**Student Worksheet: Coral Conference**

**Coral Bleaching**

Read the *Science News* article “[Record-breaking Coral Sea temperatures threaten the Great Barrier Reef](https://www.sciencenews.org/article/coral-sea-temperature-great-barrier-reef)” and answer the following questions.

1. Using your prior knowledge, why might greenhouse gas emissions have seen a significant increase starting around the year 1900?

2. How were scientists able to measure sea surface temperatures over time? Imagine coral growth rings, like those of trees, that vary in thickness, color and density. Thick rings can represent years of good growth and thin rings can represent years of poor growth.

3. How have greenhouse gas emissions impacted ocean temperatures and how might this change in temperature impact coral growth?

4. What scientific careers might focus on coral reefs? What aspect of coral reefs would each type of these scientists study? Be specific. Name and describe at least 3 different scientific careers.

**Representing Relationships as a Biogeochemist**

With your group, answer the following questions and create three diagrams that show the processes, interactions and relationships within coral reefs during different stages of bleaching.

**Representing Relationships as a Coral Biologist**

With your group, answer the following questions and create three diagrams that show the processes, interactions and relationships within coral reefs during different stages of bleaching.

1. What is an ecologist and what do they study?

2. What are trophic levels? What do the different trophic levels represent?

3. What relationship do other marine organisms have with corals in the coral reef? Be specific.

For each of the following diagrams, label a variety of aquatic organisms that have a relationship with corals and identify the type of relationship these organisms have with each other and with corals. These relationships may include sources of food and shelter.

4. Take a full piece of paper and write “Cool” at the top of the page. On this page, draw a coral reef and diagram the relationship between organisms in a healthy reef with no signs of coral bleaching.

5. Take a full piece of paper and write “Warming” at the top of the page. On this page, draw a coral reef and diagram the relationship between organisms in a coral reef that is beginning to bleach.

6. Take a full piece of paper and write “Bleaching Event” at the top of the page. On this page, draw a coral reef and diagram the relationship between organisms in a coral reef that has been completely bleached.

7. Brainstorm three solutions to coral bleaching based on your assigned career and diagrams. These solutions can either work to solve coral bleaching or mitigate the issue.

**Coral Conference**

Share your assigned career and diagrams with the class when prompted, identify any additional interactions between the components in the class diagrams, and answer the following questions.

1. What did you learn about coral bleaching from another group that surprised you?

2. Why is it important that scientists work with other scientists outside their field?

3. Reflect on your solutions from the “Representing Relationships” part of the activity. Now that you know more about coral reefs, which one of your solutions best addresses the issue of coral bleaching? Why?