

Aquatic Park Science

Curriculum-Based Science

& Rowing Program

Copyright August 2024

Dear Teachers,

Welcome to the fantastic Aquatic Park Science Program (AQPSCI), and thanks for choosing to attend! This ***program is written and provided in partnership with the Ocean Institute at Dana Point.***

This manual contains everything you'll need to prepare your class for your field trip, including waivers, the history of Aquatic Park, and essential logistics. We have updated and streamlined these materials this year and hope they are better than ever.

If you have any further questions, please don't hesitate to contact us directly.

Thanks!

Laura DeFelice,
Education Director

Contact Information

This program is offered through the San Francisco Maritime National Park Association, the park's cooperating nonprofit partner. The San Francisco Maritime National Historical Park is a United States Department of the Interior unit.

Our program takes place at the Maritime Heritage Learning Center, which is also shared with the San Francisco Sea Scouts.

The program location address is 3500 Van Ness Ave. San Francisco

Mailing Address:
SFMNPA
PO BOX 470310
San Francisco, CA
94147

Laura DeFelice,
Education Director
(415) 561-6662 Ext 5
education@maritime.org

An Introduction to the AOP Science Program

In our Aquatic Park Science program, students will explore the local watershed of San Francisco Bay and the various sources of pollution in local waterways. Students will understand past and present environmental impacts through lab activities, dockside water chemistry tests, and samples collected in the bay through rowing. Hands-on activities include building a watershed model, a water filter, and a microscope station to view their plankton sample compared to prepared slides of various species. Students will conclude their program by compiling their data from water chemistry tests and discussing current and potential solutions to climate change.

This program is written and provided in partnership with Ocean Institute.
The list below provides a sneak peek into the five lessons taught during our program. See supplemental activities for pre- and post-lessons.

Background Information: Throughout the development and expansion of San in the late 1800s, the bay had been treated as a dumping ground with various sources of pollution, such as from the shipping and agricultural industries. Hydraulic gold mining from the 1860s through the 1880s washed billions of cubic yards of sediment into the bay, along with high levels of contaminants such as mercury. For almost a century, unregulated levels of industrial pollution affected the bay, and even in modern times, many of the effects remain.

1. **OCEAN ACIDIFICATION: One** waste product of increased industrial development is the release of carbon dioxide (CO_2). With the ocean and other water sources (bays, rivers, streams) acting as a "sponge" and interacting with the atmosphere through gas exchange, higher levels of CO_2 are introduced to the ocean ecosystem and surrounding waterways.
   Standards covered: 5-PS1-3 Make observations and measurements to identify materials based on their properties

2. **Watershed Model and Build a Filter:** Students will be able to:
   - Understand how natural processes can help clean water
   - Understand the importance of clean groundwater and their local estuaries
   - Understand the solutions that engineers must come up with to reduce water pollution
   - Construct a water filter that can clean water

   Standards covered: 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled, and failure points are considered to identify aspects of a model or prototype that can be improved.
   5-ESS2-1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.

3. **Water Quality and Analyzing Data:** Students will be able to:
   - Understand the cause-and-effect relationship between measured components of the hydrosphere and corresponding biosphere of the San Francisco Bay.
   - Obtain empirical evidence by performing given tests and evaluating their validity
   - Evaluate the data collected compared to normal ranges to support arguments about the conditions of the bay and, ultimately the health of the watershed

   Standards Covered:
   3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.
   5-PS1-3 Make observations and measurements to identify materials based on their properties.

4. **Collection and Observing Plankton:**
   By taking our plankton sample in the bay, we can identify the variety of plankton that call the bay home and hope for a diverse sample of phytoplankton and zooplankton. We will be able to paint a picture of the bay's current conditions on the day of our field trip, and this sample can vary from day to day.
   Standards covered: 5-PS1-3 Make observations and measurements to identify materials based on their properties.

