



Teacher Information and Guidelines

Inland Voyage

Pre-Visit Checklist

- **Please review the invoice.** Note the deposit due date; your deposit must be received by that date in order to hold your reservations. A purchase order will be accepted in lieu of a deposit.
- **Make sure you understand the cancellation policy.**
- **Make sure program balance is paid.**
- **Complete and return the Student Assessment Sheet.** Fax, email, or mail the Student Assessment Form a few days prior to your voyage.
- **Complete and return the Inland Voyage Parking and Set-up Form.** Fax, email, or mail the Inland Voyage Parking and Set-up Form a few days prior to your voyage.
- **Notify MSI if there are any special needs** (e.g. students in wheelchairs or crutches).
- **Use pre-activities and background information.** This helps prepare your students for the visit and can be found on the MSI website www.sfbaymsi.org.

Inland Voyage (in school) Day-of Visit Checklist

- **School office is aware of where MSI will be setting up and the room/space is available.**

Post-Visit Checklist

- **Send in Thank You to Sponsors to MSI.** If artwork is involved this also enters the students into MSI's Translating the Tides Competition. See below for more details.
- **Use post-activities.** This helps solidify your students grasp of knowledge they gained on the voyage and can be found on the MSI website www.sfbaymsi.org.
- **Make sure program balance is paid.**
- **Book for next year.** We take bookings a year in advance, so book early if you want specific times of year or dates.

Program Logistics

Location Considerations

The Inland Voyage program is delivered to a school, library, camp, etc. by an MSI truck or van. If a Fish Inland Voyage is chosen, the vehicle will be pulling a trailer-mounted mobile aquarium. Since this unit is both transport and life support for the marine organisms, the programs may be presented outside or inside but needs to be accessible and close to the MSI vehicle. The space must be large enough to set up a two-station program for up to 30 students, and must be available for all presentations. This area can be grassy or paved, and shade is required to keep

the animals healthy. If shade cannot be provided, please notify MSI staff before the program so that accommodations can be made. If an indoor space is used, it should be accessible without using stairs, have tables, and preferably a non-carpeted floor (the space may get wet). If the area is separated from recess activities or other traffic, the students will be more focused and attentive. Ultimately they will get more out of the experience if these factors are considered. One class can experience more than one program option on a given day, but due to vehicle space and set-up needs we can only offer two program options per day to each school.

Program Length and Student Participation

Each presentation is 50 minutes in length, and allows one class of up to 30 students to participate at a time. Up to five presentations may be scheduled in a day (schedule allowing). The instructors will give a five to ten minute introduction, and then the class will be divided into two groups. To expedite this transition, we ask that the class be divided in half prior to our arrival. Each group participates in two stations, rotating in the middle of the program. The program will wrap up with a brief five-minute closing discussion. We schedule a ten-minute window between programs, which enables staff to set-up for the next program and is essential to the well-being of the animals. Please have your students wear name tags for this program.

Weather and Clothing Considerations

If cold or rainy weather is forecasted, please plan on providing an indoor space for the programs.

Snack and Lunch

Because of the short duration of the presentations, there is no time for snack or lunches to be scheduled during the presentation. When scheduling your Inland Voyage program, please schedule around recesses and lunches.

RESTRICTION: For the animal's safety, no hand sanitizer or food near the animals.

Sponsor Acknowledgement and Translating the Tides

Translating the Tides is a creative contest run by the Marine Science Institute (MSI) for students in grades kindergarten through college who participate in MSI's hands-on marine science education programs. Translating the Tides is a wonderful opportunity for students to express, in their own voices and styles, what they have learned and what they want others to know about our aquatic environments. All submissions count as sponsor acknowledgement. Winning entries are selected and may be published on the MSI web site, in our newsletter BayLines, on our monthly desktop calendar and other promotional materials.

