



# ZOOBIRANGER RECRUIT PROGRAM

## THE CORAL REEF

Earn your Coral Reef Badge!



**WELCOME, ZOOBIRANGER RECRUIT!**

**With this workbook in your backpack, you're on your way to becoming a Junior ZoobiRanger!**



**Learn about the Coral Reef and the Marine Habitat in which it lives.**

**To earn your badge, do the following:**

- Watch the Zoobitat Episode:**
  - Look for the one entitled "The Coral Reef."
- Complete this Workbook:**
  - Read the information and do your best to complete the exercises.
- Check your Work:**
  - Show an adult the answers you completed.
- Earn your Badge:**
  - At the end of the course, you'll find a Badge you can print out!

**LET'S BEGIN!**

# LEARN THE ZOOBIRANGER SALUTE!

As you've seen in the episode, Junior ZoobiRangers Jolly and Jordy do the ZoobiRanger Salute before going on an adventure. As a ZoobiRanger Recruit, you can learn it, too.

## SALUTE MEANING:

With the salute, we are honoring our commitment as ZoobiRangers to:

- be protectors of the planet and the creatures upon it.
- learn what we can about wildlife conservation.
- work together as a team to make the world a healthy home for all.

## HOW TO DO THE SALUTE:

First, learn the phrase that lets us all know you're ready for an adventure.

Can you say it out loud?

**"ZoobiRangers at the Ready!"**

Now, learn the hand actions! While standing tall, with your shoulders back, raise your right hand to your forehead, with a flat palm facing downward. Say the word, "ZoobiRangers," then salute your hand forward and outward, saying "at the ready!"

Then fold your arms, so they cross in front of you. Then lean to the side. Great work! Now try it all in one motion while saying the phrase aloud.

**"ZoobiRangers at the Ready!"**

**EXCELLENT! YOU'RE READY FOR ADVENTURE!**



## RIDE THE WAVES TO THE MARINE HABITAT!



Corals — and the Reefs they form — exist within the Marine Habitat. This means they are found within bodies of water that have a high-level of salt content, like within Oceans and Seas.

In fact, the word “Marine” comes from the Latin word, “Mare,” which means “Sea.” But the Marine Habitat is massive, about 70% of the planet’s entire surface! That’s why it’s helpful to divide the Marine Habitat into different categories. Below are the Four Main Marine Habitats:

### Mangrove

- The shrubs, small trees and plant-life that forms at the shoreline of oceans and seas. These zones are generally found in tropical or sub-tropical climates.

### Intertidal Zones

- The area of space between the high and low tide marks. This area tends to be covered by water or exposed to sunlight, depending on the tide’s movement.

### The Deep Sea

- The deepest regions of the Marine Habitat, with depths ranging from 700 meters to several miles. In these regions, little sunlight is found.



## Reefs

- Reefs are ancient ocean structures, generally found in shallow regions of the Marine Habitat. They are comprised of living Coral and the skeletons of deceased Coral and other organisms. Reefs form one of the most biologically diverse regions on the planet, serving as a home for thousands of different organisms.



The Marine Habitat can also be classified by the level of salt-content found in a given region's water. Another word for saltwater is "Saline Water." Here are three primary categories of Marine Habitat, according to their levels of "Salinity."

## Brackish

- This region's water is a mix of freshwater and saltwater. It's generally found where freshwater rivers run off into the saltwater ocean. Estuaries, Mangroves and Brackish Marshes are examples of this category.

## Sea

- This is the largest region of the Marine Habitat, comprising much of the Oceans and Seas. The salt levels in this region are generally 35 parts per thousand, which is quite salty. For this reason, we do not drink sea water.

## Inland Saline

- This is saltwater that can be found underground in certain inland areas of the world. Australia is known to have large reserves of this saline groundwater.

**Use the information above to answer the below questions.**

**1. What does the Latin word “Mare” mean?**

- A. Seahorse
- B. An abbreviation for Mary
- C. Sea
- D. Seal
- E. Banana Split Sundae

**2. Which of the following grow in the Mangrove area of a the Marine Habitat? Circle all the apply.**

- A. Palm trees
- B. Shrubs
- C. Deep-sea trenches
- D. Small trees
- E. Men

**3. Which part of the Marine Habitat is defined as being the area between low tide and high tide?**

- A. Mangrove
- B. Deep Sea
- C. Reef
- D. Intertidal Zone
- E. Tidy Area

**4. Reefs are made up of which of the following? Circle all that apply.**

- A. Coral
- B. Corn
- C. Coral Skeltons
- D. Ghosts
- E. Duct-tape



**5. What is another word for Saltwater?**

- A. Pepper Water
- B. Saline Water
- C. Spicy Water
- D. Vinegar
- E. Juice

**6. Draw a line connecting elements from Column A and their corresponding parts in Column B.**

COLUMN A	COLUMN B
BRACKISH	
	HIGHLY BIOLOGICALLY DIVERSE
REEF	
	SALTY GROUNDWATER
INLAND SALINE	
	LITTLE SUNLIGHT
DEEP SEA	
	PARTLY FRESHWATER AND SALTWATER



## GET COZY WITH SOME LIVING CORAL!



Did you know that Coral is an animal, not a plant?

