Plankton | Ocean Food Chains  
20 student maximum

Students will learn about the roles and importance of phytoplankton and zooplankton in marine food chains. They will participate in a plankton tow aboard the RV *Stommel* and learn the process of net deployment and retrieval. Collected samples will be brought back to the laboratory for examination under microscopes, with various species identified using local ID manuals. This is a 2.5-hour class and includes bus transportation, boat transportation for specimen collection, and BIOS educator.

Proficiency Scales:  
P6 Biology / Food Chains  
M1 Biology / Habitats and Environment / Food Chains  
M3 Biology / Food Webs and Keys

Marine Debris | Plastic Pollution  
20 student maximum

Students will learn about the negative impacts that marine debris can have on the environment. They will participate in two aspects of a marine debris clean up: categorizing larger identifiable debris utilizing the Marine Debris tracker application, and sampling quadrats for microplastics at Cooper’s Island Nature Reserve. This is a 3.5-hour excursion and includes bus transportation and BIOS educator. This field excursion offers laboratory-based extensions for further data collection.

Proficiency Scales:  
P6 Biology / Caring for the Environment  
M1 Biology / Caring for the Environment

The Water Cycle | Changing States of Matter  
20 student maximum

Students will review the states of matter and participate in their own water density experiments. Students will learn about the water cycle and build their own precipitation graphs. Students will end the day looking at all factors that influence our day-to-day weather. Classes will have the option of taking home a weather station for one month for use in their classroom. This is a 2.5-hour class at BIOS and includes bus transportation, experimental materials, and BIOS educator.

Proficiency Scales:  
P5 Inquiry / Make observations and measurements  
P5 Chemistry / Changing States of Matter (evaporation and condensation)  
P4 Chemistry / Properties of Matter

Ocean Sounds | The Science of Sound  
20 student maximum

Students will explore how sound travels differently in air and in water. They will conduct their own experiment on vibration and explore how marine life use sound to communicate. This is a 2.5-hour class at BIOS and includes bus transportation, experimental materials, and BIOS educator.

Proficiency Scales:  
P4 Physics / How Sound is Made and Measured  
M2 Physics / The Properties of Sound
**Force | The Science of Ocean Pressure**

Students will learn about the impact of pressure on marine animals and divers. Students will explore how pressure varies with the ocean’s depth and conduct their own pressure experiments. This is a 2.5-hour class at BIOS and includes bus transportation, experimental materials, and BIOS educator.

Proficiency Scales: M3 Physics / Forces and Friction

20 student maximum

**Circuits | Diagrams and Conductors**

Students will investigate how some materials are better conductors than others and why plastics are used to cover wires and switches. Students will make observations and measurements of circuits and predict the effects of making changes to the length and thickness of wire and changing resistance. This is a 2.5-hour excursion and includes bus transportation, experimental materials, and BIOS educator.

Proficiency Scales: P6 Physics / Circuit Diagrams and Electrical Conductors
M3 Physics / Current in a Circuit

20 student maximum

**Engineering | Robotics**

Students will explore aspects of computer, mechanical and electrical engineering with three hands-on workshops. This is a 4-hour excursion with a 1-hour lunch break (ideally 10:00-2:00). Excursion includes bus transportation, experimental materials and 2-3 BIOS educators.

Proficiency Scales: P6 Physics / Circuit Diagrams and Electrical Conductors
P6 Inquiry / Obtain and Present Evidence
P6 ICT / Programming
M3 Physics / Current in a Circuit
M3 Inquiry / Make Observations and Measurements to Collect Evidence
M3 / Programming

20 student maximum

**Nonsuch Island Excursion**

Journey to Nonsuch Island, considered a “Living Museum.” The island is full of stories of exploration and ecological restoration, and is also home to many endemic and native flora and fauna, including the nesting grounds of the endangered Bermuda Petrel, also known as the Cahow. This is a 4-hour excursion and includes boat transportation, BIOS educator, and snorkel gear.

Proficiency Scales: M3 Biology / Human Influences on the Environment

20 student maximum

**Climate Change Workshop**

Scientists at BIOS are actively researching changes in our Earth’s climate. This introductory lecture will focus on exploring climate change research from ocean circulation patterns to physiological effects in organisms. This workshop runs for 2.5 hours and can be extended for field work opportunities. The excursion includes bus transportation, workshop materials and BIOS educator.

Proficiency Scales: M1 Biology / Caring for the Environment I Renewable and Non-Renewable Resources

20 student maximum
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