

EXPLORE THE BAY WITH YOUR STUDENTS



2017-2018
PROGRAMS

CONTENTS

In this brochure, and on our website, you will find information about the many program options available at bay.org dba Bay Ecotarium institutions, including **Aquarium of the Bay**, the **Sea Lion Center**, and the **EcoCenter at Heron's Head Park**. All options are FREE for K-12 schools in the nine Bay Area counties, thanks to the generosity of our donors and Aquarium ticket sales. We hope you will find the perfect fit to connect your students to our local environment, and we look forward to exploring San Francisco Bay with you this school year.

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TEACHER TIP: Sign up for our Educator e-newsletter at aquariumofthebay.org

ABOUT BAY ECOTARIUM

The Most Trusted Voice for Water in Northern California

The Bay Ecotarium contains six institutions and is the largest watershed conservation group in San Francisco. Human impact and environmental changes have put a strain on these unique ecosystems, and the Bay Ecotarium works towards preserving this area for future generations. It focuses on changing the conversation about conservation from scarcity to abundance to make this subject approachable and fun.



Aquarium of the Bay

Located on San Francisco's iconic waterfront, Aquarium of the Bay provides approximately 600,000 guests a year with unforgettable encounters with over 20,000 local marine animals that inspire both wonder and conservation.



Sea Lion Center

The Sea Lion Center provides free interpretive presentations by Naturalists, educating local and out-of-town guests about one of San Francisco's most popular wildlife species: the California sea lions.



EcoCenter at Heron's Head Park

Located on the second largest wetland in San Francisco, this landmark environmental education center is a living classroom dedicated to environmental justice, green building, and making better use of the Earth's resources to foster healthy people, ecosystems, and economies.



The Bay Institute

The Bay Institute's scientists and conservationists develop and lead model scientific research, education, and advocacy programs that have a major impact on improving the health of the San Francisco Bay watershed.



Bay Model Alliance

The Bay Model Alliance is a partnership between the Bay Model Visitor Center and bay.org. The Bay Model showcases a working hydraulic model of the San Francisco Bay and Sacramento-San Joaquin River Delta system. For programs visit <http://www.spn.usace.army.mil/Missions/Recreation/Bay-Model-Visitor-Center/Teachers-Quest/>



Bay Academy Section

The Bay Academy is tasked with consolidating and archiving all Bay Institute and educational publications, citations and editorials. As well as developing and designing curriculum based e-learning modules for both teachers and students. Web-based learning, podcasts, blogs, and streaming videos.

PROGRAMS AT A GLANCE

PROGRAMS	LOCATION	GRADE
Bay Explorers	Aquarium of the Bay	TK/K
Between the Tides	Sea Lion Center	TK/K
Our Future's So Bright...	At Your School	TK/K
Eco Heroes	EcoCenter	K,1,2
Solar Solutions	EcoCenter	K,1,2
Have to Have a Habitat	Aquarium of the Bay	1,2,3
Sharks 101	Aquarium of the Bay	1,2,3
Salmon!	Sea Lion Center	1,2,3
Social Cetaceans and Popular Pinnipeds	Sea Lion Center	1,2,3
Turning the Tide	EcoCenter	1,2,3
Water You Gonna Do?	At Your School	1,2,3
And the Darwinner Is...	At Your School	3,4,5
Bay Scientists	Aquarium of the Bay	3,4,5
Food Web of the Bay	Sea Lion Center	3,4,5
Sensational Sea Lions	Sea Lion Center	3,4,5
Native Plant Explorers	EcoCenter	3,4,5
Restoring Diversity: The Wetlands of Heron's Head Park	EcoCenter	3,4,5
It's Ptough to be a Pteropod!	At Your School	3,4,5
Discover the Bay Hybrid Ferry Program	Aboard a Hybrid Ferry	4,5,6,7,8
The Basics of Ocean Acidification	At Your School	6,7,8
Protecting our Plankton	EcoCenter	6,7,8
Oysters: Heroes on the Half Shell	EcoCenter	6,7,8
Wetlands: At Your Service	EcoCenter	6,7,8
Bay Science Lab	Sea Lion Center	6,7,8,9,10,11,12
Climate Change 101	At Your School	9,10, 11,12
High School Behind-the-Scenes Tour	Aquarium of the Bay	9,10, 11,12
Climate Stewards	EcoCenter	9,10, 11,12
Water Wise	EcoCenter	9,10,11,12
Self-Guided Tour	Aquarium of the Bay	TK-12

The chart below is a quick reference guide to our programs **at the Aquarium, Sea Lion Center, EcoCenter, on the Bay, and at your school.**