This is surprising to some people. Why is it surprising, you ask? Well, many assume that Coral is a plant because it thrives by being “planted” into a hard surface, like the seafloor, or upon a rock. But Coral is technically classified as an animal.

You might ask, why is Coral classified as an animal, rather than a plant? Good question. And the answer is quite good, too!

Just like other animals, Corals eat and grow by capturing or gathering food from their surrounding environment and sweeping this food into their “mouths.” This process of capture/gather and ingestion results in the Coral gaining the nutrients it needs to grow and prosper.

Plants, on the other hand, generate the ingredients for their growth directly from within themselves. This plant process is known as “Photosynthesis.”



“Photosynthesis” is the process by which plants absorb the sun’s solar energy and convert it into the chemical energy they need to grow and thrive.

Okay, so we now know that Coral is an animal, but what exactly is Coral? What does it look like, and how can we recognize it?



### **What is Coral?**

Coral is an invertebrate animal that lives within the Marine Habitat.

The word “invertebrate” means “lacking in a backbone.”

Corals are generally found in groupings known as “colonies.” These colonies come in a variety of shapes and sizes.

Each Coral colony is made up of tiny, tentacle-like parts, known as “Coral Polyps.”

These tiny Polyps are in fact each their own small Coral animal, with the ability to sweep in food and ingest nutrients into their minuscule mouths.



## How do Coral Eat?

While some Coral manage to survive by sweeping plankton and small fish into their mouths, most Coral depend on a unique relationship with the Algae that lives around them.

This Algae, known as “Zooxanthellae,” supplies the Coral with the product of the Algae’s photosynthesis, in a relationship known as “Symbiosis.”

“Symbiosis” is a process of collaboration between two different organisms.

In the case of Algae and Coral, each organism gains some benefits by living in close proximity with the other. Corals provide a safe, elevated place for Algae to grow and eat from the Coral’s waste product.

In return, Corals benefit from Algae’s ability to clear Coral waste and supply the Coral with Oxygen. Coral’s also gain the products of the Algae’s photosynthesis, in the form of nutrients. The Corals then use these ingredients to make proteins, fats and carbohydrates.



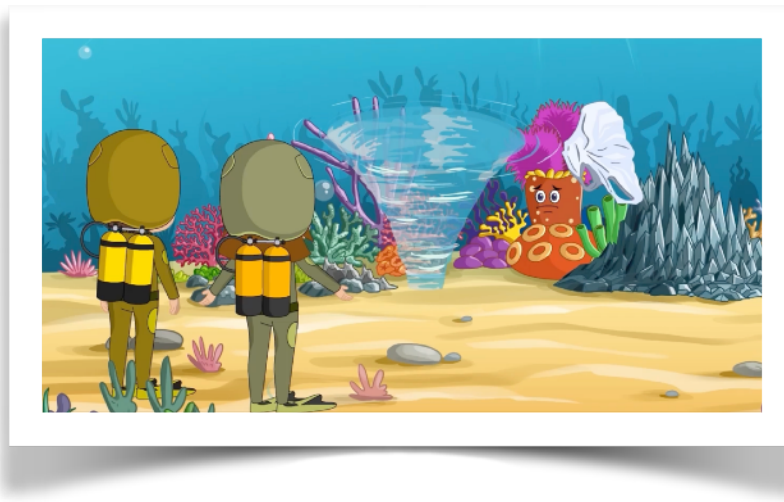
## What is a Coral Reef?

A Coral Reef is the structure that forms when, over a long period of time, colonies of Corals grow upon one another.

The current, living Coral generation grows and thrives on top of the skeletons of their ancestors. With each passing generation, the skeletons remain, forming a new foundation upon which new generations can exist.

This process of “Reef Building” is slow and gradual, taking many thousands of years to develop into the massive structures we see today.

The largest of these Coral Reef systems is in Australia — the Great Barrier Reef. It is 1,500 Miles long, and has taken roughly 1 million years to form!



## Coral Threat Status

Coral Reefs are facing high threat levels these days, due to rising ocean water temperatures and human-caused over-fishing and pollution.

With this increase in water temperature, some reefs are struggling through a process known as Coral Bleaching. This Bleaching causes the Coral to expel the Algae within its tissues, resulting in Coral losing its color.

Corals can survive a bleaching event, but it puts stress on their system. Since Coral Reefs serve as home for such a wide array of diverse marine species, it is imperative that we work to find solutions to these harm-causing events.

