

**Source:** Waikiki Aquarium Education Department, Waikiki Aquarium, Honolulu, Hawaii. Used with permission.

## 49. THE “CORAL REEF RACE FOR SURVIVAL” GAME

### Objectives:

1. To foster an understanding of the survival needs of corals in their natural habitat and some of the destructive influences of human behaviors.
2. To prompt discussion of coral conservation efforts.

### Materials:

1. Four “planula” badges (or headbands).
2. Enough “coral” badges (or headbands) to provide one for each student in the class.
3. Three copies of each of the two **planula survival cards** listing requirements for a planula (larva or young stage coral) to successfully settle on the bottom.
4. Three copies of each of the two **planula disaster cards** listing conditions in which planula can not settle.
5. Two copies of each of the four **reef survival cards** detailing coral survival needs.
6. One copy of each of the eight **reef disaster cards** listing damage to coral reefs caused by human activity.
7. Two containers to hold the cards—one container (basket, bag, box) for **planula survival and disaster cards** and one for **reef survival and disaster cards**.
8. Floor space for students to sit and form coral reefs by linking arms.

### Procedures and Game Directions:

1. Divide the class into two teams. The object of the game is to see which team will be the fastest to build a healthy reef.
2. Clear an area on the floor for children to sit and “form coral reefs.”
3. Ask each team to choose one boy and one girl to represent planulae, (the coral larvae or young stage) that will start their reef formation. Each student wears a planula badge on a headband or pinned to clothes.
4. Each planula student takes a turn pulling a **planula card** from the **planula card** container. If they chose a **planula survival card** listing appropriate places for corals to settle, ask them to read the card aloud to their classmates. Then they go to the front of the room and settle on the floor. If both planulae from the same team are successful, they sit (settle) together, linking arms. Once they sit, they are no longer planulae, but have transformed into a young coral colony, and trade in their planulae badges for coral badges. The teacher might remind students that, “On a real reef, coral planulae are settling all the time, but for our game, we will just have them settle once to get us started.”

5. If the planulae students pull a **planula disaster card**, they cannot settle. They return to their seats. Their team has to choose another pair of planulae. But they will be a turn behind the other team.
6. The new corals take turns pulling numbers from the **reef card** container. If they choose a **reef survival card** listing appropriate conditions for coral growth, the coral students can then select two other students to join them. The chosen students link arms with their coral teammates and are given coral badges. A coral reef is beginning to form. If the corals choose **reef disaster cards**, the reef cannot grow so the reef loses a coral (the student who drew a **reef disaster** number returns to the team.)
7. If a team has only one coral on the reef and that coral receives a **disaster card**, he or she returns to the team and two other students are selected as planulae.
8. The teams keep taking turns drawing cards and adding or losing corals to the reef. (When choosing new “corals” try to give turns to students who haven’t been chosen previously). After each drawing, the students read their cards aloud to insure that students understand why their reef grew or not. The object is to see which team is fastest to build a reef of ten corals. (Or you may decide on the number that means a team has won.) You may not consider it a healthy reef until all the students on one team become corals. But that may take considerable time, just like building real coral reefs.

