Programs Overview and Pricing

SCHOOL PROGRAMS AT A GLANCE

We offer a wide range of programs, whether at the Aquarium, at your school site, or at the beach.

At the Aquarium

DISCOVERY LABS: Instructor-led, hands-on programs in one of our classrooms are available weekdays. Aquarium admission included in program fee. Discovery Labs run September 26, 2016 to June 9, 2017. See descriptions below.

Start times: 9:30 a.m., 11 a.m., and 12:30 p.m. September – February Ages 3-5: \$8.50/student Grades K-12: \$9.50/student

March – June Ages 3–5: \$10/student Grades K-12: \$11/student

SELF-GUIDED VISITS: Explore Birch Aquarium at your own pace without structured programming. Offered daily, year-round, during regular aquarium hours. Registration is required. Enhance your aguarium experience with Self-Guided Exploration Flip Cards for grades K-5, available online or from the information booth in the Galleria. Note: 10-student minimum. September – February

Age 3-Grade 12: \$8/student

March – June Age 3-Grade 12: \$9/student **Outreach to Your Site**

AQUARIUM EXPRESS OUTREACH: The Aquarium Express van can travel to your school, bringing with it the wonders of the ocean, Earth, and atmosphere. Students will experience a variety of hands-on programs, all in the comfort of their own classrooms.

Our classroom-based Discovery Labs come to your school, weekdays, year-round, between the hours of 9 a.m.-4 p.m.

September – February

Ages 3–5: \$205/two half-hour programs Grades K-12: \$205/program*

*Book more than one program per day at the same school and receive a discount.

Meet us at the Beach

BEACH TEACHES-SHORE EXPLORATION, BEACH INVESTIGATION OR TIDEPOOLING: Twohour exploration with Birch Aquarium educators on the beach at the Matlahuayl State Marine Reserve (La Jolla Shores). Select dates only, program subject to tides and weather. Call 858-534-7336 or visit aquarium.ucsd.edu to see available dates. See descriptions below.

September – June

Grades 1-12: \$12.50/student Note: Beach Teaches meet at La Jolla Shores. Same-day aquarium admission add-on is \$6/student.

* NGSS-revised \leftarrow Live Animal Touch \rightarrow Dissection \leftarrow Can Travel to You \neq Meet Us at the Beach

Disciplinary Core Ideas Crosscutting Concepts Science and Engineering Practices

Ages 3-5

Student min/max: 10 students minimum, 16 students maximum; Program Duration: Two 30-minute lessons; Chaperone Ratio: One chaperone per two students (1:2)

Introduce pre-Kindergarten students to ocean habitats and organisms. Through guided explorations, students observe how animals feel, move, and behave while building investigation skills.

PRUGRAM	SCIENCE CONCEPTS
Sea Stories AGES 3-4 A children's story comes alive with puppets and interactive play, with a visit from live hermit crabs and other shelled ocean animals.	Properties and Characteristics of Living Things, Observation and Investigation
Meet and Greet the Sea 🚧 🛲 AGES 4-5 Learn how different sea creatures move and survive in the tide pools through puppet demonstrations, role-play and live animal interactions.	Properties and Characteristics of Living Things, Observation and Investigation

Grades K-2

Student min/max: 20 students minimum, 25 students maximum; Program Duration: 60-minute lesson; Chaperone Ratio: One chaperone per five students (1:5)

Explore the wondrous ocean habitats of the Kelp Forest, Sandy Shores and Tide Pools. Students in the early elementary grades put their observation skills to use to understand patterns of how different animals survive in these unique habitats.

