a non-profit organization dedicated to the rehabilitation of endangered sea turtles. Groups will be able to sit through a short video presentation and then take a guided tour of the hospital facilities and the sea turtle rehabilitation area. This educational experience lasts approximately 90-minutes and provides a presentation on sea turtles as well as a behind-the-scenes look at the hospital facilities and rehabilitation area. At the end of each program, guests are invited to feed the permanent residents.

After learning everything about turtles and the challenges they face, we'll head back to Homestead and check into our hotel. Tonight, we'll have an easy night with nearby dinner, plus possibly a pool night, a quiz night, or just some down time!

Day 6

Breakfast & dinner included; lunch on own

Today is our last full day in Florida and we're set to make it great. After breakfast at the hotel, we'll travel to Key Largo, about a 45-minute drive.

Dolphins Plus Master Class - Bring your students to this fabulous educational facility to learn about marine mammal anatomy, biology, behavior, intelligence, communication, and conservation. Dolphins Plus is committed to 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. Some topics of study may include dolphin intelligence and communication, marine mammal care, dolphin reproduction and maternity, introduction to marine mammals, dolphin anatomy and physiology, dolphin identification and personalities, behavioral analysis/training game, marine mammal conservation and marine mammal strandings. 3 – 4 hours in length.



A “shallow water interaction” and a “structured interaction” dolphin program may be added on at extra cost. For more information, visit <https://www.dolphinsplus.com/dolphin-swim-programs-key-largo>. We are happy to



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book these on your behalf if desired. No photography is allowed by individuals, however professional photographers are available for group pictures sold through Dolphin's Plus.

After our brilliant morning, we'll grab a quick lunch and then we'll start learning about Coral Reefs.

Coral Reef Restoration Foundation – The Coral Reef Restoration Foundation takes an upbeat look at a downbeat topic - coral reefs. Home to 25% of all marine species, coral reefs protect the coastlines of more than 100 countries, are the backbone of life in the oceans and a critical part of the web of life on our planet. Coral reefs have been around for more than 50 million years, yet they could all be gone by the end of this century. Since the 1970s, the Florida Reef Tract has lost almost 97% of its once-dominant staghorn and elkhorn coral. These species are now critically endangered, taking a huge hit from climate change, ocean acidification, and other pressures. At the Coral Reef Foundation, ground-breaking work is being done with accelerating coral growth in the lab, creating nurseries in the ocean, and replanting back to the reefs.



Coral Restoration Foundation is the world's largest non-profit marine-conservation organization dedicated to restoring coral reefs to a healthy state, in Florida and globally. Their core mission is to restore coral reefs, to educate others on the importance of our oceans, and to use science to further coral research and coral reef monitoring techniques. *"We work to support the reefs' natural recovery processes through the large-scale cultivation, out-planting, and monitoring of genetically diverse, reef-building corals. We engage and empower others in the mission to save our planet's coral reef with education, scientific collaborations, and outreach."*

- ✓ We grow corals in offshore Coral Tree Nurseries, and then outplant them out onto carefully selected sites. Since 2012, we have now planted more than 74,000 critically endangered staghorn and elkhorn corals back onto the Florida Reef Tract. Many of these corals have now grown into thriving colonies with the ability to spawn, kick-starting the reefs' natural process of recovery.
- ✓ We work with 303 coral genotypes across 11 species, to ensure that we are restoring the reefs' genetic diversity and resilience.
- ✓ We rigorously monitor our outplanted corals and use data to inform our strategic development.
- ✓ We work with government agencies including NOAA, universities, NGOs, and others.

Later, we'll have one last educational session – Florida's Wild Birds!



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Florida Keys Wild Bird Rehabilitation Center Master Class - Working to increase awareness of native and migratory bird species as well as their needs, biology, and care, the team hopes that participants develop a greater biological understanding of birds, creating a deeper personal connection with nature. It's no secret that the Florida Keys are known for rare and unique species of birds year-round. This center is situated on the Florida Bay, very close to the Everglades National Park, where almost 400 native and migratory species can be found each year. Facilitated by resident wildlife biologists, students tour the Laura Quinn Wild Bird Sanctuary where they visit the exhibits on the wetlands property.



This evening, we'll have dinner on the water in Key Largo before heading back to our hotel for our final night.

Day 7

Breakfast included but dependent upon departure time

It's time to travel home! Before we head to the airport, we'll make one last stop to discover some amazing Tropical Fruit!

Robert is Here: Exotic Tropical Fruits - Bring your wallet because once you test out a few of these, you'll be sure to want to buy some for the road! Beautiful, luscious tropical fruits that you have probably never seen or experienced before. It is not your ordinary fruit stand! Over 500 unique types of seasonal, tropical fruits; a true fruit paradise! Our host will explain a little about some of the fruits and we'll get to taste too! A fruit milkshake is also included.



Afterwards, it's off to the airport or coach-ride home. We're hoping that you are inspired and taking home wonderful memories that will last a lifetime!



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KEY SCIENCE

Minimum Booking Numbers: 20 students

What's Included:

Roundtrip flights or motorcoach transfers
6-nights' accommodation: 3-nights Homestead; 3-nights Pigeon Key
Airport transfers and coach transportation to activities
All breakfasts, 2 lunches, 6 dinners
4-day / 3-night Marine Science program at Pigeon Key (programs subject to change):
Marine Habitats of the Florida Keys
Reef Fish Identification
Sombrero Reef Catamaran Snorkel
Marine Biology House Field Snorkel
Invertebrate Biodiversity
Shark Biology, Dissection and Feeding
Conservation 'Town Meeting'
Squid Anatomy and Dissection
Plankton Lab & Plankton Tow
Marine Adaptations
Astronomy study
Coral Reef Ecology
Use of Snorkeling gear at Pigeon Key
Dolphins Plus Educational Master Class & Marine Mammal Care Lab
Everglades Alligator Farm & Airboat Ride
Turtle Hospital Master Class Tour
Coral Reef Restoration Master Class
Florida Wild Bird Rehabilitation Master Class
Robert is Here Tropical Fruits + Milkshake
Personal Tour Ambassador
24-hour emergency service

What's Not Included:

Fully comprehensive insurance (mandatory)
Transfers to/from home airport
Baggage costs, pay directly to airline if required
Baggage handling - each student should be able to carry/load their own suitcase
Meals and snacks not shown
Wetsuit use (if needed, please bring one for personal use)
Cost of passports nor required visas
Cost of inoculations or medication required for travel
Sightseeing / Entertainment options not shown as included
Hotel incidental deposits & bills – meals, mini-bar items, billed to room, etc.
Any gratuities – drivers, hotel services, ambassador
Credit card fees if individuals wish to pay via credit card

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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