<p><b>PLANULA SURVIVAL CARD</b></p> <p><b>Congratulations!</b></p> <p><b>You have just settled on a clean, hard lava rock!</b></p> <p><b>You grow and become a coral colony!</b></p> <hr/> <p><b>PLANULA SURVIVAL CARD</b></p> <p><b>Congratulations!</b></p> <p><b>You have just settled on a clean, hard section of old coral reef!</b></p> <p><b>You grow and become a coral colony!</b></p>	<p><b>PLANULA DISASTER CARD</b></p> <p><b>Too Bad!</b></p> <p><b>You have just settled in shifting sands and cannot attach and grow into a coral colony!</b></p> <p><b>Return to your team</b></p> <hr/> <p><b>PLANULA DISASTER CARD</b></p> <p><b>Too Bad!</b></p> <p><b>A Hawaiian sergeant fish or mamo eats you! No chance to settle now!</b></p> <p><b>Return to your team.</b></p>	<p><b>REEF DISASTER CARD</b></p> <p><b>Too Bad!</b></p> <p><b>People decide to save money by dumping sewage close to shore. This causes algae to grow over the reef so that the corals cannot receive the sunlight they need to grow!</b></p> <p><b>LOSE ONE CORAL FROM YOUR REEF!</b></p> <hr/> <p><b>REEF DISASTER CARD</b></p> <p><b>Too Bad!</b></p> <p><b>A golf course uses fertilizes incorrectly. Rain washes the fertilizer onto the reef helping the algae to grow. The coral is shaded from needed sunlight.</b></p> <p><b>LOSE ONE CORAL FROM YOUR REEF!</b></p>
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<p><b>REEF DISASTER CARD</b> Too Bad!</p> <p>A huge oil tanker hits your reef, tearing a huge hole in the ship's side. The reef is bathed in thick, black oil.</p> <p><b>LOSE ONE CORAL FROM YOUR REEF!</b></p> <hr/> <p><b>REEF DISASTER CARD</b> Too Bad!</p> <p>To prevent floods, humans line the stream beds with concrete. They clear ground for new houses and roads. Now whenever it rains, mud and freshwater pour over the reef, smothering the corals.</p> <p><b>LOSE ONE CORAL FROM YOUR REEF!</b></p>	<p><b>REEF DISASTER CARD</b> Too Bad!</p> <p>Someone decides to break off a coral head to take home. They spray paint it neon pink and sell it illegally!</p> <p><b>LOSE ONE CORAL FROM YOUR REEF!</b></p> <hr/> <p><b>REEF DISASTER CARD</b> Too Bad!</p> <p>A fisherman pours bleach over you to force fish out of your branches!</p> <p><b>LOSE ONE CORAL FROM YOUR REEF!</b></p>	<p><b>REEF DISASTER CARD</b> Too Bad!</p> <p>Hundreds of people come to admire you. But they walk all over you, break your branches and tear your delicate living tissues.</p> <p><b>LOSE ONE CORAL FROM YOUR REEF!</b></p> <hr/> <p><b>REEF DISASTER CARD</b> Too Bad!</p> <p>A sailboat pauses overhead so snorkelers can admire your coral community. Unfortunately, they drop an anchor right on your "head."</p> <p><b>LOSE ONE CORAL FROM YOUR REEF!</b></p>
<p><b>REEF SURVIVAL CARD</b> Congratulations!</p> <p>You spend the day bathed in sunlight. Your zooxanthellae make plenty of food for themselves and for you!</p> <p><b>ADD TWO NEW CORALS TO YOUR REEF!</b></p> <hr/> <p><b>REEF SURVIVAL CARD</b></p> <p>Congratulations!</p> <p>You spend the year in saltwater just the right temperature for your growth! (64 to 86 Degrees F.)</p> <p><b>ADD TWO NEW CORALS TO YOUR REEF!</b></p>	<p><b>REEF SURVIVAL CARD</b> Congratulations!</p> <p>You spend the year in clear, clean saltwater free of silt and sediment. This allows you to receive all the sunlight you need for growth.</p> <p><b>ADD TWO NEW CORALS TO YOUR REEF!</b></p> <hr/> <p><b>REEF SURVIVAL CARD</b></p> <p>Congratulations!</p> <p>You capture several small plankton animals for food.</p> <p><b>ADD TWO NEW CORALS TO YOUR REEF!</b></p>	

**Correlation to National Standards from McREL ( <http://www.mcrel.org> ) :**

Life Sciences

5. Understands the structure and function of cells and organisms
6. Understands relationships among organisms and their physical environment

Geography

8. Understands the characteristics of ecosystems on Earth's surface
14. Understands how human actions modify the physical environment