Preparing For Your Voyage:

**Group Size and Cost:

The minimum number of participants is 27 students and six adults (plus one teacher) $1,250. The minimum number of participants is flexible, with a maximum of 35 participants, $50 for each additional student.

Crews:
Please divide your class into four groups or "crews." Each crew will need a designated leader or "mate." The mate is responsible for keeping the group on task and moving through the science stations.

For Rowing, two groups will row at a time, while two are in the classroom, and then we switch.

Please explain to the students that the safety rules on the docks and while rowing are essential. They must always exhibit self-control, or they will not be allowed to participate. The staff will explain the specific rules of conduct upon arrival.

Chaperones

Once our staff has greeted you, you will be pulled aside and given a brief orientation. Once the lessons get started, parents and teachers will sit back and enjoy. Parents are encouraged to observe the students but should only communicate with them during the science stations to address safety issues. This allows them the space to think and learn independently. The instructors will handle problems and discipline issues as they arise. In the unlikely event of an emergency, the "Tall Sailors" must assist in supervising the students. Of course, aides for students with special needs are welcome to assist the students who need them. Please get in touch with the Education Director to discuss this further. Please note that we will ask all chaperones to silence their electronic devices before the program begins. Our facility is equipped with a radio and a cell phone in the event of an emergency. Your electronics are a distraction and should not be used during our programming.

Photography
For safety and convenience, **one** adult may take pictures. The historian oversees all cameras and related equipment and will record everyone's experience. Please note that only one historian may be allowed; the teacher may act as a historian if need be.

Things to Bring

***Medical Forms and Liability Waivers** Every participant, including the Teacher and Historian, must have a signed and completed medical form and liability waiver. Copies of these forms can be found at the back of this manual. **Pages 9-13**

***Warm Clothing:** Inadequately clothed students cannot enjoy or learn from the experience. A good rule of thumb to observe is that the hotter the temperature is inland, the colder and windier it is in San Francisco.
Please ensure the students are dressed in long pants (no shorts or skirts) and have plenty of layers available. The ideal combination is a T-shirt, sweater, and windbreaker-type or light jacket. We will supply the waterproof outer layers if needed and lifejackets.

Footwear: Footwear must cover the foot and toes! Sandals, flip-flops, crocs, and heels are not allowed for safety and comfort. Sneakers with socks are recommended.

Sun Protection: Sunscreen for skin and lips is a must since the UV glare from the water is more significant than that on land. Hats and sunglasses may be worn, but to prevent them from being blown overboard, they should be secured by a piece of string or a hat clip.

Lunch: Every student participant should bring a lunch with a refillable water bottle to be consumed on shore mid-way through the program. Lunch should be easily digested and free of oily, fatty, or spicy foods (such as potato or flavored tortilla chips; these tend to increase motion sickness). Please avoid carbonated sodas and sweetened juices; water is the preferred lunch drink.

Lunch will be on the lawn across from the facility or indoors in the case of bad weather.

Restrooms: Unfortunately, our facility does not have a restroom. We will use the public restroom facilities at the Maritime Museum Building OR Ghirardelli Square at the beginning of the program and again after lunch. Our staff will facilitate this.

The Trip Checklist

Upon receiving your contract:

____ Contact all participating adults. You will need one adult for each of your four groups plus an optional Historian (photographer) and the teacher—a total of six adults max. Please ensure the adults know that their participation is for **SAFETY ONLY and that they will not be placed in the same group as their child. Adult chaperones will help on the water and the docks with rowing.**

_____**Begin** to discuss and plan transportation needs. If driving, request parking passes via email. We need to know the number of vehicles.

_____ If you have students with special needs that may require consideration, don't hesitate to contact the Education Director at (415) 561-6662 Ext 5 to discuss an appropriate action plan. We want every student to have a positive, worthwhile experience, and knowing about any accommodations in advance helps us immensely.

___ Review your funding needs. Funds may be available through parents, the PTA, student fundraising efforts, community service organizations, business or corporate grants, or the Maritime Park Association's Financial Aid Fund. A scholarship application can be found on our website, maritime.org/education.

