

**WELCOME TO THE TIDEPOOL EXPLORATION IN THE DANA POINT MARINE PROTECTED AREA PROGRAM**

We are pleased that you will be joining us for a *Tidepool Exploration* program! Your students will be embarking on a fun and fascinating exploration of the intertidal habitat and the biotic and abiotic components that define it. This is a field experience, and the program occurs in the Dana Point Marine Protected Area that is located just behind the Ocean Institute. We are proud to be able to offer your students this one-of-a-kind learning experience and are pleased that you will be joining us.

Please take a few moments to familiarize yourself with the materials we have included, and share them with other teachers and chaperones who will be joining you. These materials contain important information to prepare you, your chaperones, and your students for your visit. Make sure to link to the 'Required Forms' found just under this 'Prep Pack' link on the web site to find the required Acknowledgement of Risk and Waiver form.

If you have any questions before your program, please do not hesitate to contact our program director, Linda Blanchard at (949) 496-2274, extension 314. If you have questions on scheduling, please contact Alexis Honens at (949) 496-2274, extension 610.

Sincerely,  
Rick Baker  
Vice-President of Education

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## A. ADMINISTRATIVE CHECKLIST FOR PROGRAM

This preparation package contains information for the *Tidepool Exploration* program that takes place in the Dana Point Marine Protected Area. Please review the package carefully to ensure that you will be prepared for your program.

### ***Immediately upon receiving your program agreement...***

- Carefully review the Teacher Preparation Package
- Arrange your transportation
- Return your signed program agreement and deposit to the Ocean Institute in order to confirm your reservation

### ***Two months before your trip...***

- Confirm student and adult numbers with the Ocean Institute
- Arrange for parent chaperones—please limit the number to 2 adults for every 12 students

### ***One month before your trip...***

- Begin student preparation
- Copy and distribute Acknowledgement of Risk and Waiver to each student and adult participant

### ***Two weeks prior to the trip...***

- Mail program payment to the Ocean Institute—full payment must be received a minimum of 10 days before your program
- Collect Acknowledgement of Risk and Waiver from each participant
- Contact parents to remind them to sign and return the Acknowledgement of Risk and Waiver
- Contact the Ocean Institute with any changes in the number of participants. We cannot guarantee our ability to accommodate changes in numbers of students or adults within two weeks of your program date.

### ***One week prior to the trip...***

- Review behavioral expectations with students
- Distribute Student Clothing and Supply List
- Contact the Ocean Institute with any last minute questions or changes

### ***24 hours to go!!!...***

- Prepare nametags for students and adults

### ***When you arrive for your program...***

- Unload the bus in front of the Ocean Institute
- Check in at the Student Services building with a final head count and all Risk and Waiver forms
- If necessary, students may use the restroom facilities that are located within the teaching complex. Please do so quietly so as not to disturb other programs. Return to the front of the Student Services building to wait for our staff.

## B. DESCRIPTION OF PROGRAM

### **Tidepool Exploration**

This adventure into the Dana Point Marine Protected Area (MPA) explores the complex relationships between tidepool organisms and the harsh physical environment in which they live. Students measure physical factors, identify adaptations, and conduct population studies on hermit crabs, turban snails, and barnacles. Students learn to be “Good Tidepoolers” and practice low-impact exploration techniques.

The *Tidepool Exploration* program is conducted in the Dana Point MPA. The program you receive will depend on the tide and wave conditions for the day you are scheduled. This program uses the natural resources of the Dana Point MPA to teach about the intertidal habitat. The Dana Point MPA is a very special resource to be protected and enjoyed. The Ocean Institute has made a commitment to improve enforcement, research, and education in this fragile area.

Please make sure that your students have used the restroom before we start; there are no restrooms in the MPA. The Dana Point MPA is a boulder field with very uneven footing. The walk into the MPA is one quarter to one half a mile long. Make sure to emphasize to students and chaperones the need for sturdy, closed-toed, and high-traction shoes. Students or adults with unsafe shoes may not be able to participate. Shoes may get wet, but aqua shoes are not recommended because of thin soles. NO SANDALS are allowed. This program is conducted outside, and the weather at the beach may be very different than inland. Expect cooler temperatures and more wind. Long pants are recommended to protect legs in case of a fall and for kneeling on rocks.

Teach your students the Good Tidepooler Rules:

1. Never remove animals, shells, or rocks from the tidepools.
2. Never pick up animals...observe them where they are.
3. Don't pull animals off the rocks, or poke them with sticks.
4. Walk gently, taking care not to step on plants or animals.
5. Never turn over rocks.

Teach your student the safety rules:

1. Know which direction the tide is going.
2. Watch out for above average sets of waves.
3. Do not run or jump from rock to rock.
4. Wear sturdy, high-traction, and closed-toed footwear.
5. Stay with your group.

