

MARINE BIOLOGY

Mondays, September 9-December 9 (no class October 14, or November 4 and 25; 11 weeks)

9:30am-11:00am

Ages 11-14

Students take an in-depth dive into the field of marine biology, as we study habitats, anatomy and adaptations, scientific research methods, and environmental impacts on ocean life. Each lab includes hands-on science activities and experimentation. All lab costs are included in registration fee. Course enrollment is limited to 12 students.

Instructor: Tina Oresteen, BSc

Location: STEM Lab (suite 21)

Course fee: \$250 OR \$25/lab

10% off early registration discount through July 31

10% off sibling discount available beginning August 1

LAB SCHEDULE:

Coral Reef Symbioses – Monday, September 9

We start the semester by investigating relationships between coral reef species, including corals and their algal symbionts, and clownfish and anemones. Students use microscopy and observation of behavior and adaptations to understand the diversity of these organisms.

Arthropods and Echinoderms – Monday, September 16

Students study the adaptations and characteristics two phyla commonly found while beachcombing. We focus on habitats and behaviors of representatives in each group to understand their role in marine ecosystems.

Bivalve Taxonomy – Monday, September 23

This week we focus on the lost art of taxonomy and the classification of organisms. Students learn how to identify bivalves based on features of their shells, and create a dichotomous key to assist in species identification.

Mollusc Biology – Monday, September 30

In our Mollusc Biology Lab, we compare the biology and ecology of three common classes of mollusc – bivalves, gastropods and cephalopods. We study their role in food webs and how the diversity of body plans helps them thrive in different marine habitats.

Ocean Vertebrates – Monday, October 7

This week we focus on the megafauna everyone loves to adore. Students identify different sea turtle species, learn the risks that many marine vertebrates face, and investigate the challenges scientists face in studying these animals.

Ichthyology – Monday, October 21

We study fish families this week - how to identify them, where they live and their role in the ecosystem. Students also combine anatomy and art as they try their hand at the traditional Japanese art of fish printing: gyotaku.

Shark Research – Monday, October 28

Students become shark biologists by learning how researchers tag and track sharks across the world, collecting and analyzing data from tagged sharks, and investigating adaptations of a spiny dogfish shark.

Shark Relatives – Monday, November 11

We learn about the anatomy and ecology of other cartilaginous animals by comparing and contrasting them to their shark relatives and other marine vertebrates.

Seaweed and Algae Lab – Monday, November 18

In this lab we study the diverse groups of algae in the oceans, and their role in marine food webs, as well as habitat and nursery grounds for fish and invertebrates. Students learn about research of algal compounds in medicine, and of the nutritional value in these organisms.

Water Quality Assessments – Monday, December 2

Marine organisms are dependent on the water they live in for all of their life's processes. This week we conduct water chemistry tests to evaluate nutrient cycling and biological filters in saltwater tanks.

Ocean Acidification Lab – Monday, December 9

Students conduct an experiment modeling the oceanic carbon cycle to investigate how ocean acidification may impact individual species and the ecosystem as a whole.