

WELCOME TO THE *BIG AL IN THE LAB* PROGRAM

Welcome to the Ocean Institute's *Big Al in the Lab* program! *Big Al* is a story that captures the interest and imagination of young readers. Big Al tries so hard to make friends with other fish in the sea in many different ways throughout the book. During this program, students determine which aspects of the book are fact and fiction by using aquariums and lab equipment to learn more about the animals that live in the ocean.

We have developed this innovative program to assist second and third grade teachers in meeting Language Arts and Science Content Standards through the attraction of popular children's literature and the excitement of live ocean animals. Your students will enjoy this delightful mix of science and children's fiction as they follow the adventures of Big Al as he tries to make friends in the sea.

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.

We are excited to present to you our *Big Al in the Lab* program and are pleased that you'll be joining us. 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 *Big AI in the Lab* program that takes place in the Ecology Learning Center. 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
- Read the book, *Big AI*, to your 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 Big AI in the Lab 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

Big AI, by Andrew Clements, tells the story of a lonely fish that is trying to make friends in the sea. Big AI tries to camouflage himself in seaweed, changes color to match the other fish, and buries himself in the sand, but he still cannot make any friends. When the other fish are caught in a net, Big AI comes to their rescue and saves them. He gets caught in the net himself and is saved when the fishermen return him to the sea, where all of his new fish friends were waiting for him. In this one-hour lab program, students will discern between fact and fiction as they use lab equipment and aquariums to compare and contrast literary characters with live organisms. In the story, Big AI camouflages himself to appear less threatening to other fish. Students will learn more about camouflage and other adaptations throughout the program. **Please read *Big AI* with your students before your program.**

Students will be divided into groups and rotate through four stations.

- **Discovery Pool Station**
Students observe and gently touch animals from the Discovery Pool. They explore the adaptations of these organisms, focusing on structure and function.
- **Jaw Station**
Students examine the jaw structures of various fish from different ocean habitats and try to identify their diet. Students determine what Big AI might eat based on the shape of his teeth.
- **Adaptation Station at the Wet Table**
Students use magnifying cameras to examine the mouth structures of live organisms and learn about their feeding adaptations.
- **Think Tank Station**
Students find an assigned animal in one of the Think Tanks. After determining in which habitat their animal can be found, they work as a team to create a simple picture graph.

C. LINKS TO CALIFORNIA CONTENT STANDARDS

Grade One

Science Standards

Life Sciences

- 2.a. Students know different plants and animals inhabit different kinds of environments and have external features that help them thrive in different kinds of environments.
- 2.d. Students know how to infer what animals eat from the shapes of their teeth.

English-Language Arts Standards

Reading Comprehension

Comprehension and Analysis of Grade-Level-Appropriate Text

- 2.2. Respond to *who, what, when, where, and how* questions.

Grade Two

Science Standards

Investigation and Experimentation

- 4.a. Make predictions based on observed patterns and not random guessing.
- 4.f. Use magnifiers or microscopes to observe and draw descriptions of small objects or small features of objects

English-Language Arts Standards

Reading Comprehension

Comprehension and Analysis of Grade-Level-Appropriate Text

- 2.6. Recognize cause-and-effect relationships in a text.

Grade Three

Science Standards

Life Sciences

- 3.a. Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.
- 3.b. Students know examples of diverse life forms in different environments, such as oceans, deserts, tundra, forests, grasslands, and wetlands.

English-Language Arts Standards

Reading Comprehension

Comprehension and Analysis of Grade-Level-Appropriate Text

- 2.6. Extract appropriate and significant information from the text, including problems and solutions.

D. ADMINISTRATIVE PREPARATION FOR PROGRAM

ADMINISTRATIVE CONTACT

For questions regarding the *Big AI in the Lab* 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. Read the book, *Big AI*, with your students, have them complete the classroom activities, 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.
- The rooms are crowded and noisy. Please make sure your chaperones know that the instructors need a certain amount of teaching space in order to distribute materials to students and effectively teach. Please ask your chaperones to turn off their cell phones and to not carry on conversations with each other that add additional noise.

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 classroom activities to introduce important concepts to your students before they arrive for their program. **In addition, please make sure that the students are familiar with the book, *Big Al*.**

FORM FOR THE *BIG AL IN THE LAB* 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 *Big Al in the Lab* 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 *Big Al in the Lab* 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.