## C. LINKS TO CALIFORNIA CONTENT STANDARDS

### **Grade Four**

#### Life Sciences

- 2.b. Students know producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in the ecosystem.
- 3.a. Students know ecosystems can be characterized by their living and nonliving components.
- 3.b. Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.

#### Earth Sciences

- 5.c. Students know moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition).

### **Grade Five**

#### Investigation and Experimentation

- 6.a. Students will classify objects (e.g., rocks, plants, leaves) in accordance with appropriate criteria.
- 6.f. Students will select appropriate tools (e.g., thermometers, meter sticks, balances, and graduated cylinders) and make quantitative observations.
- 6.h. Students will draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

### **Grade Six**

#### Ecology (Life Sciences)

- 5.c. Students know populations of organisms can be categorized by the functions they serve in an ecosystem.
- 5.d. Students know different kinds of organisms may play similar ecological roles in similar biomes.
- 5.e. Students know the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.

#### Investigation and Experimentation

- 7.b. Students will select and use appropriate tools and technology to perform tests, collect data, and display data.

## D. ADMINISTRATIVE PREPARATION FOR PROGRAM

### ADMINISTRATIVE CONTACT

For questions regarding the *Tidepool Exploration* program, please contact:

Linda Blanchard, Director of Lab Programs and Volunteers  
Telephone Number: (949) 496-2274, extension 314  
E-mail: lblanchard@ocean-institute.org

For questions regarding scheduling, please contact:

Alexis Honens, Program Reservation Coordinator  
Telephone Number: (949) 496-2274, extension 610  
E-mail: ahonens@ocean-institute.org

### INTRODUCTION

Thank you for choosing the Ocean Institute as your field trip destination. We appreciate the time and effort it takes to prepare your students for their program, and we will do everything we can to make their experience as rewarding as possible.

**Please make sure that all of the participating teachers have a copy of these teacher materials.** The information contained here can help you find answers to your questions, develop your preparation timeline, and prepare both your students and chaperones. This packet also contains directions to the Ocean Institute as well as contact phone numbers—please call us at any time with any questions you may have about your field trip.

### TEACHER INFORMATION: BEFORE THE PROGRAM

You can do several things before you arrive to help make your program run as smoothly as possible:

- Review the program goals, station activities, and expected student behaviors with the students before you arrive. Have them complete the classroom activity, and make sure they have a clear understanding of the educational concepts they will explore during the program.
- Spend some time choosing and preparing your parent chaperones. Review the program goals, station activities, and expected student behaviors with them before you arrive. Make sure that they have a clear understanding of their role as a chaperone.
- Have a signed Acknowledgement of Risk and Waiver for each student and chaperone before boarding the bus.
- Notify the Ocean Institute staff of students with any special health or behavioral considerations.
- Send program payment to the Ocean Institute at least 10 days before the scheduled date of your field trip.

### TEACHER INFORMATION: DURING THE PROGRAM

Ocean Institute instructors are all well trained to work with students of different ages and abilities. Both you and the adult chaperones can help the instructors monitor student behavior and safety. There are several things that you can do to help facilitate the smooth running of your educational program:

- Work cooperatively with Ocean Institute instructors and your parent chaperones to manage students during the program.
- Work cooperatively with Ocean Institute instructors and your parent chaperones to solve student and chaperone management problems.

- Report any problems (including facilities and management) to the Ocean Institute staff as soon as possible.
- Spend a few minutes completing a program evaluation at the end of the program.

### **CHAPERONE INTRODUCTION AND INFORMATION**

Adult chaperones play a significant role in safety and the educational quality of the program. We request that you bring no more than 2 adults per 12 students. We ask your chaperones to help us in the following ways:

- Work cooperatively with Ocean Institute instructors and classroom teacher to enforce all safety rules.
- Work cooperatively with Ocean Institute instructors and classroom teacher to keep students on task at the stations.
- Guide students to different stations throughout the program.
- Act as a positive role model for the students by exhibiting enthusiasm for learning without answering questions directed at students.
- Wear the appropriate clothing for the field experience. They must have rubber-soled, closed-toe shoes. Anyone with inappropriate footwear will not be able to participate.

### **PAYMENT**

**Payment must be received 10 days before your program date.** Please mail a **single check** for the total amount of the program minus the deposit you have already paid. Please make checks payable to **Ocean Institute**.

### **FINAL COUNT**

Call the Ocean Institute two days before your program if the number of students or adults changes. When you arrive at the Ocean Institute for your program, you must have an accurate count of total students and adults participating in the program. If the number of participants listed on your Confirmation Form is not accurate, call the Ocean Institute immediately. **We cannot guarantee that changes in numbers of students or adults can be accommodated if requested within two weeks of your program date.**

### **STUDENT AID**

The Ocean Institute maintains a student aid fund for students who are unable to obtain sufficient funding to attend the program. Please call (949) 496-2274, extension 0 for more information and to receive the necessary forms for student aid.