PROGRAM	NEXT GENERATION SCIENCE STANDARDS ALIGNMEN	help a fish to swi
Colossal Kelp K-1 Dive into the wonderful world of kelp as stu- dents learn about the kelp bed habitat and meet the amazing critters that call this underwater forest habitat home.	DCI: LS1.C: Matter and Energy Flow in Organisms, ESS3.A: Natural Resources CCC: Structure and Function, Patterns, Systems SEP: Argument from Evidence, Constructing Explan tions	a- a- a- b- a- b- b- b- b- b- b- b- b- b- b- b- b- b-
Fascinating Fish GRADE 1 What makes a fish a fish? Through dress-up and exploration of real fish, students will investigate the unique characteristics of fishes.	DCI: LS1.A: Structure and Function CCC: Patterns, Systems SEP: Constructing Explanations	coloration, and te in diverse habitate Sensational Sha Explore the 6 ser
Sandy Shores Solution GRADE 2 only Students examine sand samples from all over the world, observe animals that live in sandy habitats, and investigate how these animals find food and shelter in their environment.	DCI: LS4.D: Biodiversity and Humans, ESS2.A: Earth Materials CCC: Cause and Effect, Stability and Change SEP: Argument from Evidence, Constructing Explanations	most unique fish and bony fish and have helped thes thrive in the ocea
Tide Pool Treasures GRADES K*, 1* Students explore the world of tide pools and learn how tide pool creatures find food, protect them- selves, and move about in these dynamic habitats.	DCI: LS1.C: Organization for Matter and Energy Flow in Organisms, ESS3.A: Natural Resources CCC: Structure and Function, Patterns, Systems SEP: Analyzing and Interpreting Data, Argument from Evidence	Teacher Tip Let our instructors guide your students through an

Grades 3-5

Student min/max: 20 students minimum, 36 students maximum; Program Duration: 60-minute lesson; Chaperone Ratio: One chaperone per five students (1:5)

Let your students get their hands on an understanding of structure and function with our Dissection Discovery Labs, or learn how we are connected to and impact the creatures of the ocean.

	PROGRAM	NEXT GENERATION SCIENCE STANDARDS ALIGNME
	Can You Dig It? Scrades 3-4 Students become marine paleontologists as they test the properties of different rocks, compare fos- sil samples to present-day marine animals, and uncover fossils.	DCI: (<i>Gr. 4</i>) LS4.A: Evidence of Common Ancestry a Diversity, (<i>Gr. 3</i>) ESS1.C: The History of Planet Ear CCC: Cause and Effect; Scale, Proportion, and Quar SEP: Analyzing and Interpreting Data
	Creatures of the Kelp Creatures of the Kelp Creatures of the Kelp Creatures of the Kelp Creater Creater	DCI: (<i>Gr. 3</i>) LS1.B: Growth and Development of Orgisms, (<i>Gr. 4</i>) LS1.A: Structure and Function, (<i>Gr. 5</i>) LS1.C: Matter and Energy Flow in Organisms CCC: Systems and System Models SEP: Developing Models, Analyzing and Interpreting Data
	Fish Dissection S GRADES 4*, 5* Examine fish inside and out! Through external examination and internal dissection of Pacific mackerel, students will discover the structures that help a fish to swim, eat, and protect itself in the open ocean habitat.	DCI: (Gr. 4) LS1.A: Structure and Function, (Gr. 5) LS2.A: Interdependent Relationships in Ecosystems LS2.B Matter and Energy Transfer in Ecosystems CCC: Systems, Structure and Function SEP: Constructing Explanations, Argument from Evidence
	Fish Diversity GRADES 3*, 4* Through hands-on exploration of biofacts and specimens, students will develop an understand- ing of the roles that adaptations in body shape, coloration, and teeth play in enabling fish to survive in diverse habitats.	DCI: (<i>Gr. 3</i>) LS4.C: Adaptation, (<i>Gr. 4</i>) LS1.A: Struct and Function CCC: Patterns, Cause and Effect SEP: Constructing Explanations, Argument from Evidence
	Sensational Sharks SGRADES 3-5 Explore the 6 senses that make sharks one of the most unique fish in our oceans. Compare sharks and bony fish and discover the adaptations that have helped these amazing animals thrive in the oceans for millions of years.	DCI: (Gr. 3) LS4.B: Natural Selection, (Gr. 4) LS1.D: formation Processing, (Gr. 5) ESS3.C: Human Impa on Earth Systems CCC: Cause and Effect SEP: Obtaining, Evaluating, and Communicating Information
•••• Tead	 Squid Dissection Squid Dissection GRADES 4*, 5* Through scientific observation and dissection, students discover the unique 	DCI: (Gr. 4) LS1.A: Structure and Function, (Gr. 5) LS2.A: Interdependent Relationships in Ecosystems LS2.B: Matter and Energy Transfer in Ecosystems CCC: Systems, Structure and

