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# Coral Reefs

## Literacy for Anywhere

Leveled Readers for the Developing World and Beyond!

### How to Use Literacy for Anywhere

This is a *Literacy for Anywhere* level 4 book. This text is designed for students in year one or grade one in school. Ideally, first grade students will be reading level one texts independently by the end of the year, second grade students will be reading level two texts, and so on. Of course, we realize that every student, classroom, and school is different, so the book level may not always correspond to the class or grade level.

If your school or library uses another system for leveling books, you can use the chart below to add *Literacy for Anywhere* books into the collection.

Levels are based on the following study: *Supplemental Information for Appendix A of the Common Core State Standards for English Language Arts and Literacy: New Research on Text Complexity*.

Literacy for Anywhere	U.S. Common Core Band	The Lexile Framework®	Flesch-Kincaid
Starter	Very basic books for those just starting!		
1	<2nd	<420	<1.98
2	2nd - 3rd	420 - 620	1.98 - 3.5
3	2nd - 3rd	620 - 820	3 - 5.3
4	4th - 5th	740 - 880	4.5 - 6.1
5	4th - 5th	850 - 1010	5.5 - 7.7

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# Coral Reefs

Level 4



A coral reef is like an underwater city. Coral reefs are full of many types of plants and animals. Sea turtles, jellyfish, sharks, and dolphins all live in coral reefs.

Even the coral are like buildings full of small animals called polyps. The polyps live together and work together to build the coral that is their home.



Polyps are very small. A single polyp is usually only a few millimeters in diameter and a few centimeters long. There are so many of them working together that they can make coral that is very big. Coral might look like a plant or rock, but really it's the home of many little animals.

Polyps have many tentacles surrounding a mouth. They use the tentacles to pull in food. A single polyp looks very different from a piece of coral.

Many polyps live in one piece of coral and work together to build it. All of the polyps in a piece of coral are identical. They are exactly the same, like twin brothers or sisters.





There are two main types of coral—hard corals and soft corals. Soft corals, like this sea pen, look more like plants but they are still polyps in little homes. Hard corals look like rocks and use minerals to build a hard skeleton.

Polyps need warm water to survive. The water needs to be between 16° - 30° Celsius for coral to grow. That is why most coral reefs are near the equator.

Polyps also need ocean currents to stay healthy. Currents bring food and nutrients in and wash away waste and dirt. Without currents, polyps and the animals that live near them would be choked by dirt and waste.



When polyps build enough coral, they make a reef. A reef has many different coral pieces, called “heads,” with many different types of polyps.

There are three types of reefs: fringing reefs, barrier reefs, and atolls. Most reefs are made of hard corals.



A fringing reef is attached to a shore or very near it. Sometimes there is shallow ocean between it and the land.

Barrier reefs are farther out. The main difference between a barrier reef and a fringing reef is the amount of ocean between it and the shore. The Great Barrier Reef in Australia is the largest in the world. It is so big that you can see it from space!

Atoll reefs are low coral islands that grow in rings around a lagoon. They aren't near land and don't have an island in the middle. It is a ring of coral all on its own.



Soon, other animals move to the coral reef. They eat the algae and each other. Even as they eat the algae, their waste helps it grow. All the animals and plants in coral reefs depend on each other. If you take one type away many others could die.

Nearby ecosystems also work together with coral reefs. Sea grass beds and mangrove forests provide places for fish to lay eggs and grow into adults before they move to the coral reef.

A coral reef is full of places for other animals to hide and find food. This is why so many animals live there. Almost 25% of ocean animals are found in coral reefs. Some people call coral reefs the “rainforests of the sea.”

Like most places on Earth, reefs get their energy from the Sun. Sunlight helps grow the algae that gives polyps energy. The polyps use the energy to build the reef.



Coral reefs usually have three major zones: the fore reef, the reef crest, and back reef. The back reef is closest to the shore or center. Next comes the reef crest, with the fore reef facing out into the ocean.

Coral reefs are very fragile because they are so sensitive to temperature and light. When these change too much, the algae die. Without algae, polyps cannot get enough food or oxygen. As polyps die, they turn white. Coral turning white is called bleaching. Corals can recover from this, but if it happens too much they will die.



Many animals depend on coral reefs, but so do people. If you have ever eaten fish from the ocean, it could be from a coral reef. Even some of the air you breathe is produced by algae living in reefs. Because coral is important, it is important to protect it.

Fishers live and work in coral reefs every day. For them, coral is even more important. They need the fish that live in them to support their families.

Because of this, there are many rules fishers follow to protect the reefs. Following these rules ensures there are enough fish in the future.