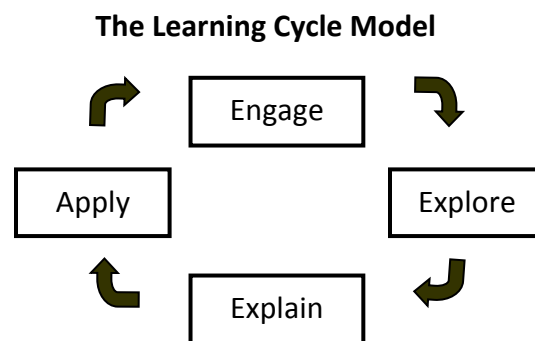
Role of Assisting Adults

In order to keep program costs at a minimum, we require the participation of at least one classroom teacher or adult. Each group of students will be working with one instructor and any available adults. At each station, the groups will break into smaller groups to study individual organisms. Our method of teaching is to ask thought-provoking questions that will lead students to their own answers. We ask that adults do not provide answers to the students, but let them discover the answers on their own.

Student Assessment and Learning Cycle

Since 1970, MSI has tailored science activities to meet the needs of teachers' curriculum. Students and teachers present themselves to our programs with a wide range of interdisciplinary science understandings and skills. Our marine science educators are specially trained to teach all ages with interesting and innovative methods that encourage interaction and problem solving. We encourage you to tailor your program by telling us about a particular theme that your class has been studying. Please fill out the Student Assessment Sheet you received to let us know.

MSI has modified our working educational philosophy to respond to this broad range and to help teachers and students get the most from our programs. What you do before, during, and after the day of the program will determine to a very large extent how strong a partner MSI will be in helping you meet your learning objectives. As you plan a visit to MSI, please consider how this opportunity fits within your overall instructional objective. What learning outcomes do you desire from this experience? How well is the class positioned to move your desired outcomes toward a reality? Please use the following description of the learning cycle to assess your students.



Engage – Students are just beginning to generate interest in marine science.

“The MSI program will be the hook from which I launch my unit and introduce my class to the excitement of marine science. I’m willing to come into this trip a bit cold...my main objective is to generate curiosity and get the students raising questions.”

Explore – Students are ready to actively experience, form predictions, and make observations.

“My students are already hooked on marine science. I’m bringing them to the MSI program with basic understandings and tools... They know a bit about the Bay and are ready to actively explore it. My objectives are for my students to make observations and to collect and record data. I’d like to see them make informed predictions and to begin framing their own critical questions.”

Explain – Students have been developing understanding for some time, and are now ready to speak the language of marine science.

“By the time we participate in our MSI program my students will have conducted serious investigations of topics related to the San Francisco Bay. My objective is to see them using the

language of marine science... I'd like them to begin exploring important concepts and to comprehend and analyze other explanations."

Apply – Students have a mature understanding of marine science, perhaps including aspects that are far afield from the San Francisco Bay area, and now are ready to relate that knowledge to their own backyard.

"My group has a good handle on the major learning objectives I have set for marine science. MSI's program is going to provide new scenarios for them to consider and address. My objective is to see my students using and applying their new knowledge in a different context."

Inland Voyage Program Description

There are seven different and exciting Inland Voyage programs that the Marine Science Institute offers to schools and groups. Four of these programs focus on marine habitats: Rocky Intertidal, Sandy Beach, Kelp Forest, and Marshes and Mudflats. The three additional programs focus on groups of animals in or near the San Francisco Bay Estuary: Bay Fish, Bay and Ocean Invertebrates, and Marine Mammals. Activities for all of these programs are designed to be grade appropriate for Kindergarten to High School grade levels. The programs are all “hands-on” and discovery based, meaning that we give students the animals and equipment necessary to discover sensory or factual information about the animals and their habitats. Two instructors will guide the group through a fun-packed, fifty-minute exploration of these fascinating worlds. One class can experience more than one program option on a given day, but due to vehicle space and set-up needs we can only offer two program options per day to each school.

Rocky Intertidal Inland Voyage

Rocky Intertidal Program Objectives

1. To provide an exciting educational experience in the classroom.
2. To understand physical and behavioral adaptations of rocky intertidal animals in their unique environment.
3. To gain an understanding, appreciation, and respect for marine ecosystems, and understand the special responsibilities of humans in the natural world.

Rocky Intertidal Program Description

The Rocky Intertidal Inland Voyage program looks at how rocky intertidal animals along the Northern California Coast move, eat, and protect themselves. Students will handle live rocky intertidal fish and invertebrates, and be asked to infer relationships between the animals’ forms and functions. They will also learn about the process of tides, and how they affect the rocky intertidal habitat and the animals that live there.