FULL PAYMENT DUE 30 DAYS BEFORE THE PROGRAM DATE: Checks only.

One month before your trip:

_____ Send the required paperwork home with the students.

_____ Implement pre-trip lesson plans (optional).

Two weeks prior to your trip:

_____ Collect the medical forms and liability release forms. (at the end of this manual)

____ Secure transportation and parking plans (see parking details below).

One week prior to your trip:

____Divide students into 4 groups of approximately equal size and select (or have students select) a group leader (Mate) for each.

____Review with your students:

- appropriate clothing (long pants, closed shoes and a jacket)
- behavioral expectations onboard the ship and on the pier

____Email the Education Director education@maritime.org with a final count of students and adults attending

_____ Finalize travel plans:

- Set departure time from school to reflect your location, time to navigate San Francisco city traffic, and time to park upon arrival.

24 Hours to Go:

___ If inclement weather is expected, ensure students have proper rain gear and check in with the Education Director.

On the day of:

____ Be sure all participants have their lunch. Buying lunch is NOT an option for students or adults, and adults may not leave during the program.

When you arrive:

_____ Drop off students at the Sea Scout Base-3500 Van Ness Ave. Vehicles should immediately park in designated spaces, Permits will be handed out upon arrival. Buses can unload along Van Ness at North Point Street and then will need to park at Fort Mason.

_____ Other parking arrangements are nearby; we recommend checking SpotAngels for local Garages if you prefer this over street parking. San Francisco Maritime National Park will not accept any responsibility for vandalism, parking tickets, or towing charges. **For further advice, call us!!**

_____ The teacher must check in with our staff upon arrival. While checking in, we will escort the students to the restrooms.

Upon arrival, students and tall sailors should line up in their four crew lines in the grassy area directly in front of the facility. Please ensure your group sticks together.

The teacher should bring the following:

- **Emergency Medical Forms - Students and Adults.**
- **Liability Release Forms –Students and Adults.**

SFMNPA Programs Parking Instructions-SF

Updated 7/07/2025

Teacher: Please pick up parking permits from our staff no earlier than 30 minutes before your program start time. Vehicles can park while the Teacher can check-in and receive permits from our staff at the Sea Scout Base located at. 3500 Van Ness Ave.

EIGHT HANG TAGS AVAILABLE – Please email in advance how many you need.

ALL VEHICLES:

PARK at the end of Van Ness Ave. Ensure the sign reads, "Reserved Parking NPS Employees and Volunteers only."



The left side of the street as you go down toward the water on Van Ness.

***Drivers, please note:

1. Stay with the vehicles and send the Teacher to check in and collect permits.
2. Do not leave anything valuable or visible in the vehicles. We are not responsible for theft or break-ins, which are on the rise!
3. Once permits are in place, all groups will meet at the Sea Scout Base.

- **After the program, have one driver collect ALL permits and return them** to our staff.

Map for reference:

NPS PERMITTED PARKING – Van Ness Avenue

BUSSES: Drop OFF Students at the corner of:

VAN NESS AND NORTH POINT STREET

NO TURN AROUND PAST THIS POINT!!!

BUSSES Park Lower Fort Mason Center – No permit or fees required.

SAN FRANCISCO MARITIME
NATIONAL PARK ASSOCIATION

Student Medical Information: REQUIRED

PLEASE PRINT Please read and complete this form.

Date of participation _____School/Organization_____

Participant's name _____ Age ____

Date of birth: Month _____ Day _____Year

Address: _____

City:_____State/Zip:_____/_____

Phone Number: _____

_____
One other phone number where the parent might be reached

Name of Family Physician _____Phone _____

Does your child have any physical or medical conditions or restrictions___YES ___NO

If so, please describe: _____
_____

Is your child taking medication that may need to be administered during the program?

Please List them: _____

_____

Signature of Parent or Guardian **Date**

Forma Para Emergencia Medico
Para Estudiantes

POR FAVOR IMPRIME

Por favor lea y complete los dos lados de esta forma para todos los participantes. La firma de los padres/guardianes se requiere atras.

