

# OCEAN ADVENTURES WITH MSI

## Tokay, Lodi High students reflect on Marine Science Institute trip

SPECIAL TO THE CURRENT

In fall, 2019, the City of Lodi Watershed Education Program organized study trips for five Lodi schools. Students were able to attend a Marine Science Institute Discovery Voyage to the San Francisco Bay, and also visited either the Aquarium of the Bay or the Academy of Science in San Francisco, depending on the trip.

Many sponsors helped make these trips possible, including the Lower Mokelumne River Partnership (East Bay Municipal Utility District, U.S. Fish and Wildlife, and California Department of Fish and Wildlife), the C.A. Webster Foundation, Waste Management, and a GoFundMe consortium of private donors.

The students wrote and sent many “thank you” letters. Below are a few excerpts showing the importance of these trips to the students. Thank you, sponsors!

“Hello, this is one of the many students who went on past Wednesday’s amazing field trip! ... I am the kid who wore the T-Rex hat. I wanted to say thank you very much for the experience and the knowledge I was able to gather by going.

... on the boat I think the coolest thing I learned was not even the things that were taught but the things we could experience, hands on. Nothing super important, but things like how the fish felt and what they looked like, where we caught them, how we caught them, all that. While I did lean plenty



COURTESY PHOTOGRAPH

High school students pose for a photo on the dock with the Marine Science Institute's research vessel, the Robert G Brownlee, behind them.

from those aboard the boat, the most intriguing experiences were those that I could take part in myself, not just hear about.

Thank you once again for allowing us to take part in those two wonderful experiences. The ability to get out of a classroom and really focus and study science hands-on is not something anyone really get to do unless it is their profession, a very unique and undervalued opportunity!”

— *Ethan Fulton, Tokay High AP Environmental Science*

“Thank you for your generous donation that allowed my classmates and me to attend a trip with hands on learning. It was amazing to take everything we learned

from Storm Drain Detectors and apply it in a broader sense. We got to see the way our watershed works starting from the Mokelumne River out to San Francisco Bay and the ocean. It was really eye opening to be able to see it all myself, and how everything works rather than from solely in a classroom. Firsthand, we got to test water quality, and examine life forms and see all the ways each one of us is helping or hurting the ecosystem in the Bay, even from hours away. We examined tiny organisms like plankton and saw how they live, the many different types, and their role in the ocean. We also examined the mud, and fish. This trip was eye opening seeing the effect every per-

son has in our California watersheds and even the worlds’ oceans and that we can contribute to helping preserve our watershed and world.”

— *Savanna Berry, Lodi High Biology*

“I learned so much on this breathtaking trip. I learned about plankton and how they are drifters, including some crabs and even microscopic plankton. I learned how to pet a fish from head to tail, not from tail to head — otherwise you will remove the scales. Thank you so much for the experience of a lifetime, catching fish, learning about phytoplankton and realizing how much we need to protect the environment. I wish you would carry on these trips for future

students as it is a great experience that everybody ... needs”.

— *Seth Cunha, Tokay High AP Environmental Science*

“... during the boat rotations, I was surprised to learn the amount of non-native species in the San Francisco Bay. It gets one thinking about the amount of invasive species in environments around us that we don’t even realize are invasive, and are choking out native species. Also, I found several different species of plankton in the bay very interesting as well. I didn’t realize the wide range of species there are in just a small amount of water.”

— *Kali Anema, Tokay High AP Environmental Science*

“Thank you so much for paying for our trip. The entire class learned so much about marine life. Once the class got to San Francisco, we visited the Aquarium of the Bay. We learned about the marine life of the Bay, such as sharks, invertebrates, and fish. After that, we stopped to eat lunch and explored Pier 39. We then got back on the bus and traveled to a dock where we boarded the boat (in Richmond). While on the boat we learned about plankton, hydrology, invertebrates, and ichthyology. My group caught two rays and three fish in the ichthyology station. Because of your sponsorship, we got a day to be immersed in biology.”

— *Maggie Fugate, Lodi High Biology*

## All about my trip to the Marine Science Institute

By Brian Torres

HERITAGE ELEMENTARY

The day we went on the MSI research vessel, it was cold and windy. The boat shook at the beginning, then it calmed down.

We went to all four study stations. There was a station where we saw plankton. I saw the plankton by first using a contraption to catch them. We used a microscope to see the tiny plankton.

There was also a station where we touched sea creatures, and caught some too. We caught them by tossing a big net into the bay from the back of the boat. One of the creatures that I touched was a stingray. I felt kinda nervous and it felt slimy.

Also, we studied the water at a station called hydrology. We checked temperature and density. We also put mud on our faces from the bottom of the bay, and made a promise to never harm a sea creature.