Sandy Beach Inland Voyage

Sandy Beach Program Objectives

1. To provide an exciting educational experience in the classroom.
2. To understand the importance of the sandy beach community through an investigation of its animal inhabitants and human connections.
3. To gain an understanding, appreciation, and respect for marine ecosystems, and understand the special responsibilities of humans in the natural world.

Sandy Beach Program Description

The Sandy Beach Inland Voyage program investigates animals that live at the sandy beach, as well as the natural and manmade components of the wrackline. Students will handle live sandy beach fish and invertebrates, and be asked to infer relationships between the animals’ forms and functions. They will explore sea turtle artifacts, and discuss how some animals live above the sand while others may live below it.

Inspiring respect and stewardship for the marine environment through experiential learning

Kelp Forest Inland Voyage

Kelp Forest Program Objectives

1. To provide an exciting educational experience in the classroom.
2. To understand the importance of the kelp forest community through an investigation of its animal inhabitants and human connections.
3. To gain an understanding, appreciation, and respect for marine ecosystems, and understand the special responsibilities of humans in the natural world.

Kelp Forest Program Description

The Kelp Forest Inland Voyage program investigates animals in the kelp forest as well as human uses of kelp and human impacts kelp forests. Students will handle live kelp forest fish and invertebrates, and be asked to infer relationships between the animals' forms and functions. They will also explore kelp forest artifacts, and discuss how humans use kelp for food and other products.

Marshes and Mudflats Inland Voyage

Marshes and Mudflats Program Objectives

1. To provide an exciting educational experience in the classroom.
2. To understand the importance of the marsh and mudflat habitats through an investigation of its animal inhabitants and human impacts.
3. To gain an understanding, appreciation, and respect for marine ecosystems, and understand the special responsibilities of humans in the natural world.

Marshes and Mudflats Program Description

The Marshes and Mudflats Inland Voyage program investigates animals in both marsh and mudflat habitats. Students will handle live mudflat fish and invertebrates, and be asked to infer relationships between the animals' forms and functions. They will study bird specimens, investigating how foot and beak shape are related to diet and habitat.

Bay Fish Inland Voyage

Bay Fish Program Objectives

1. To provide an exciting educational experience in the classroom.
2. To introduce students to different species of fish that live in the unique San Francisco Bay habitat.
3. To gain an understanding, appreciation, and respect for marine ecosystems, and understand the special responsibilities of humans in the natural world.

Bay Fish Program Description

The Fish Inland Voyage program focuses on the fish species living in San Francisco Bay. Students will touch live fish, and be asked to infer relationships between the animals' forms and functions. Students will be given the equipment necessary to discover sensory and factual information about leopard sharks and fish collected from the San Francisco Bay Estuary.

Inspiring respect and stewardship for the marine environment through experiential learning

Bay and Ocean Invertebrates Inland Voyage

Bay and Ocean Invertebrates Program Objectives

1. To provide an exciting educational experience in the classroom.
2. To compare physical and behavioral adaptations of marine invertebrates in two different and unique environments.
3. To gain an understanding, appreciation, and respect for marine ecosystems, and understand the special responsibilities of humans in the natural world.

Bay and Ocean Invertebrates Program Description

The Invertebrates Inland Voyage program compares invertebrate communities living in the San Francisco Bay to those living along the Northern California coast. Students will touch live invertebrates from the bay and rocky intertidal, and be asked to infer relationships between the animals' forms and functions. They will study the differences and similarities between the adaptations, and relate it to the habitat the animals are from.

Marine Mammals Inland Voyage

Marine Mammals Program Objectives

1. To provide an exciting educational experience in the classroom.
2. To introduce students to different species of mammals and their unique adaptations.
3. To gain an understanding, appreciation, and respect for marine ecosystems, and understand the special responsibilities of humans in the natural world.

Marine Mammals Program Description

The Marine Mammals Inland Voyage program focuses on the characteristics and adaptations of marine mammals in local habitats. Students will study two groups of marine mammals: Pinnipeds (seals and sea lions) and Cetaceans (whales). They will view and touch mammal artifacts including whale bones, baleen, skulls, and more.