Yo/nosotros los padres ó guardianes del participante nombrado abajo deseamos registrar a mi/nuestro hijo en el Programa Marina la historia de Gold Rush el cual incluye una noche donde los estudiantes dormir n en el barco C. A. Thayer ó la Balclutha en el muelle de la calle Hyde Street. Fechas atendiendo_____

Nombre del participante (apellido) (primero) Telefono Fecha de nacimiento

_____

Dirección Ciudad Estado Código

_____

Nombre de los padres/guardianes Empleado por Telefono

En caso de emergencia por favor notifican a:

_____

Nombre Dirección Ciudad Estado Código Telefono

Otro numero de telefono donde podremos conseguir a los padres:

_____

Nombre Dirección Ciudad Estado Código Telefono

_____

Nombre del doctor de la familia

INFORMACION DE SALUD DEL PARTICIPANTE

1. ¿Tiene su hijo/a algun condición ó restrición fisico? _____
   SI NO

Si contesta que si, por favor describe:

_____

_____

Firma de los padres ó guardianes legales

Adult Chaperone Medical Form and Participation Agreement

Name: _____

Address (street, city, state): _____

Age _____ Date of birth: Month _____ Day _____ Year _____

Home phone (___) _____

Partner, Spouse or closest relative to contact in case of an emergency:

Name _____

Address _____

Home phone (___) _____ Work number (___) _____

Alternative person to contact in case of an emergency:

Name _____ Relationship _____

Telephone (___) _____ Telephone (___) _____

Name of physician: _____ Telephone: _____

Do you have medical insurance? If so, what is the medical group name and group insurance number? Insurance name _____ I.D. #_____

Do you have any physical or medical conditions or restrictions? YES. NO

If so, please indicate the nature and extent of the condition insofar as it might affect the program.

_____

Do you have allergies? YES NO

If yes, please specify: _____

_____

Do you take prescribed medication regularly? YES NO

If yes, please specify: _____

_____

_____

_____

PLEASE SIGN - Please complete one form for both students and adults.

SAN FRANCISCO MARITIME NATIONAL PARK ASSOCIATION
PARTICIPATION AGREEMENT, ASSUMPTION OF RISK, AND LIABILITY WAIVER

All participants in the San Francisco Maritime National Park Association's activity programs (the "Association") must agree to the provisions below. These programs may include boating and other potentially hazardous activities, all of which are at the sole risk of participants.

In consideration of my or my child's participation in Association programs, now or in the future, I agree on behalf of myself and my child to assume all risks of accident, injury (including death), or illness arising out of or in connection with participation in those programs. I further agree on behalf of myself and my child to forever waive and release all claims and causes of action against the Association (including its officers, trustees, employees, and agents) and the National Park Service, a Bureau of the U.S. Department of the Interior (including its officers, employees, and agents), for any and all liabilities for injury (including death), illness, or damages arising out of or in connection with participation in those programs. This assumption of risk and liability waiver shall bind the members of the Participant's family and the Participant's heirs, personal representatives, and assigns.

I understand that this is the sole and exclusive agreement with the Association regarding the assumption of risk and liability waiver, that this agreement supersedes all prior or subsequent discussions, representations, or agreements about those subjects, and that this agreement may be modified or waived only by a writing signed by an officer of the Association that makes specific reference to this agreement.

Signature of Parent /Guardian _____Date: _____

Print Name of Participant_____

Signature of Participant (If over the age of 18)_____**Date:**_____

MEDIA RELEASE

For fundraising and public awareness, the San Francisco Maritime National Park Association uses photographs and videos of the program in action. These materials may be published in print or made available on our website, which is a vital part of our fundraising efforts. Your child's image may appear in photos or videos taken by the adult chaperones or our official photographers. We are sensitive to privacy issues, so the specific names of participants and their school addresses will not be disclosed.