### **TRANSPORTATION**

Student transportation should be arranged well in advance. **It is important that you arrive on time.** Please schedule yourself to arrive at least 15 minutes before your scheduled program start time. If you arrive late, your program time will be shortened.

Buses can unload in front of the Student Services building. After the students have unloaded, the drivers will be notified of where to park the buses and must retrieve an Ocean Institute Bus Parking Permit.

### **STUDENT BEHAVIORAL EXPECTATIONS**

Please take time to discuss the academic nature of their field experience with your students before arriving at the Ocean Institute. While at the Ocean Institute, we expect your students to follow the same behavioral rules you have in your classroom.

**STUDENT PREPARATION**

We have found that the more familiar the students are with program concepts and content before they arrive, the more they will benefit from and enjoy their experience. We have included a classroom activity to introduce important concepts to your students before they arrive for their program.

**FORM FOR THE *TIDEPOOL EXPLORATION* PROGRAM**

Please make sure to have all the completed forms with you upon arrival for your program.

**Acknowledgement of Risk and Waiver**

Each participant must have this form signed by a parent or guardian to participate in the *Tidepool Exploration* program. Please make sure that you have one signed form for each student and adult chaperone when you check in with the Ocean Institute staff in the Student Services building. This form is available under 'Required Forms' on the program web page.

**STUDENT CLOTHING AND SUPPLY LIST**

For safety reasons, students participating in the *Tidepool Exploration* program need to have and/or wear the following clothing. The weather is often cooler at the Ocean Institute than it is inland, so make sure your students are prepared. Due to the uneven footing, students and adults must be able to move unencumbered. They should have their hands free and not carry any bags.

- Jacket
- Hat
- Sunscreen (Please have students apply sunscreen **before** the program starts.)
- Rubber-soled, closed-toed shoes are **required**. Any student with inappropriate footwear will not be able to participate.

Optional Items:

- Money for the gift and book store

**LAURENA G. CHAMBERS GALLERY BOOK AND GIFT STORE**

*Chambers Gallery* Book and Gift Store is a fun and unique non-profit museum store open daily from 9:00 AM to 5:00 PM and definitely worth the visit. The revenue is directed toward lowering tuition for schools that participate in Ocean Institute programs.

To help accommodate all of the schools that would like to shop each day, please have one teacher from your school check-in with a store staff member before your students begin shopping.

There will be a limit on the number of students allowed to shop at one time and we encourage you to organize them so that they all have time to enjoy the shop. Please have one or two adults in the store to help supervise your students. We ask that all food, drink, and backpacks be left outside while they are shopping. Teachers receive a 15% discount in the shop if members of the Teachers Club and 10% normally.

Please remind your students that sales tax will be added to their items.

In order to ensure a positive experience, we recommend the following:

1. Plan sufficient time before or after your program to shop.
2. All purchases should be stowed safely away and out of sight for the program.
3. Please allow only 10-12 students in *Chambers Gallery* Book and Gift Store at a time. Remaining students should remain outside in a manner that does not interfere with traffic in and out of the building.

## DIRECTIONS TO THE OCEAN INSTITUTE

### The address of Ocean Institute:

24200 Dana Point Harbor Drive  
Dana Point, CA 92629  
(949) 496-2274

### Directions from Los Angeles:

- Travel south on Interstate 5
- Exit on the Pacific Coast Highway Exit
- Stay in the right lane of the exit ramp and go north on Pacific Coast Highway
- Turn left onto Dana Point Harbor Drive
- The road ends in the Ocean Institute parking lot

### Directions from San Diego:

- Travel north on Interstate 5
- Exit on the Beach Cities Exit
- Stay in the left lane of the ramp and go north on Pacific Coast Highway
- Turn left onto Dana Point Harbor Drive
- The road ends in the Ocean Institute parking lot

## E. PRE-TRIP ACTIVITY

### Science Processes

#### Introduction

Students locate and describe in their field notes an object in the classroom. They exchange field notes to identify the unknown objects. This will help them practice the science processes of observing, comparing, and communicating.

#### Materials

- Paper and pencils

#### Background

*Observing:* The scientific thinking process from which fundamental patterns of the world are constructed.

*Communicating:* The scientific thinking process that conveys ideas through social interchanges.

*Comparing:* The scientific thinking process that deals with concepts of similarities and differences.

#### Student Challenge

*You are scientists who have observed an unidentified organism during your field research. If you carefully describe it, other scientists will be able to identify the organism based on your field notes.*

#### Procedure

1. Choose an object in your classroom, and describe it in your field notes. Be as descriptive as you can without actually identifying it. You may also wish to sketch it.
2. When you have completed your field notes, swap your description with that of another scientist. Try to identify the unknown object based on their observations!

3. Were you able to identify the object that was described by another scientist? Were you surprised at the details you noticed about the object? Have you ever used these skills before in your science classes?