Lesson 5. Discovering Philippine Coral Reef Ecosystems

Subject: Science, Social Science

Target Audience: Grade 6-8, 9-12

Brief Background:
Coral reefs have often been referred to as the "rainforests of the ocean." They are very important to mankind for many reasons. They provide shelter and food for marine organisms, which in turn feed millions of people worldwide. Fishing communities rely heavily on their resources for their livelihoods. Coral reefs also protect coasts from strong currents and high waves, and they control carbon dioxide in the water that could be dangerous to marine life at high levels.
The Philippines is home to five percent of the total global area of coral reefs. They have been described as a breathtaking explosion of colors and vitality. To Filipino fishermen and their families, this is part of their home and their life. To divers, it is an awe-inspiring and moving experience.

Objectives:
- Students learn about the corals.
- Students understand coral reefs as an ecosystem.

Standards:
Common Core State Standards (CCSS)
- English Language Arts
- Science and Technical Subjects

Materials Needed:
None

Keywords:
Corals, Coral reefs, Polyps

Procedure:

1. What are coral reefs? Are they vegetables? Animals? Minerals? What have students heard about them?

2. Students read the paragraphs on corals and discuss what they are.

Corals are responsible for building coral reefs. **Coral reefs** are underwater structures made of limestone or calcium carbonate. They provide homes and living space for the hundreds of thousands, if not millions, of animals that live in coral reef ecosystems.

Corals are strange little creatures. Many people think they are plants because they are stuck to the seabed. In fact, famous scholars in the late 1600's described them as "stone plants" because they resemble rocks. They are hard and solid, but it was not until the 1730's that the scientific community accepted them as animals.

Corals are actually made up of millions of colonies of tiny animals called **polyps**. They belong in the phylum cnidaria (nahy-dair-ee-uh) just like jellyfish. Coral polyps mate by releasing eggs and sperm into the water. When an egg and a sperm meet, a larva known as planula soon forms.

The baby coral looks like a tiny jellyfish. It floats around in the water searching for a hard surface to land. It usually ends up in a coral reef where it attaches. Once it is securely attached, the coral starts building a limestone shell around its body. This shell is shaped like a round vase. At night when it is ready to feed, it sticks its tentacles out of the shell and let them sway with the current. The coral polyp stings plankton that are floating by with their tentacles and brings them into the shell.

3. Students learn more about coral reefs by exploring Tubbataha Reef, Apo Island, and Cebu and Bohol Islands found on the "I AM A STUDENT" webpage. Have them play the games to get them acquainted with the Philippines' marine life.

4. In the virtual activity, Tubattaha Memory Game, students sharpen their memories by matching the fishes of Tubbataha National Marine Park.

5. Students listen and practice the local names of the fishes in the Cebuano Language in the Apo Island "Say My Name Activity."

6. The Cebu Island and Bohol Island jigsaw puzzles help students cultivate persistence and patience while learning about the marine environment of the Central Visayas.

7. Students then describe how they felt after looking at the coral reefs. What interests them about these reefs and the marine organisms living in them?

Assessment:

Students conduct research on the Great Barrier Reefs, Tubbataha Coral Reefs, and the Red Sea Coral Reefs. Have them fill in the data retrieval chart below with their research. What are the differences and similarities between these coral reefs?

Coral Reef	Great Barrier Reefs	Tubbataha Coral Reefs	Red Sea Coral Reefs
Where is it located?			

What is the climate in this area?			
How big is this reef?			
Why is this reef important?			