

OCEAN CLASSROOM

The Study of Corals

Types of Corals

EDUCATOR GUIDE

THE
UNIVERSITY
OF RHODE ISLAND
GRADUATE SCHOOL
OF OCEANOGRAPHY

Guiding Question

“What types of coral exist?”

Day 1

Time required: 45-minutes

Procedure: Divide students into groups of three or four. Have them read the informational essays on **Hard Coral** and **Soft Coral** aloud within their groups. Students are to highlight the important facts. Then, as a group, students are to fill in the Graphic Organizer (Part 1) with at least 10 facts.

Day 2

Time required: 45-minutes

Procedure: Divide students into groups of three or four. Have them read the **Both Types of Coral** informational essay aloud within their groups. Students are to highlight the important facts and then put them in the Graphic Organizer (Part 2). As a class, show as many videos as time allows and ask students to write down any additional facts. After the show, ask someone from each group to read aloud their most important fact. Go from group to group until class ends.

Guiding Question

“What types of coral exist?”

Day 3

Time required: 45-minutes

Procedure: Have the students sit in their groups and take out their Graphic Organizers (Parts 1 and 2). The students’ directions follow:

Group Game

Your group must use your Types of Coral Graphic Organizers to create a Class Relay Game! You will be given 10 index cards. On each card, write one detailed fact. Pick facts from both pages of the graphic organizer. Be sure to write neatly and clearly. Please proof-read your Fact Cards for errors.

Preparation for the Teacher

1. The teacher will collect and review the group Fact Cards, then make a copy of each one. Now there will be two piles of the same Fact Cards.
2. Glue RED (or other color) paper on the back of one set of cards, and do the same with the other set of cards using BLUE (or other color) paper.

Lastly, students go back to their groups and quiet down. They are to work on the sheet “Identifying the Types of Coral.”

Guiding Question

“What types of coral exist?”

Day 4

Time required: 45-minutes

Types of Coral Relay Game

Preparation

1. There will be two piles of the same Fact Cards one red and one blue.
2. Mark two starting lines in tape at the back of the classroom.
3. At the front of the classroom, place three chairs against the wall, each taped with one of the headings below.

Explain Rules to the Class

1. Each correct Fact Card is worth one point.
2. **But**, the teacher can take points away from a team for too much noise, starting ahead of the taped line, or for not crossing the tape line when you return to tap the next person.
3. The team with the most points wins the relay!

How to Play

1. Divide the class into two teams and each team must line up in single file behind the starting tape.
2. Place one pile of Fact Cards on the floor to the left of each team (Red and Blue teams)
3. When the teacher says “GO”, the first person in line must pick up the first Fact Card and read the fact aloud to his/her team.
4. Then, he/she must decide which chair the fact belongs on. (If he/she needs help, the student can quietly ask the team members for help.)

SOFT CORAL



Cut out these signs and tape them to chairs.

HARD CORAL



Cut out
this sign
and tape it to
a chair.



BOTH CORALS

Guiding Question

“What types of coral exist?”

Vocabulary Terms (for use any time)

Have the students make their own puzzles, flash cards, mazes, or games at:

- <https://puzzlemaker.discoveryeducation.com/>
 - <https://quizlet.com/latest> or <https://kahoot.com/>
- or
- <https://myvocabulary.com/word-games-puzzles/>

Answers

- **Ahermatypes** — Soft corals that look like plants or trees, and are cushiony and bendable. These corals don't have stony skeletons, instead they grow wood-like cores for support and thick outer skin for protection. Ahermatypes are non-reef building corals, and they do not always have zooxanthellae algae.
- **Brooding** — is considered sexual reproduction and occurs in coral when spawned sperm fertilises the eggs within the polyps of coral. After being internally fertilized, the larvae are then released into the water when they are well developed
- **Budding** — Corals reproduce asexually by budding or fragmentation. Through budding, new polyps “bud” off from parent polyps to form new colonies
- **Carnivore** — any organism that eats flesh, meat-eater
- **Coral bleaching** — an event that happens when corals lose their vibrant colors and turn white. Coral are colorful because of microscopic algae called zooxanthellae, but when coral get stressed from pollution or warm temperatures, they expel their algae and lose their color
- **Gonochoric** — In these species of coral, all of the polyps in one colony produce only sperm, and all of the polyps in another colony produce only eggs, hence they produce single-sex colonies
- **Hermatypes** — Hard corals which build reefs with their limestone skeletons. These coral usually have zooxanthellae, microscopic algae, in their tissue that help them survive.

Vocabulary Terms (continued)

Answers

- **Nematocysts** — stinging cells used to capture the food. These cells deliver toxins and are located in the coral polyp's tentacles and outer tissues.
- **Ocean acidification** — a chemical reaction that occurs in the ocean when there are increased levels of carbon dioxide in the Earth's atmosphere. The ocean's pH decreases and it becomes more acidic
- **Photosynthesis** — a chemical process by which plants, algae, and other organisms use sunlight, water, and carbon dioxide to create oxygen and energy in the form of sugar
- **Primary Producer** — plants, the base of the food chain and the foundation of an ecosystem. They create food for themselves and others through photosynthesis or chemosynthesis
- **Sclerites** — tiny, needle-like structures within many soft corals that help provide structural support for their soft tissues. These calcium carbonate structures can look like flowers, spines or plates, and are usually embedded in the outer layer of tissue around the polyp
- **Spawning** — a type of coral sexual reproduction that happens usually once a year when hard, stony coral from one species release their eggs and sperm all at the same time.
- **Symbiotic Relationship** — a mutual relationship between two organisms where both benefit, yet one can not live without the other
- **Zooxanthellae** — microscopic algae that have a symbiotic relationship with some corals. This single-celled, photosynthetic algae give stony coral their bright colors