



CORAL REEF EXPLORERS

Ocean  
Research  
Journal



This Journal Belongs To: \_\_\_\_\_

## Introduction to Mission

- You and your team have been selected to be part of a team of elite deep sea divers on the ship, ***Coral Reef Explorer***.
- You will be exploring the oceans to learn about coral reef ecosystems. Each crew member will participate in all of the parts of the mission. These parts are listed at the right.
- You will need to keep a journal/notes of your notes, pictures and drawings, and answers to the questions and the investigations. You will then use your journal notes and present your findings in a PowerPoint slideshow and children's book .

When you complete all the parts of this mission you should be able to:

- **Describe coral reefs: what they are, their location, how they are built, their importance as an ecosystem and a resource.**
- **Identify organisms that live in and around coral reefs.**
- **Identify adaptations that help specific organisms survive.**
- **Describe problems that are currently impact the coral reefs.**

## Special Missions

1. Learning About Coral Reefs
2. Adaptations in the Coral Reefs
  3. Creatures of the Deep
  4. Coral Reefs in Danger
  5. Mystery in the Coral Reef
6. Mission Accomplished – Presenting Your Research

## Mission 1: Coral Reef Questions

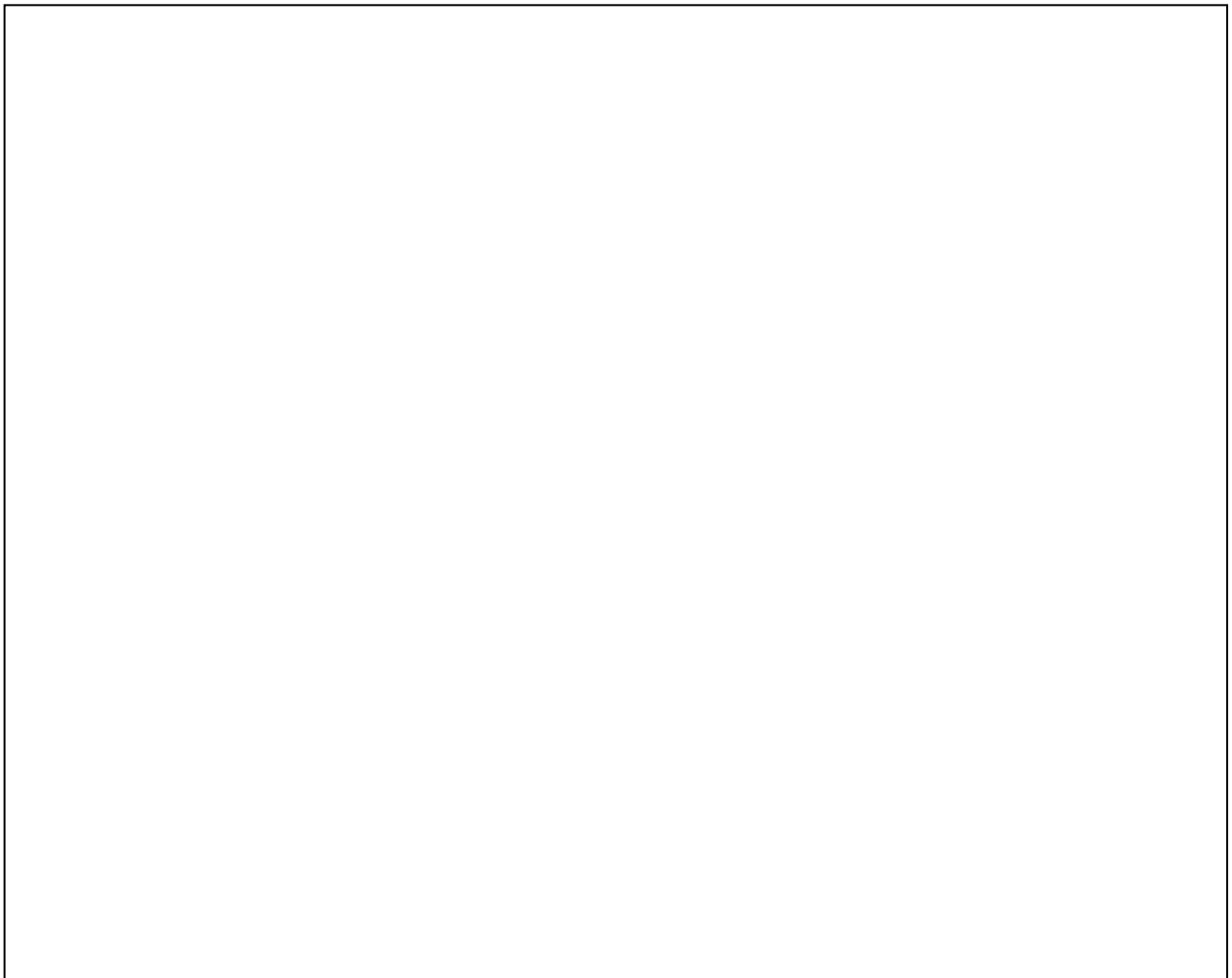
1. What are *coral reefs*?
2. How are coral reefs formed?
3. What type of animals live in coral reefs?
4. List/Describe 2 types of *corals*.
5. Where are coral reefs located? What parts of the world can they be found?
6. List 3 different types of coral reefs
7. What are the names of some plants that are located in coral reef ecosystems?
8. What are *zooxanthellae*? What do zooxanthellae provide for the coral?
9. What is *symbiosis*? Describe symbiosis in a coral reef ecosystem
10. Why are coral reefs important? List 3 reasons.

