

# SeaTrek FATHOMS

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300

Focused Adventure Through Hands On Marine Science

SeaTrek BVI is proud to present Focused Adventure Through Hands On Marine Science, our voyage that combines marine science, community service and cultural studies in the Caribbean's Virgin Islands. During the 22-day voyage, students live aboard a 48' sailing catamaran that serves as their mobile research station, providing countless opportunities to study the ecology and experience the mystery of the living marine laboratory that surrounds them.

## COURSE TOPICS

Development of the FATHOMS curriculum is an ongoing, collaborative effort between SeaTrek BVI and a number of marine scientists and master educators who continually review & improve course content. The course curriculum uses a comprehensive, hands-on approach to study the Islands' coral reef and coastal ecology by addressing the following:

- Tropical Marine Ecosystems & Island Ecology
- Scientific & Marine Research Methods
- Culture & Natural History of the Virgin Islands
- Coral Reef Biology & Monitoring
- Island Geology & Mapping
- Water Chemistry & Quality
- Ocean Exploration and Technology
- Marine Resources & Human Impacts
- Marine Ecosystem Management & Conservation
- Minimum of 12 scuba dives that include training in two NAUI Specialty Diver Certifications:  
Introduction to Scientific Diving in Coral Reef Habitats and Marine Heritage Awareness

## DAILY SCHEDULE (SAMPLE)

### MORNING:

- Breakfast and daily goals
- Content lecture
- Lab and/or field study
- Science workbook and reflection

### AFTERNOON:

- Lunch and Q&A on the morning's activities
- Community service/cultural studies activity
- Group work for research projects
- Scuba diving/recreation

### EVENING:

- Dinner and group project updates
- Content lecture, lab, or cultural studies excursion
- Group work for research projects
- Review activity/discussion/video

### RECREATION:

- Scuba diving & snorkeling
- Beach games
- Kayaking
- Hiking
- Sailing
- Paddleboarding

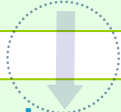


# COURSE CURRICULUM

The FATHOMS program presents biological, chemical, geological and physical marine science concepts to help students make observations and draw conclusions about the dynamics of tropical marine ecosystems. Students apply the scientific method to a variety of hands-on learning experiences, including labs, field studies and community service projects. Students evaluate human impacts and conservation strategies, especially those relevant to the Caribbean and BVI. Through these lectures, hands-on explorations and service projects, students become equipped with the tools necessary to investigate, better understand, and impact the world around them.

## LECTURES

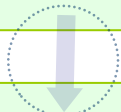
Lecture style is kept interactive and student-driven. FATHOMS uses videos, animations and other media tools to help students comprehend difficult concepts. Each lecture is aligned to a worksheet in the science workbook so that students have access to the information at any time. Hands-on labs and field studies help students apply and integrate the content covered in each lecture.



## LABS

Each lab is designed as an extension of a specific lecture and allows students to observe and apply the concepts discussed, including data analysis. Labs also help students prepare to use that information during a field study.

*Examples of labs include dissections, mapping monitoring sites, collecting water quality data, collecting plankton and sediment for identification and sorting, and observing and classifying fish and invertebrate species.*



## FIELD STUDIES

Field studies occur in terrestrial and aquatic habitats throughout the islands. They are focused on teaching students how to apply the scientific method to real world scenarios and contexts, which helps them develop their research projects.

*Examples of field studies include profiling beaches to examine erosional forces and sediment composition, using GPS to map study sites and organism distributions, collecting water samples for chemical and biological analysis, collecting physical water column data to graph temperature and light profiles, using transects and quadrats to examine biodiversity and population density, and photographing and cataloguing specimens.*

## RESEARCH PROJECTS

The FATHOMS curriculum emphasizes the importance of marine research, conservation, and outreach through two key research projects. Project #1 is the establishment of a coral coverage and disease monitoring program. Project #2 is an individual or small group project chosen by the students and conducted throughout the voyage. Students learn the content and skills necessary to carry out these projects. They then present their work during a peer review session, enabling them to critique and evaluate their work. SeaTrek staff and affiliated marine scientists work with students to provide resources and feedback throughout the entire process, allowing the students to experience the complete scientific process and gain valuable skills that they will use for their entire life.

## COMMUNITY SERVICE PROJECTS

SeaTrek has collaborative projects with a variety of organizations throughout the BVI, including the Jost Van Dykes Preservation Society, Association of Reef Keepers, Conservation & Fisheries Department, and National Parks Trust. In working with these groups, students are responsible for collecting data and helping educate BVI residents and tourists about the marine environment. SeaTrek also assists international organizations in addressing marine conservation issues on a global scale.

*Examples of community service projects include Coral Coverage & Disease Surveying, Sea Turtle Tagging & Monitoring, REEF Fish Identification, Lionfish Marking & Capture, Seagrass Monitoring and Mangrove Planting, CoralWatch, and Beach Cleanups.*



## CULTURAL STUDIES

By interacting with and working alongside BVI residents, students gain insight into the culture and natural and human history of the BVIs. Students not only learn about the Islands' marine environment and resources, but begin to explore outreach and management strategies for protecting the region's valuable marine resources.

*Examples of cultural studies activities include field trips to historical sites and natural areas of the BVI; presentations by BVI fishermen and divers, park rangers, and scientists; interviews with residents and tourists; and community service projects.*