Grades 6-8 and 9-12

Student min/max: 20 students minimum, 36 students maximum; Program Duration: 75-minute lesson; Chaperone Ratio: One chaperone per five students (1:5)

We've lengthened our middle- and high-school Discovery Labs to deepen the learning, so now students can explore ocean science and engineering concepts for 75 minutes.

	FROOMAM	NEXT DEMERATION SCIENCE STANDARDS ACIONMENT
n Ancestry and of Planet Earth on, and Quantity	Earth Rocks! GRADES 6-8 And it rolls! Through a combination of hands-on activities and cutting-edge technology, students will explore the nature of earthquakes, how scien- tists pinpoint an earthquake's epicenter, and how engineers design earthquake-proof structures	DCI: ESS2.B: Plate Tectonics and Large-Scale System Interactions, ESS3.B: Natural Hazards, ETS1.B Developing Possible Solutions CCC: Patterns, Stability and Change SEP: Constructing Explanations and Designing Solutions
Interpreting	Energy Engineering Challenge GRADES 6*, 8*, 9-12* Examine the use of natural resources for energy and the impacts of human activities. Students in- vestigate alternative energy sources and engineer solutions for the energy needs of a growing world.	 DCI: (Gr. 6, 8) ETS1.A: Defining an Engineering Problem, ETS1.B: Developing Solutions, ETS1.C: Optimizing the Design Solution CCC: Influence of Science, Engineering, and Technology on Society and the Natural World SEP: Analyzing and Interpreting Data
ion, (<i>Gr. 5)</i> Ecosystems, cosystems nent from	Fish Dissection C GRADES 6*, 7, 9-12 As scientists, students use the Pacific mackerel as their model subject to explore defining fish char- acteristics and the crucial adaptive anatomy and physiology that allow fish to survive in a marine environment.	 DCI: (<i>Gr. 6, 9-12</i>) LS1.A: Structure and Function, (<i>Gr. 7</i>) LS2.A: Interdependent Relationships in Ecosystems CCC: Structure and Function, Systems, Cause and Effect SEP: Argument from Evidence
S1.A: Structure nent from	Mussel Clump Diversity 😂 🖚 GRADES 7*, 9-12* Discover the rich biodiversity of animals that make their home in the mussel clumps of the rocky shore. By taking apart a mussel clump, students learn about how these animals are classified on their unique characteristics and how	DCI: LS2.A: Interdependent Relationships in Ecosys- tems, LS2.C: Ecosystem Dynamics CCC: Cause and Effect, Stability and Change SEP: Analyzing and Interpreting Data, Argument from Evidence
Human Impacts	they depend on one another for survival.	
nunicating	Sharks in the Spotlight Second GRADES 6-8 Why do Leopard Sharks gather off the beach in La Jolla? Students become shark scientists as they replicate actual shark research conducted by	DCI: LS1.B: Growth and Development aof Organisms CCC: Structure and Function, Systems and System Models

SEP: Obtaining, Evaluating and Communicating Information

DCI: (Gr. 6, 9-12) LS1.A: Structure and Function, (Gr. 7) LS2.A: Interdependent Relationships in order to explore both external and internal anato- Ecosystems

my, while discovering the structural and behavioral CCC: Systems, Cause and Effect **SEP:** Argument from Evidence

Fall is a great time to visit: fewer crowds, great weather, and lower program fees! Program fees change March 1, 2017 to reflect peak-season rates.

Teacher Tip

March – June Ages 3–5: \$235/two half-hour programs Grades K-12: \$235/program*

HOW TO REGISTER

Book online at aquarium.ucsd.edu and click on the Education tab and choose School Programs, or call 858-534-7336, 8:30 a.m.-5 p.m. daily.