## Mission 2: Design an Organism

### Let's Get Creative!

Now that you know about various adaptations, you can design a new marine organism, a predator, or a prey. Give your organism specialized body parts or abilities that help it live in the coral reef. Create a model or a drawing of your organism.

**Name of Organism:** \_\_\_\_\_



**Describe the special adaptations:**



## Mission 3: Creatures of the Deep

Identify the 6 organisms in this mission

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

## Mission 3: Creatures of the Deep



### Researching An Organism

Each coral reef diver team member should pick one of the pictured organisms or one from the list of additional organisms.

Each team member should choose a **DIFFERENT** organism to research.

For the organism you have chosen, use the template below and:

- Draw or insert a picture.
- Write the name of the organism.
- Identify the group to which it belongs. (fish, mollusk, algae, crustacean, plant, reptile, etc.)
- List its diet and diagram its place in a food chain or web. (what it eats and what eats it)

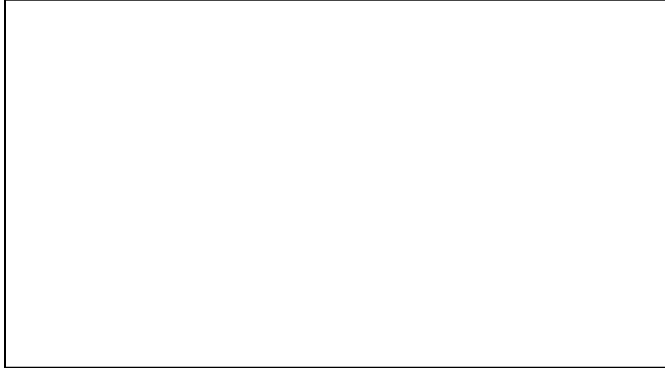
Describe how it is adapted to its environment. (examples: adaptations to catch prey or to hide, escape or protect itself; adaptations for movement; helpful relationship with another organism)

## Mission 3: Creatures of the Deep

### Organisms of the Coral Reef

Name of Organism:

Picture:



**Group** (fish, mollusk, crustacean, reptile, etc)

**Diet**

**Predators or Natural Enemies**

**Adaptations that help it survive** (specialized body parts, special abilities, etc.)

**Is it endangered or threatened?**

## Mission 4: Coral Reefs in Danger

Three coral reefs have been damaged and are in trouble! You and your team have been selected to be part of the crew on the ship, *Coral Reef Explorer*. You will be investigating these reefs to discover the cause of the reef damage.

- Coral Reef Mystery Questions Use the links in the presentation to help you find clues to identify the suspects (causes) in the cases.
- Write your clues and answers in your ocean journal. You will use your journal notes to create your presentation when you are finished with your detective work.
- Work with your team to identify each of the 9 suspects (problems) that endanger reef ecosystems. List all the suspects in your journal.
- Then you will try to determine which of these suspects are what caused the problems in case A, case B, and case C. Write your answers in your journal.
- Finally, you will describe possible solutions to stop or fix the damage.