LIFE SCIENCE	EARTH SCIENCE	PHYSICAL SCIENCE	SCIENCE & ENGINEERING	CAREERS	PAGE
X	X		X		7
X					8
X	X		X		12
	X		X		14
X	X	X	X		14
X					7
X			X		7
X	X		X		8
X					9
X	X				14
X	X				13
X	X				13
X			X	X	7
X			X		9
X			X		9
X			X		15
X	X		X		15
X	X		X		13
X	X		X		10
X	X		X		13
X	X				15
X	X		X		15
X	X		X		15
X	X		X		9
X	X				13
	X			X	7
	X				15
X	X	X	X		15
X	X				6

PROGRAMS AT AQUARIUM OF THE BAY



AQUARIUM SELF-GUIDED TOURS

For groups that only have a short time to visit, a Self-Guided Aquarium Tour is the best option. Self-Guided Tours are flexible and give your group an awe-inspiring look at the life of San Francisco Bay. Self guided tours are available for all grades TK-12.

Program Length: Approximately 1 hour

Days Offered: Tuesdays, Wednesdays, and Fridays

Times Offered: Available between 10:00 A.M. and 2:00 P.M.

Number of Participants: Limit of 35 students and 10 adult chaperones per Self-Guided Tour time slot.

AQUARIUM EXPLORATION TOURS

Exploration Tours integrate a thematic guided tour of the Aquarium's exhibits with hands-on activities and scientific practices.

Program Length: 75 minutes

Days Offered: Mondays and Thursdays

Times Offered: 10:15 A.M., 11:30 A.M., and 1:00 P.M.

Number of Participants: Limit of 35 students and 10 adult chaperones per Exploration Tour time slot with the exception of the High School Behind-the-Scenes Tour, which has a limit of 10 total participants (students and chaperones) per tour and multiple time slots are required.

AQUARIUM EXPLORATION TOUR OPTIONS



Transitional Kindergarten/Kindergarten:

Bay Explorers: Using your scientific skills, explore our very own San Francisco Bay and the amazing animals that live in it.

Lower Elementary (1st – 3rd Grade):

Have to Have a Habitat: Explore the wide variety of animals that live in San Francisco Bay and how they are each adapted to their habitat.

Sharks 101: Discover the amazing world of sharks by observing the Aquarium's sharks and exploring their extraordinary adaptations.

Upper Elementary (3rd – 5th Grade):

Bay Scientists: Science plays an integral role in understanding and caring for the natural world. Discover how everyone can use science to learn about and protect San Francisco Bay.

High School (9th – 12th Grade):

Behind-the-Scenes: Have you ever wondered what it takes to run an aquarium? While going behind-the-scenes, explore how we care for our animal ambassadors, and learn about green job opportunities.

TEACHER TIP: Have students store their lunches in their backpacks or leave them in the car or bus. Aquarium of the Bay, the Sea Lion Center, and EcoCenter do not have storage available for lunches or personal belongings. Additionally, please be aware that there is no indoor eating area. We encourage you to enjoy your lunch outside.



PROGRAMS AT THE SEA LION CENTER



SEA LION CENTER CLASSROOM PROGRAMS

Sea Lion Center programs offer your students a classroom experience by the Bay. Located above K-Dock, home of the world-famous PIER 39 sea lions, Sea Lion Center programs can be coupled with an optional Self-Guided Tour of Aquarium of the Bay.

Program Length: 1 hour (2 hours if combined with a Self-Guided Aquarium Tour)

Days Offered: Tuesdays, Wednesdays, Thursdays

Times Offered: 10:15 A.M., 11:30 A.M., and 1:00 P.M. Self-Guided Tours are scheduled based on program times.

Number of Participants: Limit of 35 students and 10 adult chaperones per program.

CLASSROOM PROGRAM OPTIONS

Transitional Kindergarten/Kindergarten:

Between the Tides: What is life like between the tides? Discover the amazing animals that thrive in the ever-changing habitat where the waves meet the rocky shore.

Lower Elementary (1st – 3rd Grade):

Salmon!: Follow the incredible journey of a salmon's life cycle from egg to adulthood. Discover the integral role these extraordinary animals play in the ecosystems of the Pacific Ocean, San Francisco Bay, and the rivers of California.



Social Cetaceans and Popular Pinnipeds: Marine mammals are among the most intelligent animals on Earth. Explore how these extraordinary creatures rely on each other to survive in their ocean environment.

Upper Elementary (3rd – 5th Grade):

Food Web of the Bay: Explore the beautiful and complex ecology of San Francisco Bay and discover the role we play in maintaining its balance.