The best part was that



COURTESY PHOTOGRAPH

Brian Torres and his mother pose for a photo in front of the Robert G. Brownlee research vessel that his class got to sail on during a field trip to the Marine Science Institute.

my mom came with me on the trip. One thing my mom liked about the trip was that she was in the middle of the bay on a boat for her first time, and

she thought it was amazing! Another thing she liked was that she could help the teacher with the kids.

One thing my mom

learned on the trip was the temperature and density of the water. My mom liked that there were no problems and everything went well!

## California native fish: the hitch

By Charlie Starr

LODI HIGH SCHOOL

The hitch is a minnow that is native to some Northern California lakes and streams. One of those streams happens to be the Mokelumne River.

The hitch is usually 2 to 3 inches long, but can grow much larger. When I was out on the Mokelumne River checking screw traps with East Bay MUD, we caught a hitch that was 6 inches long! Along with the one huge hitch, we caught another five smaller 2- to 3-inch hitch.

One fact about the hitch is that they grow at different speeds and to different sizes depending on the body of water they are living in. This may be attributed to different water conditions in different areas.

All in all, hitch are some pretty cool little fish.

## Littering endangers birds and other animals in the food chain

By Max Hernandez-Velasquez

HERITAGE ELEMENTARY SCHOOL

Hello residents of Lodi, this is an important message brought to you by Dr. Hernandez:

“I am here to inform you about the dangers of littering, and how dangerous it is to our environment, the animals, to us, and to our watershed especially.

“First of all, due to extensive research, and of course technology, we can confirm that if people keep throwing bad stuff on the soil it can kill the nutrients the soil has. Then, it won’t be able to support plants, nor would we be able to harvest the food that people and animals need. Something else we can confirm is that it’s really harmful to many animals that are native, and non-native. For example, let’s say an endangered bird species happens to live near your house and you just litter near the nest of the bird. The bird can eat, swallow, or even chew on something that it is not supposed to eat. The population of

that species could rapidly decrease ‘til it’s died out and there will be no more. And, if that animal dies out, it then could kill the whole food chain it’s in. Then, it could hurt the other food chains that depend on its food chain. Then the food web could get hurt, and if the food web dies and animals that pollinate couldn’t help the plants, the plants die, too.

“And this is something all scientists can agree on. It can destroy humanity drastically because, back to the animals. If they die, then our food source dies. So if the animals die, we follow right behind them. And if there is too much trash and litter, it can also affect global warming. It can also be bad for our health, because if germs, diseases, and bacteria build up it could create illnesses that could be fatal for the human body. Not only that, but it will make the water we depend on contaminated. And those are some details that show littering could really affect Lodi’s ecosystem and environment. So keep on cleaning Lodi, so it can be here for generations to come!”

## Exploring with MSI in San Francisco Bay

By Brittany Delgado Lopez

HERITAGE ELEMENTARY

The Marine Science Institute is a wonderful place to visit, because you get to go on a huge boat and see the beautiful view. On the boat, which is named the Robert G Brownlee, students get to know the leaders who will take them to the stations, and students get to learn a lot of stuff that they probably didn’t know about.

One station is the Plankton Station. Plankton are drifting aquatic plants and animals. At that station students collect water from the bay, put the water in a test tube, and then use a microscope to see what type of plankton are in the water.

Another station that students visit is the Hydrology Station. Hydrology is the study of water. At that station students throw a bottle into the bay to collect water to test. Students test the temperature and the amount of salt, or salinity, in the water.

A third station to go to

is the Ichthyology Station. Ichthyology is the study of fish. At that station students work together with their team and their leader to throw a big net into the bay and then bring it back onto the boat. Everyone hopes to catch fish and other sea creatures. Once the net is back on the boat, students study everything that has been caught.

The last station is called the benthic station. At the benthic station students work together to scoop mud from the bottom of the bay. Then students study the creatures that live in the mud on the bottom of the bay. At the end, students put the mud on their face and promise to save the animals.

My class had so much fun and learned so much when we were on the MSI field trip. It was my first time getting on a boat, and it was very fun. Our boat was very nice, big, and cool. It was very exciting to get to do science experiments on the boat. I will never forget the experience that I had.

### MARINE SCIENCE INSTITUTE AT A GLANCE

The Marine Science Institute was founded in 1970 with the goal of educating local students about the environment of the Sacramento-San Joaquin River Delta and the San Francisco Bay. The non-profit organization has the goal of building children’s curiosity about nature and teaching them to be good stewards by putting them in direct contact with the Bay and Delta environments.

The institute offers a number of programs aimed at students from kindergarten through college, including Marine Camp, which ranges from a day camp to a multi-day expedition depending on student grade level; school programs focused on exploring wetlands, beaches and lagoons, the Robert G. Brownlee Discovery Voyage and the MSI’s ocean lab and aquarium; and a number of family programs.

For more information, visit [www.sfbaymsi.org](http://www.sfbaymsi.org).

— Source: The Marine Science Institute