## Mission 4: Coral Reefs in Danger

Identify the Suspects (Causes)  
below:



1. W - - - r P - - luti - n

\_\_\_\_\_

2. Sedi - - - - - n

\_\_\_\_\_

3. Coast - - D - v - l - - ment

\_\_\_\_\_

4. Careless D - v - - g and Sn - - - - ing

\_\_\_\_\_

5. B - at A n - h - - s

\_\_\_\_\_

6. Ov - - f - s - - g

\_\_\_\_\_

7. Fishing With Cy - - - d - or Ex - - - - v - s

\_\_\_\_\_

8. Global W - - - - - and C - r - l B - - a - - ing

\_\_\_\_\_

\_\_\_\_\_

9. Coll - - - - -g and S - - - - - g of C - - - l, F - sh, Sh - lls and Other Animals

\_\_\_\_\_

## Mission 5: Mystery in the Coral Reef



- Case A
- Identify the possible problem.
- What do you think happened to this coral reef?

Possible Cause:

What do you think happened to this coral reef?

## Mission 5: Mystery in the Coral Reef



- Case B
- Identify the possible problem.
- What do you think happened to this coral reef?

**Possible Cause:**

**What do you think happened to this coral reef?**

## Mission 5: Mystery in the Coral Reef



- Case C
- Identify the possible problem.
- What do you think happened to this coral reef?

**Possible Cause:**

**What do you think happened to this coral reef?**

## **Mission 6: Mission Accomplished**

### **Mastery Work**

Now your team has accomplished this mission (and learned a lot about coral reefs) you will present your findings in a series of reports.

Each student will work independently on the following projects:

- **Presentation 1: Coral Reef Organism**
- **Presentation 2: Threats to the Coral Reefs**
- **Presentation 3: Coral Reef Children's Story Book or Fact Book**
- **Game 1: Coral Reef Crossword Puzzle**
- **Game 2: Coral Reef Word Search**

# Presentation 1

**You need to present your findings on coral reef organisms and on the coral reef mysteries. When you complete this part of the mission you should be able to:**

Highlight your organism in a multimedia presentation.

- Presentation 1: My Coral Reef Organism (10-20 slides)
- You need to show the following in your slides or web page:
- A title slide or title section of the web page. This should include the title of the project and your name and class.
- The name of the organism and a picture. (If you use a picture from one of the links, list the site to give credit.
- Identify the group to which it belongs. (fish, mollusk, algae, crustacean, plant, reptile, etc.)
- Reproduction System: Describe how it reproduces
- List its diet and diagram its place in a food web. (what it eats and what eats it) You may use pictures (with labels) and arrows to show this or just type in the name of the organisms in a food web.
- Describe how it is adapted to its environment. (examples: adaptations to catch prey or to hide, escape or protect itself; adaptations for movement; helpful relationship with another organism)

## Presentation 2

Highlight one of the threats to coral reefs using one of the above programs. You may choose one of the "cases of reef damage" or one of the other suspects (causes). Describe how this threat damages reefs and give possible solutions.

### Presentation 2: Threats to Coral Reefs (5-10 slides)

You need to show the following in your slides or web page:

- A title slide or title section of the web page. This should include the title of the project and your name and classroom.
- Identify the threat or suspect and show a picture. (If you use a picture from one of the links, list the site to give credit.
- Describe how this threatens or damages the reef or reef organisms.
- Describe possible solutions to the problem.

## Presentation 3

Create a children's storybook or non-fiction book based on coral reefs.

- **Fiction:** You may be creative and think up a great underwater adventures or a story about one creature like *Sponge Bob*, *Finding Nemo*, or some other story as long as it takes place in a coral reef. It could even be about a class trip to a museum to see a coral reef. Just include lots of facts and details about coral reefs.
- **Non-Fiction:** You may want to create a small handbook of coral reef creatures, or a short book about the dangers to the coral reefs. This book will be full of facts and pictures.

Books will be created using online picture book making software.

During class, your teacher will show you how to use these programs.

## Games 1 and 2

Create a coral reef crossword puzzle and word search puzzle using online puzzle-making software.

- **Game 1: Coral Reef Crossword Puzzle**
- **Game 2: Coral Reef Word Search**

All Rubrics can be found in the Presentation