Sensational Sea Lions: Discover what makes California sea lions so amazing by engaging in scientific practices used by biologists to study PIER 39's most famous residents.

Middle School and High School (6th – 12th Grade):

Bay Science Lab: Explore the living and non-living environment of one of the most dynamic and diverse ecosystems in the world, using the same tools that scientists use to study San Francisco Bay.

TEACHER TIP: As Aquarium and Sea Lion Center Programs are in different locations, please arrive 10-15 minutes before your scheduled program time. This will give you time to use the restrooms, check in, and help us stay on schedule. If you arrive more than 15 minutes late, we may not be able to accommodate your group at your reserved time.



PROGRAMS ON THE BAY



DISCOVER THE BAY HYBRID FERRY PROGRAM

Explore San Francisco Bay with your students onboard the Hornblower Hybrid Ferry. This immersive learning experience for 4th – 8th grade students dives into:

- The ecology of San Francisco Bay and the surrounding Golden Gate National Recreation Area;
- Impacts of climate change to the region and innovative energy saving technologies;
- The practices of science through guided observation, use of scientific instruments, and problem solving;
- An optional tour of Aquarium of the Bay.

Program Length: 3.5 hours (4.5 hours if combined with an Aquarium Guided Tour)

Days Offered: This program is available on limited dates during the school year. Please check aquariumofthebay.org for more information.

Time Offered: 9:50 A.M. - 1:15 A.M. (2:15 A.M. if Aquarium tour is included)

Number of Participants:

- Limit of 45 participants per program (includes students, teachers, and chaperones);
- Due to boat safety regulations, a minimum of 1 adult chaperone per 7 students ratio is required.

Special thanks to Alcatraz Cruises for funding the Discover the Bay Hybrid Ferry programs for the 2017-2018 school year.



PROGRAMS AT YOUR SCHOOL



PROJECT WATERS

Are you a San Francisco teachers who wants to provide your students with an immersive science experience this school year? Look no further than Project WATERS!

Project WATERS (Watershed and Trout Education for Regional Stewardship) is an exciting program, where teachers and students engage in amazing educational experiences throughout the school year in order to gain a greater appreciation and understanding of local aquatic ecosystems.

The heart of Project WATERS is participation in the California Department of Fish and Wildlife's Trout in the Classroom program, in which teachers host young rainbow trout in their classrooms.

Teachers and students participating in Project WATERS will experience:

- A teacher workshop focused on participation in Trout in the Classroom;
- A tank in your classroom (\$250 value) and additional program materials and support;
- In-classroom presentations on watershed ecology, fish biology, and local conservation issues;
- An age level appropriate Aquarium of the Bay Program;
- A trip to Lake Merced to release the trout fry; and
- A classroom visit by a local fisherman.



Special Thanks to NOAA's National Marine Sanctuaries for supporting Project WATERS for the 2017-2018 school year.

PROGRAMS AT YOUR SCHOOL



BAYMOBILE—BRINGING THE BAY YOUR WAY

Can't get your class to the Aquarium? Then we will come to you! Using our mobile Bay Lab, students will experiment with the science of climate change and meet some animal ambassadors.

Program Length: 1 hour

Number of Programs Per School Visit: 2 or 3

Days Offered: Mondays, Thursdays, and Fridays

Number of Participants: Limit of 15-35 students per program.

Animal Ambassador: All programs come with an animal ambassador. Please note, the listed animal ambassador is subject to change.

School/Site Requirements:

- Drive up location on yard, parking lot, or playground for the day
- 2 power outlets within 50 feet of the drive-up location
- One classroom, library, or multi-purpose room for all programs
 - * We cannot relocate during the school day

BAYMOBILE PROGRAM OPTIONS



Transitional Kindergarten/Kindergarten:

Our Future's So Bright: Explore through play and experimentation how Green innovations can help take care of our climate.

Animal Ambassador: California Kingsnake

Lower Elementary (1st - 3rd Grade):

Water You Gonna Do?: Discover how our changing climate impacts sea level around the world.

Animal Ambassador: Tidepool Invertebrates (with touch tank)

Upper Elementary (3rd - 5th Grade):

And the Darwinner Is...: Explore how plant and animals adapt to a changing environment and how climate change will affect local ecosystems.

Animal Ambassador: Red Eared Slider

It's Ptough to Be a Pteropod!: Observe how a changing environment impacts the ocean food web and explore ways to restore balance to our blue planet.

Animal Ambassador: Tidepool Invertebrates (with touch tank)

Middle School (6th - 8th Grade):

The Basics of Ocean Acidification: Dive into ocean chemistry, discover the building blocks of shelled organisms, observe our impact on aquatic invertebrates, and brainstorm solutions for a healthier ocean.

