



SCHOOL PROGRAMS

Exploring the Science of Our Ocean Planet



Registration
opens on
August 27

FALL 2019 *to*
SPRING 2020

Explore AND DISCOVER



Welcome to the 2019–20 school year and programming offered by Birch Aquarium at Scripps Institution of Oceanography, UC San Diego. We are dedicated to providing interactive and hands-on programming that connects your students to the ocean, Earth, and atmosphere while developing critical thinking skills.

AT THE AQUARIUM

DISCOVERY LABS

Offered: Sept. 30, 2019 to June 5, 2020

Instructor-led, hands-on programs in one of our classrooms are available weekdays. Aquarium admission is included in fee.

Start Times

Age 2–Gr. 1: 9:45, 11, or 12:15 p.m.

Gr. 2–12: 9:45, 11:15, or 1 p.m.

All ages: \$11/student

SELF-GUIDED VISITS

Offered: Year Round

Explore Birch Aquarium at your own pace without structured programming. Offered daily, year-round, during regular aquarium hours. Pre-registration is required.

Minimum: 10 students

Age 3–Gr. 12: \$9/student



OUTREACH TO YOUR SITE

AQUARIUM EXPRESS OUTREACH



Offered: October–June, Weekdays

Our Aquarium Express van can travel to your school. Students will experience a variety of hands-on Discovery Labs in the comfort of their own classroom. Book multiple sessions to serve your entire grade.

See our website for pricing and booking requirements. Additional fees may apply.

MEET US AT THE BEACH

BEACH TEACHES



Offered: November–June

Two-hour exploration with Birch Aquarium educators on the beach at the Matlahuayl State Marine Reserve (La Jolla Shores).

Includes same day aquarium admission.

See our website for booking requirements. Program dates determined by low tides.

Gr. 3–12: \$20/student

Note: Meets at La Jolla Shores

THE KEY

Meet Us at
the Beach



Includes
Dissection



Live
Animal
Touch



Can Travel
to You





Tips AND TRICKS

Registration opens on August 27

REGISTRATION

Registration is required four weeks in advance. We recommend that you register as soon as possible to ensure a visit on the date and time(s) of choice. Availability is limited.

PROGRAM SIZE

To best serve your students, we require that your class size remains below the maximum number of students per program. Small classes are welcome, but please note that you are required to pay for the student minimum per program.

FAQS

Please see our website for frequently asked questions, booking tips, and guidelines.



CHAPERONES

Adult chaperones get in free within our recommended ratios. *Additional adult chaperones are \$16/person.*

FINANCIAL AID

Financial aid is available for on-site **Discovery Labs, Self-Guided Visits, Aquarium Express Outreach, and Beach Teach** programs. Apply online. Funds are limited and based on need.

BOOK YOUR PROGRAMS TODAY:

If you have any questions or want to check available dates:

Book online: aquarium.ucsd.edu

Email: birchaquariumprograms@ucsd.edu

Call: 858.534.7336

Standards MADE EASY

All our Discovery Lab programs have been revised to align with the Next Generation Science Standards. See each title for the Disciplinary Core Ideas, Science and Engineering Practices, and Crosscutting Concepts.



DISCIPLINARY CORE IDEAS (DCI) LIFE SCIENCE

- LS1.A: Structure and Function
- LS1.C: Organization for Matter and Energy Flow in Organisms
- LS1.D: Information Processing
- LS2.A: Interdependent Relationships in Ecosystems
- LS2.B: Cycles of Matter and Energy Transfer in Ecosystems
- LS2.C: Ecosystem Dynamics, Functioning, and Resilience
- LS4.B: Natural Selection
- LS4.C: Adaptation
- LS4.D: Biodiversity and Humans

EARTH AND SPACE SCIENCE

- ESS2.A: Earth Materials and Systems
- ESS3.A: Natural Resources
- ESS3.C: Human Impacts on Earth Systems

ENGINEERING, TECHNOLOGY, AND THE APPLICATION OF SCIENCE

- ETS1.A: Defining and Delimiting Engineering Problems
- ETS1.B: Developing Possible Solutions
- ETS1.C: Optimizing the Design Solution

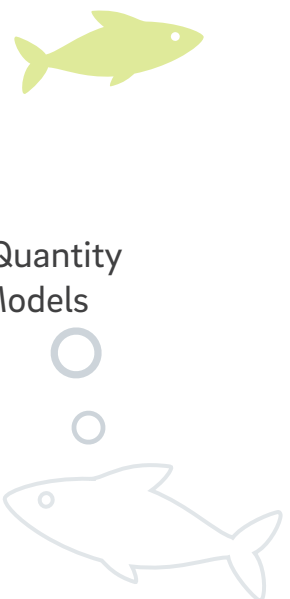
SCIENCE AND ENGINEERING PRACTICES (SEP)

