

# Bay Area Scientists in Schools Lesson Plan

**Lesson Name:** Under the Sea: The life aquatic with Anna

**Developed by:** Anna Merzlyak

**Grade Level:** 3rd

**Standard Connection(s):** Grade 3 Life Science: Adaptation in physical Structure or behavior can improve an organism's chance for survival.

## Vocabulary Definitions:

- Adaptation
- Environment
- Coral reef
- Characteristics

## Materials

### *Volunteer Brings:*

- Slides of colorful fish and coral reef
- Markers
  
- Fish silhouettes (cut out shapes)
- Glue sticks ( a few)
- Glitter

### *Classroom Needs:*

- Projector
- Scissors
- Work space for kids

**Set-Up Requirements:** No special requirements

## Introduce and Engage

*Making personal connections, engaging curiosity, building connections to kids' experiences*

**Personal Introduction:** *What do you do for work, hobbies, play? Why are you interested in this topic?*

I am right now a student at Berkeley, working on getting my PhD in Bioengineering. Before I started school last August I went on a long trip to Asia and Australia. I learned how to scuba dive and saw beautiful fish and coral reefs under the sea. I also went to the Great Barrier Reef in Australia (the home of Nemo). I would like to teach the kids about this topic so that they think about how fish are used to and adapted to their home at the reef, and in the ocean and how we should keep it clean and safe for them.



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**Building Connections to Kids' Experiences:** *Can you think of an experience most kids would have related to your topic? Is there something to show that will grab their attention? Or can you pose a mystery with a question about something they see every day?*

Have any of the kids gone snorkeling? Or see Finding Nemo? We will learn about the home where Nemo and his friends lived and how the fish adapt to the environment where they live in and make it their home.

### **Learning Experiences**

*Any combination of demonstrations, hands-on activities, and pictures that helps kids explore new ideas. Describe specific experiences in the order you plan, including instructions you need to give students. What kids will see, do, hear, touch, taste or make.*

I will show pictures of several kind of fish and ocean life (Parrot fish, Clown Fish, Sharks, Sea Cucumber, Coral, Jelly Fish, etc )

**Parrot Fish** have hard beaks, which allow them to eat the coral but they want the algae that's growing on the coral,

**Clown Fish** rub on **anemone** to build up their protection against the sting of anemone, and clown fish attack the **shrimp** and other small fish that want to eat the anemone plant

**Shark** has a lighter underbelly, and darker back, so that looking up at the water surface which is lighter it is less visible, and looking down to the ocean floor, which is darker it is also less visible

**Sea Cucumber** feeds on the bottom of the ocean, cleans up the ocean floor like a vacuum cleaner

**Coral** algae plant grows on coral, and through photosynthesis, supplies coral with oxygen, while coral in return provides carbon dioxide back to algae. The fish like eating algae, coral eats organic debris and little fish...

After we look at the pictures of fish and discuss some of their characteristics, and why they are necessary, the kids will decorate their own fish.

I will pass out paper cutouts of fish. The kids will have markers, glitter and scissors available. The kids will then work to decorate their own fish keeping in mind how they would like the fish to be adapted to the ocean, and where in the ocean the fish would live.

## Sharing Experiences & Building Ideas

What kids will share about experiences and how to help them interpret experiences to build ideas and vocabulary.

### **Invitation to Share and or Discussion Questions:**

After the kids decorate their own fish, they will share with the rest of the class, why they chose the specific decorations, where their fish would live in the ocean, and how the coloring/shape of the fish would help it adapt to its surroundings.

### **Summary and Closing Ideas:**

In conclusion I will talk to the kids about some of the dangers that the coral reefs are facing, and how we can all help to keep the ocean clean by not littering and recycling

## Follow-Up Activities

Ideas for follow-up activities, your favorite kid books, things to notice

Ask Teacher and kids to write a letter about what they learned. Include drawings!

A follow up activity can include making an ocean collage on a bulletin board. The kids can cover the bulletin board with blue paper to make an ocean, and then put up some ocean plants, and coral reef pictures. Then the kids can put up the fish that they made during our class in the environment where they belong.

### **Reading Connections:**

- Oceans by Johanna Rizzo – This large-format book features *National Geographic's* trademark photography. Although its text is too advanced for most elementary readers, the pictures will entice them to stretch their skills. That makes this book appropriate for a classroom center or library. <http://www.nsta.org/recommends/ViewProduct.aspx?ProductID=20350>
- Project Seahorse by Pamela S. Turner – This detailed narrative shows scientists off an island in the Philippines who work to help the dwindling numbers of seahorses and to protect their coral reef ecosystem. Scientist Amanda Vincent learns to work with local experts, cooperating to develop new ways to maintain the species and regulate the harvest. In working with the local fishing community to protect this fragile ecosystem, a way of life is also being preserved. <http://www.nsta.org/recommends/ViewProduct.aspx?ProductID=20620>