- Jacket
- Rubber-soled, closed-toe shoes

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. BACKGROUND INFORMATION ON THE BOOK

Big Al, written by Andrew Clements and illustrated by Yoshi

Poor Big Al! He just wants to make friends. In the whole wide blue sea, you cannot find a nicer fish. But because Big Al is large and scary-looking, the little fish are afraid to get to know him. What can he do? He tries everything he can think of—from disguising himself with seaweed to burrowing under the ocean floor to look smaller. But something always goes wrong, and lonely Big Al wonders if he will ever have a single friend. Then one frightening day, when fishing net captures the other fish, Big Al gets the chance to prove what a wonderful friend he can be!

About the Author:

Andrew Clements has this to say about his time as a teacher: "...I loved reading good books with kids—the kids at school and also the four boys my wife and I had at home. As a teacher, it was a thrill to read a book aloud, and see a whole class listen so carefully to every word, dying to know what would happen next. And I was amazed at the wonderful discussions a good book can spark. Good books make good things happen in real life. They can make a big difference. So when I was given the chance to start writing for children, I jumped at it."

F. PRE-TRIP ACTIVITIES

Stories about Snails



Have you ever seen a snail in your garden? There are also snails that live in the ocean, moving around on rocks close to shore. Snails grow their own shells and can hide inside their shells for protection. Snails have one large foot that they use to move, and they have rough, bumpy tongues called radula that they use to feed. Snails like to eat seaweed and algae off the rocks using their sandpaper-like tongue. Have you ever had a cat lick you? This is what a snail's radula would feel like.

1. Snails live in gardens and in the _____.
 2. Snails _____ their own shells.
 3. Snails have rough, bumpy tongues called _____.
 4. Snails like to eat _____ and _____.
-

Do you make noise sometimes when you chew your food? Snails make noise too. Scientists can listen to the sounds snails make underwater. Scientists can put microphones in the water and listen to snails as they eat. Snails use their tongues, their radulas, to scrape algae and seaweed off rocks—when they eat, they sound just like you do when you bite into a crunchy apple!

1. Snails make _____ when they eat.
2. Scientists can _____ to the sounds snails make.
3. Snails use their tongues, their _____, to eat algae.



Hooray for the Sea Star!

Have you ever been to the beach? Have you ever played in a tidepool? Many animals live in tidepools. Sea stars can often be found in tidepools. Sea stars are very interesting animals. They have many arms—some sea stars have five arms, and some sea stars have twenty! They have little tiny eyes on the ends of each arm—imagine if you had eyes on the tips of your fingers! If a sea star loses an arm, it can grow another arm! This is called regeneration.



1. Many animals live in _____.
 2. _____ can often be found in tidepools.
 3. Sea stars have _____ on the ends of each arm.
 4. If a sea star loses an arm, it can grow another arm. This is called _____.
-



How do you eat a peanut butter and jelly sandwich? The sea star eats its food in a very strange way. The sea star moves on top of its dinner, opens its mouth, and sticks its stomach out of its body! The stomach holds on to the food, and the food is digested outside of the sea star's body. When the sea star's stomach is finished eating, the stomach goes back inside its body and the sea star crawls away. Could you imagine how funny it would be if every night at dinner your stomach came out through your mouth and ate your dinner for you?

1. The sea star _____ its food in a very strange way.
2. The sea star sticks its _____ outside of its body!
3. The food is digested _____ of the sea star's body.
4. When the sea star is finished eating, the stomach goes back _____.

Big AI Comprehension Questions

After reading *Big AI*, answer the following questions!