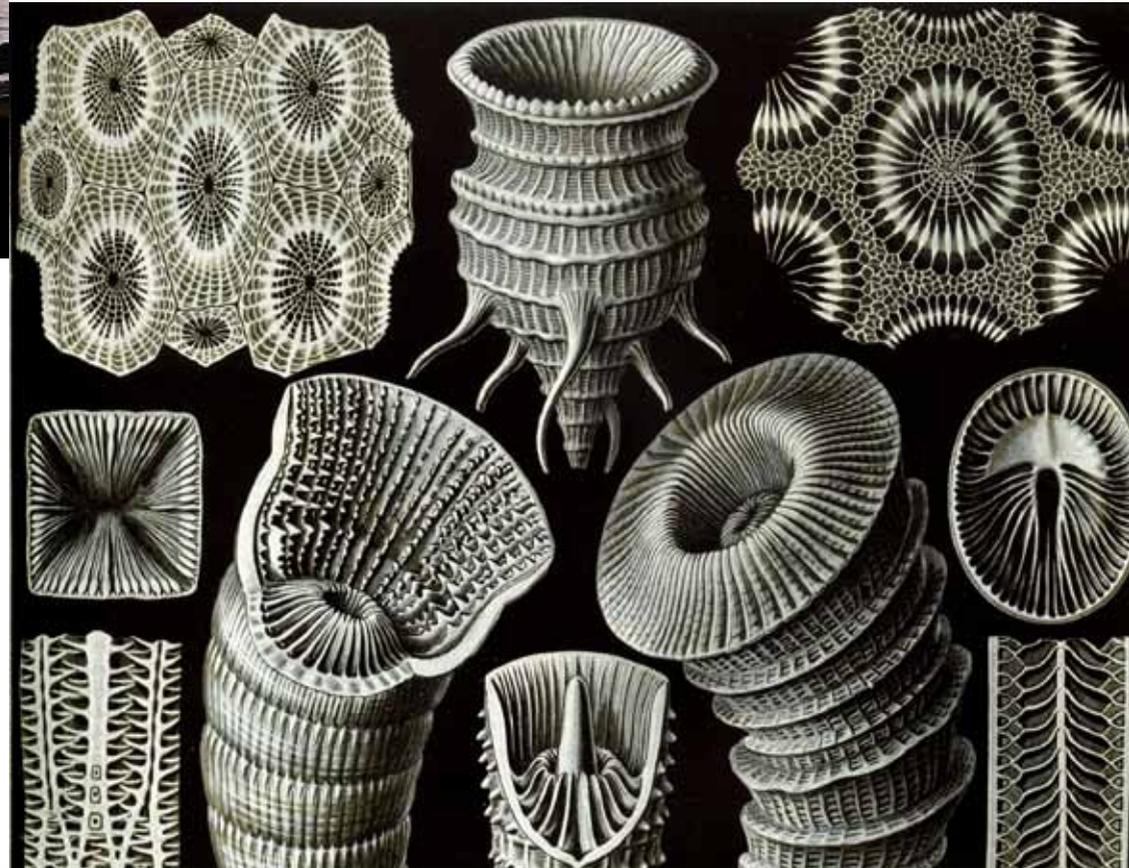


Fishers try not to catch animals they do not need. An animal caught accidentally is called bycatch. Birds, turtles, and dolphins can all be bycatch. If fishers are not careful they will kill them accidentally.

They must also be careful with the fish they do want. Some fish should only be caught if they are past a certain age. Others have to be a certain size. Some fish shouldn't be caught at all, and none should be caught while pregnant.

Breaking these rules can be very bad for the reefs. If too many fish die, both fishers and the other animals that depend on them could be in trouble.

Some animals might take hundreds of years to come back. Other animals may be gone forever. When an animal is gone forever, it is extinct. Rugosa coral went extinct long ago. Now we only have fossils to know what they looked like. If enough coral goes extinct we could run out of fish to eat.



Sometimes fishers don't follow the rules. They use dynamite to kill a lot of fish at once. This is not good for the ocean because it also creates a lot of bycatch. The dynamite kills many animals, but fishers only use a few. If too many animals die, the ones we eat could start to die too. Then, there would be no fish for the reefs or us.



Overfishing is also bad for coral reefs. Some fishers take too many of one kind of fish. Sharks and other big fish get overfished a lot. When fishers take too many sharks or aren't careful with how they catch the sharks, there aren't enough for the coral reef to stay healthy.

Invasive species can also cause problems. A species is called invasive when it moves in from somewhere else. It can cause a lot of damage because the other animals are not used to it. Lionfish is an invasive species in the Caribbean. Lionfish hurt the reef because they eat too many of the local animals.



Many people are worried because 60% of the world's coral reefs are dead or getting weak. This means that one day there may be no more fish to catch in the ocean.

Scientists say that in the next 50 years many of the Earth's coral reefs will be gone. This is because of pollution, sewage, erosion, overfishing, bad tourism practices, and climate change.



the coral reefs. This would protect about 500-700 reef fish species.

It is important to protect coral reefs because of the many ways they help us. Coral reefs do more than provide us fish to eat. They also remove carbon dioxide from the atmosphere, which helps keep the entire planet healthy. If a reef gets big and strong

Coral in the Caribbean Sea are having difficulty surviving. Coral in the Caribbean stretches all the way from Florida to South America and it faces the same threats as many other reefs.

Over the last thirty years, coral in the Caribbean has withstood a lot of damage. Many nations are trying to develop Marine Protected Areas to protect



enough, it can even protect land from bad weather. They absorb the impact from strong waves and storms before it gets to the animals and people on land. Without the reef, many plants and animals would die.



If chemicals or garbage are put in the wrong place, it could end up in the ocean. This is even true far away from the sea. Water is constantly moving towards the ocean and carrying chemicals and garbage with it. Plastic and chemicals can travel to the ocean in rivers and streams. When it gets to the ocean, it hurts the coral reefs and the animals in it.

What can you do to help save coral reefs? Dispose of waste properly. Don't pour chemicals down your drain or on the ground. Try to use less plastic, especially plastic bags and bottles. Pick up trash when you see it.

# Coral Reefs

## Review Questions!



1. What are polyps?
2. What does algae do for a coral reef?
3. How do coral reefs help humans?
4. How do humans hurt coral reefs?

# Coral Reefs

## Write A Story!



You are a baby fish in a coral reef for the first time. Swimming in the reef is like swimming through a giant city. You have to stay hidden from predators, but you are searching for new friends. Write about your adventure!

# Attributions

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