Reservations are required two weeks in advance and are on a first-come, first-served basis. We recommend that you register as soon as possible to ensure a visit on the date of your choice.

Free admission is provided to chaperones that fall within our recommended ratios for each grade level. Additional chaperones over the allotted amount are \$15.50 per person.

FINANCIAL AID

Through the generosity of Price Philanthropies and other donors, the Price Philanthropies Ocean Science Education Fund has been established to increase access to hands-on ocean science education by delivering our Aguarium Express Outreach programs directly to the schools in our community that need it most, especially Title 1 schools. Visit aquarium.ucsd.edu to apply for Aquarium Express Outreach support. leacher lip

Need help coordinating

programs for an entire grade?

Take advantage of our Aquarium **Express Outreaches to bring the** ocean to you! And don't forget

about our Financial Aid for outreaches.

Financial aid is also available for Discovery Labs at the Aquarium, Self-Guided Visits, and Beach Teaches-apply online at aquarium.ucsd.edu and search for Financial Aid.

- Beach Teach Dive into science processes in the field.

Student min/max: 20 students minimum, 32 students maximum Program Duration: 2 hours; Chaperone Ratio: One chaperone per four students (1:4)

Information

Shore Exploration 🗡 GRADES 1-2 ONLY Come explore a local shore habitat! Students will become familiar with life where the ocean touches the land and properties of the beach.

DCI: LS1.A: Structure and Function, LS2.A: Interdependent Relationships in Ecosystems Structure and Function, Stability and Change Obtaining, Evaluating, and Communicating

Student min/max: 20 students minimum, 32 students maximum Program Duration: 2 hours; Chaperone Ratio: One chaperone per five students (1:5) Beach Investigation 🗡 GRADES 3-5

exploration of our local

Marine Protected Areas

with a Beach Teach

Visit and explore a Marine Protected Area. Students discover the secrets of a sandy beach habitat to learn more about seaweed, sandlocal animals and their adaptations.

structures that souid have

to survive in an open ocean

Tidepooling 🗡 GRADES 3-5 Come explore a local tide pool! Students will learn about life on the rocky shore and the special adaptations animals have to survive in this harsh environment.

DCI: LS4.D: Biodiversity and Humans, LS2.A: Interdependent Relationships in Ecosystems Cause and Effect, Systems and System Models Obtaining, Evaluating, and Communicating

DCI: LS2.D: Social Interactions and Group Behavior, LS4.D: **Biodiversity and Humans** Structure and Function, Cause and Effect Obtaining, Evaluating, and Communicating Information

Program Duration: 2 hours; Chaperone Ratio: One chaperone per five students (1:5) Beach Investigation 🗡 GRADES 6-12* By exploring a local marine reserve in La Jolla, students will discover the interconnectedness of a marine system. Hands-on exploration and

> answer to a question using scientific processes. Tidepooling 🗡 GRADES 6-12* Students survey a tide pool to learn more about this unique ecosystem and the organisms that call it home. While exploring a local tide pool, students collect and analyze data about the biodiversity of this

> > local wonder.

data collection allow students to generate an

Scripps Institution of Oceanography researchers,

Students dissect a common market squid in

adaptations that enable squid to live in the open

Student min/max: 20 students minimum, 32 students maximum

ocean environment.

as well as examine biofacts and touch a live shark. Squid Dissection 🛲 🔀 GRADES 6*, 7, 9-12

> DCI: LS2.C: Ecosystem Dynamics, LS2.D: Social Interactions and Group Behavior, ETS1.B: Developing Solutions

Cause and Effect, Stability and Change Using Mathematics, Analyzing and Interpreting Data, Argument from Evidence

DCI: LS2.A: Interdependent Relationships, LS2.C: Ecosystem Dynamics, ESS3.A: Human Impacts, **ETS1.B:** Developing Solutions Patterns, Cause and Effect, Stability and Change

Using Mathematics, Analyzing and Interpreting Data, Argument from Evidence







AQUARIUM

Welcome to the 2016–17 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. Just like many teachers, we're making the transition to the Next Generation Science Standards, too. We're revising our programs to be more NGSS-aligned and student-centered, connecting the learning even more to your classroom. You'll see in our grade tables above the programs that have been updated (look for the *) and we'll be continuing to refine our programs to best serve your needs and the needs of your students. We're also working on ways to extend the learning and will be posting pre- and postaquarium visit activities on our website (aquarium.ucsd.edu) in the coming months. Stay tuned for more opportunities to take part in new activities that we'll be developing to meet your ocean science education needs!