1. What kind of animal is Big AI? _____

2. Why is Big AI sad and lonely? _____

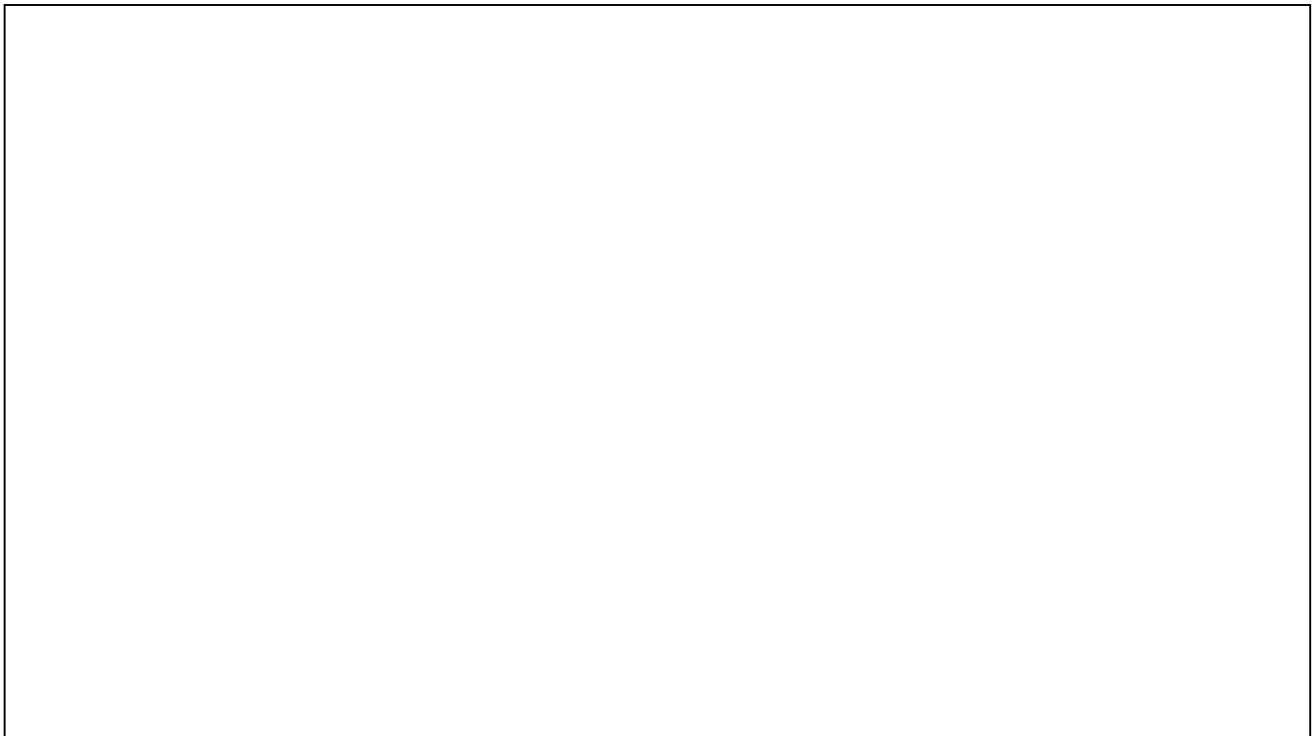
3. Why are the other fish afraid of Big AI? _____

4. What are some of the ways that Big AI disguises himself? _____

5. What happens to make the other fish trust Big AI? _____

6. Why do you think the fishermen threw Big AI back into the ocean? _____

Draw a picture of Big AI:



Do you like to play hide and seek? There are a lot of animals that live in the ocean that also are very good at hiding. When an animal disguises itself or blends in with its background, this is called camouflage. Some marine animals, like the octopus, can change colors to match their habitat. Could you imagine how much fun it would be if you could change colors when you wanted to hide? The octopus does not have any bones in its body and is able to squeeze into very small places. An octopus has eight arms, and its mouth is located in the center of all of its arms. It has a beak in its mouth instead of teeth, just like a parrot! The octopus likes to eat crabs and small fish, and is often found hiding among rocks on the sea floor.



1. When an animal blends in with its background, this is called _____.
 2. Some animals, like the _____, can change colors to match its habitat.
 3. An octopus has _____ arms.
 4. The octopus likes to eat _____ and small _____.
-



Many animals that live in the ocean use camouflage to hide themselves. Some animals, like the cabezon fish, are the same colors as their habitat so that they are difficult to see. The cabezon is brown and dark green or red, and he matches with the color of the rocky ocean floor and the kelp forests. The cabezon is so good at hiding that you probably would not even see him! The cabezon does not move around very much because he is easy to see when he swims out in the open—he likes to remain hidden among the kelp and rocks at the bottom. The cabezon likes to eat shrimp, crabs, and small fish. Some people think that the cabezon is very ugly, but his color and appearance actually help him to hide from predators.

1. Some animals, like the _____, are the same colors as their habitats so that they are difficult to see.
2. The cabezon is brown and _____ or _____.
3. The cabezon likes to eat _____, _____, and _____.

Camouflage Hidden Picture: Can you find all the animals hidden in the picture?



- Hermit Crab
- Sea Snail
- Moray Eel

- Crab
- Octopus
- Kelp