1. Asking Questions and Defining Problems
2. Developing and Using Models
3. Planning and Carrying Out Investigations
4. Analyzing and Interpreting Data
5. Using Mathematics and Computational Thinking
6. Constructing Explanations and Designing Solutions
7. Engaging in Argument from Evidence
8. Obtaining, Evaluating, and Communicating Information



CROSSCUTTING CONCEPTS (CCC)

1. Patterns
2. Cause and Effect
3. Scale, Proportion, and Quantity
4. Systems and System Models
5. Energy and Matter
6. Structure and Function
7. Stability and Change



Student min/max: 15/24
Program Duration: 50 minutes
Chaperone Ratio: 1:2

MEET AND GREET THE SEA



Swim, crawl, walk: there are a lot of ways to get around in the sea. Learn how different animals move through play and live animal interactions.

Properties and Characteristics of Living Things, Observation and Investigation



Student min/max: 20/25
Program Duration: 60 minutes
Chaperone Ratio: 1:5

COLOSSAL KELP



Grades K, 1

Dive into the wonderful world of kelp as students learn about this habitat and meet the amazing critters that call this underwater forest home.

NGSS: DCI: (K) LS1.C, ESS3.A, (Gr. 1) LS1.A, LSI.D; SEP: 4,7; CCC: 1,4,6

TIDE POOL TREASURES



Grades K, 1

Students explore the world of tide pools and learn how tide pool creatures find food, protect themselves, and move in this dynamic habitat.

NGSS: DCI: (K) LS1.C, ESS3.A, (Gr. 1) LS1.A, LSI.D; SEP: 4,7; CCC: 1,6

FASCINATING FISH



Grade 1

What makes a fish a fish? Through exploration of a real fish specimen, students will investigate the unique structures of fish.

NGSS: DCI: LS1.A; SEP: 6; CCC: 1,4

SANDY SHORES



Grade 2

How does water affect the sandy shore habitat? Students explore what sand is made of, how it is created, and the animals that live in it.

NGSS: DCI: ESS2.A; SEP: 2,6,7; CCC: 1,2,6,7

GRADES 3-5

Student min/max: 20/36
Program Duration: 60 minutes
Chaperone Ratio: 1:5

FISH DIVERSITY



Grades 3, 4

Through hands-on exploration of biofacts and specimens, students will develop an understanding of the roles that adaptations in body shape, coloration, and teeth play in enabling fish to survive in diverse habitats.

NGSS: **DCI: (Gr. 3) LS4.C, (Gr. 4) LS1.A;**
SEP: 6, 7; CCC: 1, 2



Beach Teach BEACH INVESTIGATION



Grades 3-5

Students discover what makes a sandy beach habitat unique through exploration of seaweed, sand, and local animal adaptations.

Includes same day aquarium admission.

Price: \$20/student
Program Duration: 2 Hours
Chaperone Ratio: 1:5

NGSS: **DCI: LS4.D, LS2.A;**
SEP: 8; CCC: 2,4

CREATURES OF THE KELP



Grades 3, 5

Discover an underwater forest and its importance to marine organisms. How can changes in the environment affect this ecosystem?

NGSS: **DCI: (Gr. 3) LS4.C, LS2.C, (Gr. 5) LS2.A;**
SEP: 2, 4; CCC: 4

SENSATIONAL SHARKS



Grade 4

Discover the body structures that have helped sharks thrive in the ocean for millions of years. Students will explore data from local scientists to understand how these adaptations can impact shark behavior.

NGSS: **DCI: LS1.A; SEP: 4, 6, 7; CCC: 2, 6**

FISH OR SQUID DISSECTION



Grades 4, 5

Examine fish or squid inside and out through dissection of the animal. Gr. 4 students will discover the structures that help the animal to swim, eat, and protect itself in the open ocean habitat. Gr. 5 will explore the role of the animal in the food chain based on their body structures and functions.

NGSS: **DCI: (Gr. 4) LS1.A, (Gr. 5) LS2.A, LS2.B;**
SEP: 6, 7, 8; CCC: 4, 6



GRADES 6-8,9-12

Student min/max: 20/36
Program Duration: 75 minutes
Chaperone Ratio: 1:5



SHARK SCIENCE



Grades 6, 7

For over 50 years, locals have observed large numbers of Leopard Sharks gathering off of La Jolla. Students become the scientists, as they explore this phenomenon and understand why sharks are our yearly visitors.