Animal Ambassador: Tidepool Invertebrates (with touch tank)

High School (9th - 12th Grade):

Climate Change 101: Delve into the basics of climate change and its effects on global ecosystems.

Animal Ambassador: California Kingsnake

TEACHER TIP: Be sure to give us as much information about your group as possible in the Reservation Request Form—this will help us better meet your students' needs!



PROGRAMS AT THE ECOCENTER



ECOCENTER AT HERON'S HEAD PARK PROGRAMS

These conservation programs offer engaging, inquiry based, hands-on experiences that allow your students to explore the EcoCenter at Heron's Head Park.

Program Length: 1 to 2 hours depending on the program

Days Offered: Thursdays and Fridays

Times Offered: Our programs can begin as early as 10:00 A.M. and must finish by 3:30 P.M.

Number of Participants: Limit of 25 students per program; limit of 50 students per day.

ECOCENTER PROGRAM OPTIONS

Lower Elementary (K - 2nd Grade):

Eco Heroes: What does it take to be an Eco Hero? Discover why water is so important to life and what we can do to protect our plant and animal neighbors.

Solar Solutions: Every day, we impact the balance of natural cycles on earth. Join us as we conduct experiments to find out how we impact these cycles. Then explore the ways innovations like solar power help us return balance to the environment.

Lower Elementary (1st - 3rd Grade):

Turning the Tide: Water, the basis of life as we know it, is an incredibly dynamic and important substance. Explore the phases of water, sea level rise, and how we can help maintain water's balance on planet Earth.



Upper Elementary (3rd - 5th Grade):

Native Plant Explorers: Get up close and personal with California native plants at the EcoCenter and around Heron's Head Park. Discover the importance of native plants to local wildlife and Bay Area people while exploring native plants in the field.

Restoring Diversity: The Wetlands of Heron's Head Park: Wetlands are hotspots for life, providing habitat, food, and water for a wide diversity of living things. Learn more about these extraordinary ecosystems by exploring the restored wetland in Heron's Head Park and the constructed wetland in the EcoCenter itself.

Middle School Programs (6th - 8th Grade):

Protecting Our Plankton: As the base of the ocean's food web, healthy plankton populations ensure there's always enough food to go around. Investigate the role these intriguing organisms play in the food web, measure and observe the changing chemistry of the ocean, and look for potential solutions to slow the effects of ocean acidification on these mighty marine organisms.

Oysters: Heroes on the Half Shell: The humble oyster is one of the unsung heroes of San Francisco Bay, providing habitat and food for countless other animals, including people. Explore the world of this endangered keystone species and what local people are doing to bring them back.

Wetlands: At Your Service: Wetlands provide many ecosystem services—from flood control to food production—that help support human wellbeing. Delve into the story of California's wetlands while exploring the wetlands at the EcoCenter and in Heron's Head Park.

High School Programs (9th - 12th Grade):

Climate Stewards: What's happening with our climate and how can we take care of it? Explore climate change basics, how animals and ecosystems are being affected, and what we can all do to make a positive difference in our communities.

Water Wise: How sustainable building design conserves California's vital resource: Explore the EcoCenter's sustainable systems while using hands-on experiments that illustrate ways we can protect and conserve water.

Special thanks to the California Coastal Commission supporting our EcoCenter programs for the 2017-2018 school year.



TEACHER TIP: Would you like to add volunteer work to your EcoCenter program? Our partners at Recreation and Parks Department offer plant restorations at Heron's Head Park. We can connect you during the reservation process.

HOW TO MAKE A PROGRAM RESERVATION

Step #1: Review available programming to determine what best fits the needs of your group. Please note which programs are available to match your group's grade level as well as your schedule. Keep in mind that some programs cannot accommodate wide grade ranges.

Step #2: Fill out an online Reservation Request Form on our website for your respective program. Note: As each form is specific to each program, please make sure you complete the correct form. Reservations via phone or email will not be accepted.

Step #3: Reservation Request Forms are accepted on a first come, first served basis. **One of our education staff will review your form**, call you with any questions, and then process your request.

Step #4: A contract will be e-mailed to you once your request has been confirmed. Your reservation is not complete until you have received a contract.

Please Note: The above reservation process applies to all K-12 school groups from the nine Bay Area counties (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma).

Make your reservation early.

Our calendar fills up fast! Requesting a date in the fall or winter also gives you the best shot at your first choice.

BAY ECOTARIUM



institutions of Bay Ecotarium