

I swallowed a Swordfish!

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Since September 2011, more than 250 students have had the opportunity to examine the micro world thanks to GEMS. Many of them had never used a microscope. I am constantly surprised to find that students are never taught to use a microscope. This program was to allow students both in the classroom and on seagoing vessels, the opportunity to examine the world of marine plankton. We live in a coastal area so most students have visited the ocean before but none of them were ready for the surprise they got when they realized all the “little stuff” that ends up in their ears, hair, mouth and nose when they get out of the water! The title of the program, “I Swallowed a Swordfish!” was meant to help them see that.

The objectives were to:

1. Define plankton
2. Talk about the different types of plankton
3. Explain that plankton is necessary for our survival on earth
4. Explain that many of the species we are familiar with, have a planktonic life stage
5. Discuss the complex life cycles that many marine organisms have
6. Observe plankton samples
7. Identify plankton (to the Class level) using illustrated keys and draw them
8. Observe that even though students may have never seen these planktic organisms before, they can recognize “life” by its organizational structure

More than 80 students spent 3 days aboard the CeeRay, a 78’ dive boat. The students were AP environmental science students. They were getting their open water certifications and learning about the ocean in a very “hands in” program. Students used secchi disks, plankton nets, water chemistry test kits, microscopes, underwater slates, tape measures, calipers, and quadrats to design and carry out their own research projects underwater. The students are taught scientific diving techniques in the unique class. Part of the program includes the plankton lab where we collect plankton, concentrate the sample and then go through the objectives (listed above). Students are always “surprised” to see “life” under the microscope.

On our last trip on December 8-11, 2011. Students were very disappointed in our plankton tow. Specimens were very limited. We discussed that the visibility was spectacular for diving and how that was because of the limited plankton that day. An hour later, the currents changed during our dive, the students were pointing and screaming through their regulators as they actually saw the plankton floating in with the current! As we ascended from the dive, we were treated with ctenophores and salps floating by as we saw the masses of “little things” floating in

front of our eyes. Once on the deck of the boat, it was a race to grab the plankton net to be the first students to get a fresh sample of the newly arrived plankton soup.

In addition to the scuba trips, another 175 students were treated to the “I Swallowed a Swordfish!” program in their classroom. These students were given a PowerPoint presentation to introduce the concepts and objectives of the program then plankton samples, that had been collected that morning, were distributed to allow the students to observe and identify. We also played a game called “Who’s your Daddy” that flashed pictures of 10 different planktonic life stages of common organisms such as the zoea of the crab and the trocophore of the clam. There were prizes distributed for the winners that guessed the most number of organisms correct. This program is fantastic at opening up a whole world of possibilities for students who were bored with simply looking at an onion cell under the microscope. They now know that the calamari steak they had for dinner in that fancy restaurant was once contained in a single drop of water and looked completely different. They now know that healthy oceans are important and they have a connection to the smallest organisms in it.