NGSS: *DCI: (Gr. 6) LSI.B, (Gr. 7) LS2; SEP 4,7,8; CCC: 1,2,4,6*

FISH OR SQUID DISSECTION



Grades 6, 7, 9-12

As scientists, students use the mackerel or squid as their model subject. Gr. 6 students will identify animal structures and their functions, as well as determine the system to which they belong. Gr. 7 will explore how the adaptations of the animal help them avoid predation and compete for resources within their ecosystem. Gr. 9-12 students deepen the exploration of animal structures and their functions to discuss how the interactions of their systems help the animal survive.

NGSS: *DCI: (Gr. 6, 9-12) LS1.A, (Gr. 7) LS2.A; SEP: 6,7,8; CCC: 2,4,6*

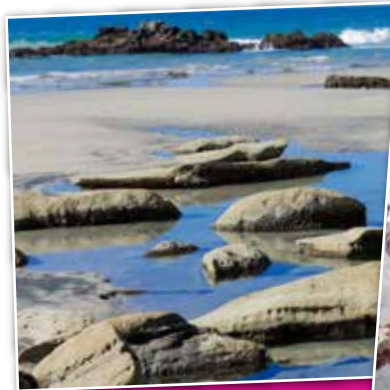
ENERGY ENGINEERING CHALLENGE



Grades 6, 8, 9-12

Examine the use of natural resources for energy and the impacts of human activities. Students investigate alternative energy sources and engineer solutions for the energy needs of a growing world.

NGSS: *DCI: ETS1.A, ETS1.B, ETS1.C, ESS3.C; SEP: 2,4,5,6,7; CCC: 2,3,5,6*



Beach Teach TIDEPOOLING



Grades 6-12

Like local scientists, students survey a tide pool to learn more about patterns in this ecosystem.

Students collect and analyze data about the biodiversity of this changing habitat.

Includes same day aquarium admission.

Price: \$20/student
Program Duration: 2 Hours
Chaperone Ratio: 1:5

NGSS: *DCI: LS2.A, LS2.C, ESS3.A, ETS1.B; SEP: 3, 6, 7; CCC: 1, 2, 7*



MAKE THE *Most* OF YOUR PROGRAM



We're connecting our hands-on lessons to your classroom with **PRE/POST DISCOVERY LAB** activities. The learning doesn't stop at Birch Aquarium.

ENHANCE YOUR AQUARIUM EXPERIENCE with Self-Guided Exploration Flip Cards for grades K-5! Find them online or at the information booth in the Galleria. Plan ahead and download a **Self-Guided Worksheet** for middle and high school students.

FREE PRE-VISIT FOR TEACHERS! Visit the aquarium free of charge before your scheduled field trip.

Teachers must show school ID. Guests must pay admission.

Join us at our local tide pools and sandy shores for in-depth investigations during a **BEACH TEACH** program, which **now includes aquarium admission!**

BOOKING A LARGE GROUP?

We recommend booking at least two months in advance to ensure your dates and times

BE IN THE KNOW.

Visit the "For Teachers" section of our website for more information on our school and teacher programs, and to sign up for our teacher e-newsletter.

We've **CHANGED OUR DISCOVERY LAB TIMES** to better accommodate your transportation needs! Book back to back Discovery Labs beginning at 9:45 to make the most of your visit for your entire group.

THANK YOU TO OUR EDUCATION SUPPORTERS

*Charles & Ruth Billingsley Foundation • Coastal Community Foundation
Daphne Seybolt Culpeper Memorial Foundation • Don and Cheryl Ward
Ellen Lehman and Charles Kennel • McCarthy Family Foundation
Nordson Corporation Foundation • Price Philanthropies Foundation
SDG&E • Stephen and Mary Birch Foundation • Sue Randerson • Union Bank
US Bank • Veerabhadran Ramanathan*

Free for all teachers!

TEACHER APPRECIATION NIGHT



**A night just for educators on
Tuesday, October 1, 5-7 p.m.**

Be our guest as you are introduced to the world beneath the waves and the resources available to you through Birch Aquarium at Scripps.

- Learn about our Pre-K to Gr. 12 programs
- Discover new financial aid and outreach opportunities
- Participate in educational activities
- Explore aquarium exhibits
- Win fabulous prizes

Pre-registration required. Free!
Please call 858.534.7336 or sign up
online at aquarium.ucsd.edu/teachers.