**Use the information above to answer the below questions.**

**7. How do we know that Coral is an animal, not a plant?**

- A. It told us
- B. It has sharp teeth
- C. It gathers food from its surrounding environment
- D. It has a bushy tail
- E. It likes to be pet

**8. What is Photosynthesis?**

- A. A social media platform
- B. A word that means plant lover
- C. The process of taking photos and sharing them with friends
- D. The process by which plants covert solar energy into chemical energy
- E. The process used by the sun to exude heat rays

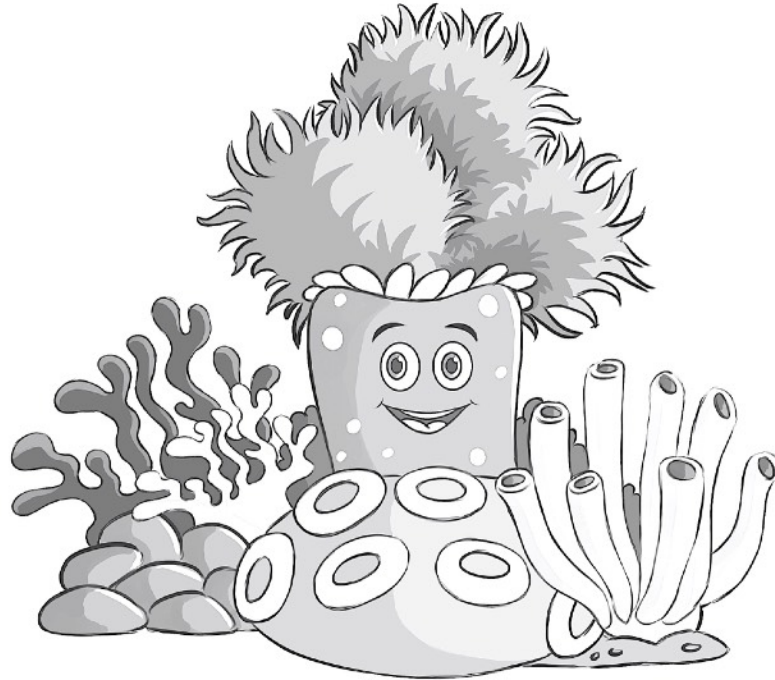
**9. What does the word “invertebrate” mean?**

- A. Boney
- B. Lacking in a backseat
- C. Lacking in backpacks
- D. Lacking in a backbone
- E. Lacking the answer to this question

**10. Circle all of the following that relate to the Algae that lives amongst Coral.**

- A. They're known as Zooxanthellae
- B. Their full name is Alan
- C. They work in symbiosis with Coral
- D. They clear the Coral's waste and supply nutrients
- E. They love Caribbean steel-drum music

11. Color in the below image of a Coral Reef. Can you make it match the sample picture from the episode?



## WHAT EPISODE ZOOBIFACTS DO YOU REMEMBER?

**12. Which Habitat do Jolly, Jordy and Lox visit in order to help Coral?**

- A. The Freshwater Habitat
- B. The Marine Habitat
- C. The Speed Boat Habitat
- D. No Habitat
- E. A Lake

**13. What tool did Jordy use to help him swim rapidly toward the Coral?**

- A. Fins
- B. Hands
- C. Diving Scooter
- D. Goggles
- E. Bathing suit

**14. Field ZoobiRanger Leila tells us about the partnership between Coral and the Algae that live with them. What is the partnership called?**

- A. Teamwork
- B. Synthesis
- C. Buddies
- D. Friendship
- E. Symbiosis

**15. What tool does Jordy mistakenly think the Diving Scooter is?**

- A. A Hammer
- B. A Wrench
- C. A Hairdryer
- D. A Leaf Blower
- E. Pizza



# HOW TO HELP CORAL REEFS!

**There are many ways to support threatened Coral Reefs.**

Firstly, you can do your part to keep their Habitats clean and free from harm. We can do this by reducing our waste in the environment.

Reduce, Reuse and Recycle!

We can also be sure to support companies that utilize methods to help to minimize pollution and support sustainable fishing practices.

Another great way to help is to look in your local area for volunteer opportunities. Ask the adult in your life how you can spend some time with a local zoo, animal sanctuary, wildlife club, or environmental group. There's always a way to lend a helping hand.

And most importantly, you can help by doing your part to be a protector of wildlife and our planet. Continue learning about the amazing creatures of Earth and the unique environments in which they live.



**You're on your way to becoming a  
Junior ZoobiRanger.**

**WE HOPE TO SEE YOU AGAIN SOON!**



# CONGRATULATIONS!!

**By completing this workbook, you have earned your  
Coral Reef Badge!**

Fill out the below info. and enjoy your badge!

Congratulations, ZoobiRanger Recruit \_\_\_\_\_  
(write your name here)

As of this date \_\_\_\_\_,  
(write today's date)

you have earned an official ZoobiRanger Coral Reef Badge.



Cut out the badge and put it on display!

**Earn your next badge with a new workbook at [www.zoobitat.com](http://www.zoobitat.com)**

## **ANSWER KEY:**

1. C
2. B, D
3. D
4. A, C
5. B
6. Brackish - Partly freshwater and saltwater  
Reef - Highly biologically diverse  
Inland Saline - Salty groundwater  
Deep Sea - Little sunlight
7. C
8. D
9. D
10. A, C, D
11. N/A
12. B
13. C
14. E
15. D