I grant permission for my and my child's image to be used in print publications produced by either the San Francisco Maritime National Park Association or the San Francisco Maritime National Historical Park.

I grant permission for my and my child's image to be used in e-mail updates or the website produced by either the San Francisco Maritime National Park Association or the San Francisco Maritime National Historical Park.

Signature of Parent /Guardian _____Date: _____

Print Name of Participant_____

Signature of Participant **(If over the age of 18)**_____Date:_____

FIRMA REQUERIDA - Por favor, complete un formulario para estudiantes y adultos.

ASOCIACIÓN DEL PARQUE NACIONAL MARÍTIMO DE SAN FRANCISCO
ACUERDO DE PARTICIPACIÓN, ASUNCIÓN DE RIESGO Y EXONERACIÓN DE RESPONSABILIDAD

Todos los participantes en los programas de actividades de la Asociación del Parque Nacional Marítimo de San Francisco (la "Asociación") deben aceptar las disposiciones a continuación. Estos programas pueden incluir navegación y otras actividades potencialmente peligrosas, todas las cuales están bajo el único riesgo de los participantes.

En consideración a mi participación o la de mi hijo en los programas de la Asociación, ahora o en el futuro, acepto en nombre de mí mismo y de mi hijo asumir todos los riesgos de accidente, lesión (incluida la muerte) o enfermedad que surjan de o en conexión con la participación en esos programas. Además, acepto en nombre de mí mismo y de mi hijo renunciar y liberar para siempre todas las reclamaciones y causas de acción contra la Asociación (incluidos sus funcionarios, fideicomisarios, empleados y agentes) y el Servicio de Parques Nacionales, una Oficina del Departamento del Interior de EE. UU. (incluidos sus funcionarios, empleados y agentes), por cualquier y toda responsabilidad por lesión (incluida la muerte), enfermedad o daños que surjan de o en conexión con la participación en esos programas. Esta asunción de riesgo y exoneración de responsabilidad obligará a los miembros de la familia del Participante y a los herederos, representantes personales y cesionarios del Participante.
Entiendo que este es el único y exclusivo acuerdo con la Asociación respecto a la asunción de riesgo y la exoneración de responsabilidad, que este acuerdo reemplaza todas las discusiones, representaciones o acuerdos previos o posteriores sobre esos temas, y que este acuerdo solo puede ser modificado o renunciado mediante un escrito firmado por un funcionario de la Asociación que haga referencia específica a este acuerdo.

Firma del Padre/Tutor: _____ Fecha:_____

Nombre del Participante (en letra de imprenta):_____

Firma del Participante (si tiene más de 18 años): _____Fecha:_____

LIBERACIÓN DE MEDIOS

Para la recaudación de fondos y la conciencia pública, la Asociación del Parque Nacional Marítimo de San Francisco utiliza fotografías y videos del programa en acción. Estos materiales pueden ser publicados en formato impreso o estar disponibles en nuestro sitio web, lo cual es una parte vital de nuestros esfuerzos de recaudación de fondos. La imagen de su hijo puede aparecer en fotos o videos tomadas por los adultos acompañantes o nuestros fotógrafos oficiales. Somos sensibles a los problemas de privacidad, por lo que los nombres específicos de los participantes y las direcciones de sus escuelas no serán divulgados.

Concedo permiso para que la imagen de mi hijo y la mía sean utilizadas en publicaciones impresas producidas por la Asociación del Parque Nacional Marítimo de San Francisco o el Parque Nacional Histórico Marítimo de San Francisco.
Concedo permiso para que la imagen de mi hijo y la mía sean utilizadas en actualizaciones por correo electrónico o en el sitio web producidos por la Asociación del Parque Nacional Marítimo de San Francisco o el Parque Nacional Histórico Marítimo de San Francisco.

Firma del Padre/Tutor:_____ Fecha:_____

Nombre del Participante (en letra de imprenta):_____

Firma del Participante (si tiene más de 18 años): _____Fecha:_____