



Preserving Our Coral Reef: Teams of Success

Quick Guide Grade 2

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Our home, the blue earth is 71% water; 95% is in our oceans! The ocean is a model, like the symphony orchestra, of working together for balance and beauty. One of the most important places in the ocean is the coral reef; coral reefs are the rainforests of the ocean. Coral reefs support over 25% of all marine life on earth! Without the coral reefs, every form of marine life on earth is threatened with loss of habitat, food, and even extinction.

People, as they write their life stories, can learn from nature and from the arts the ways they can work together successfully, lifting each other up into their best selves, while preserving and respecting the earth for all life.

Vocabulary for Young Scientists, Engineers, Technologists, Artists and Mathematicians

Threatened: Number of individuals in the species is becoming dangerously low

Endangered: The number of individuals is on the brink of extinction; there are few to mate and loss of any one is critical to survival

Extinct: There are no more living individuals of a species

Animal: Species that can move from place to place, must find food to eat, has multiple cells that are encased in membrane

Plant: Species that cannot move from place to place, can make its own food, has cell walls, and can turn sunlight into food

Zooxanthellae: a type of algae that lives inside coral cells; the coral and zooxanthallae help each other to live; the zooxanthallae give coral its color

Polyps: the living portion of corals, extract calcium from seawater and combine it with carbon dioxide to construct the limestone skeletons that form the reef backbone

Ichthyologist: a person who studies fish

Important Plant and Animals of the Coral Reef

Stony Coral: the reef architects including staghorn, elkhorn and brain coral

Octocorals: the soft corals including sea fans and sea whips; they have many colors including green, orange, lilac, purple, yellow, or brown

Algae: help coral to live and provide food for many animals

Parrotfish: the reef cleaners; they eat algae and dead coral keeping the reef in balance

Butterfly fish: indicators of a healthy coral reef; they eat coral and help keep the reef in balance as they too are food for larger fish

Crabs: they eat worms, snails, and algae helping to keep the reef in balance

Jellyfish: provide safety for some smaller fish and are food for larger fish

Sharks: the apex predator; they eat sick or injured fish keeping the reef healthy



Who

Zooplankton: one of the smallest animals; food for many!

Coral: animals that form the coral reefs, home to 25% of earth's marine species

Zooxanthellae: the algae that helps to keep the coral healthy and give it its color

Crabs: help keep the coral reef clean by eating dead plants and animals

Turtles: help to keep the coral reef algae, sponges, and sea grass populations in balance

Sharks: Apex predator of the reef; they keep diseases from spreading by eating sick fish

Blue Whale: the largest animal to live on earth

All life needs balance to survive and to do its best. People too! As each of us writes our best life story, we can learn from the natural world around us, and from models of music, dance, and drama. All life does best when it works as a team!

The coral reef is a team of plants and animals, each depending upon the other for shelter and food. It is true that some become food for others; it is part of the way energy works in the coral reef team! But each is important and without anyone of the creatures that live in the reef, the reef is not complete. A dead coral reef cannot support life.

In the symphony, the instruments are nothing but piles of materials without the players. Happily, no musicians are eaten, but, the energy musicians use to play their instruments is passed from one to the other to make the music! Without anyone of them, the symphony is not complete.

The Florida coral reef is dying.

- ❖ Global warming and climate change is making the water too warm for coral
- ❖ Pollution is making the water too dark; coral need light
- ❖ CO2 levels are making the water to acidic for coral
- ❖ Overfishing is taking away the balance of fish in the coral reefs
- ❖ Turtles and mammals are killed in fishing nets and are too few to keep the balance of the coral reef
- ❖ Careless fishing that drags heavy objects kills the fragile coral
- ❖ Pollution from human activity near the water and from inland farms is making some algae grow too fast; it kills the algae needed for coral

Both the coral reef and the arts provide people with beauty and food—they create jobs and places where people can restore their spirits and help one another. Both can use our help. **What can we do?**

- Tell your family about what you learn when you go home from school and encourage everyone to take care of their garbage and to use reusable bags for grocery shopping and reusable drinking bottles for water
- Recycle
- Pick-up plastic bags if you see them on the beach and elsewhere
- Take care of fishing lines
- Try to organize so trips in the car are minimized to reduce emissions
- Conserve water
- Participate in beach cleanups

CPalm

SC.2.L.17.2

Recognize and explain that living things are found all over Earth, but each is only able to live in habitats that meet its basic needs

Big Idea: Interdependence

A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.

B. Both human activities and natural events can have major impacts on the environment.

C. Energy flows from the sun through producers to consumers.

SC.K2.CS-CS.2.3: Solve real life issues in science and engineering using computational thinking.

The Symphony

Strings: the most numerous and the distinctive feature instrument of the symphony. Violin, viola, cello, bass

Woodwinds: provide color : flute, oboe, clarinet, bassoon
Oboes and bassoons are double reed instruments

Brass: provide depth and power
Trumpet, trombone, French horn, tuba

Percussion: the most varied of the instrument families
Include piano, timpani, triangle, bells, snare drums, bass drums

Concertmaster or concertmistress: The principal violinist, enters next to last, guides tuning

Conductor: enters last, prepares the symphony in rehearsal and guides the symphony during the performance