While you learn about how our programs can serve you, don't forget about some valuable "Teacher Tips" to make the most of your Birch Aquarium experience:

- Discovery Labs deepen the learning that happens during your students' Aquarium visit, and include the price of admission
- Let us lead your investigation of our local ocean habitats our instructors will meet you at the tidepools or sandy shore for a **Beach Teach** program
- The Aquarium Express Outreach is a great way to bring the Aquarium to you. Take advantage of our financial aid opportunities to bring our programs to your school site

If you have any questions, please contact us: birchaquariumprograms@ucsd.edu or 858-534-7336.

Sincerely,



Emily Arnold School Programs Manager, Birch Aquarium at Scripps

Thank You to **Our Education Supporters:**

Frederick Anderson • Mary Ann Beyster • Jui-Yuan Chang • Clif Bar & Company • Coastal Community Foundation • Community Service Association • Jeremy Cowperthwaite and Elba Watkins • William & Deborah Cunningham • Paul & Linnea Dayton • Samantha Dice • Roderick Evans • Moreen & Timothy Fielden • Fuscoe Engineering • Audrey Geisel, Dr. Seuss Fund at the San Diego Foundation • Katherine & Michael Giannotti • Connie Golden • Walter & Karlene Gutjahr • Rachel Heald & Andrew Hart • Glenn Hom & Rosemarie Lim • Alan G. and Jane A. Lehman Foundation, at the suggestion of Charles Kennel and Ellen Lehman • Claudia Lowenstein • Phillip Lozevski • Christine Munson • Linda Nagata • Gail Orell • Sharron & Dan Poff • Price Philanthropies • Veerabhadran & Girija Ramanathan • SDG&E • Jan & K. Barry Sharpless • Catherine Shewchuk • Gordon Strauss and Cathy Strauss • Ki Tak • Takahashi Family Fund • Nancy Tietge • Torrey Pines Docent Society • Union Bank of California Foundation • John Vondracek • Donald & Cheryl Ward • Wells Fargo Foundation • Mary Witzel • Patricia Wong • And many more!











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School Programs

Exploring the Science of Our Oceans & Earth

Birch Aquarium at Scripps aligns its programs with California State and National Science Standards

Fall 2016 – Spring 2017

Information

Function

SEP: Constructing

from Evidence

Explanations Arou

DID YOU KNOW? Leafy Seadragons...

• are masters of camouflage; their color and shape help them hide in seaweed

 are only found along the southern coast of Australia

 are studied by Scripps Institution of **Oceanography and Birch Aquarium** scientists

Birch Aquarium Supports Education

We're here to support your classroom science teaching. Whether through resources to make the most of your students' Aquarium field trip, or through opportunities just for Teachers, we've got you covered!

Free Pre-Visit for Teachers! Visit the aquarium free of charge before your scheduled field trip. Teachers must show school ID. Accompanying guests must pay admission.

See our online resources at aquarium.ucsd.edu, in the Education section

- · Make the most of your Self-Guided Visit with our Flip Cards
- See our Teacher Resources for more helpful materials, including new preand post-visit activities that will extend the learning of your aquarium Discovery Labs.
- Learn more about our Teacher Professional Development opportunities, including NOAA workshops in the Fall and Spring, science content workshops with activities aligned to NGSS, and other opportunities.
- Sign up for our **Teacher e-newsletter** to stay current on our offerings. Find news about upcoming professional development workshops and
- Don't miss Teacher Appreciation Night and Open House! A night just for educators on October 4, 2016, 5-7 p.m. Be our guest as you are introduced to the world beneath the sea and the resources available to you through Birch Aquarium at Scripps.

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aquarium.ucsd.edu