



Coral Reef Explorer

Grades 9 – 12

The ocean is home to the largest and most diverse population of creatures on the planet. As part of ocean exploration, coral reefs provide an opportunity to learn more about the abundance of marine life and their unique ecosystems.

The following lesson plans are designed to offer teachers and students a look at the undersea world of coral reefs. The National Oceanic and Atmospheric Administration (NOAA) designed these lessons for the classroom.

Lesson: Do Not Bleach!

Source: NOAA NOS

Lesson Summary: Students will be able to identify and explain five ways that coral reefs benefit human beings; identify and explain three major threats to coral reefs; describe major components of the Coral Reef Early Warning System; identify and discuss actions that can be undertaken to reduce or eliminate threats to coral reefs; discuss at least one hypothesis that explains why corals under stress may expel their zooxanthellae. Grade

Level: 9-12, adaptable to 6-8 go to:

http://oceanservice.noaa.gov/education/kits/corals/lessons/coral_bleach.pdf

or

http://oceanservice.noaa.gov/education/kits/corals/supp_coral_lessons.html

Lesson: Coral Bleaching: What's the Role of Water Temperature?

Source: NOAA CHAMP

Lesson Summary: Students will be able to graph and analyze data sets and determine the temperature threshold required to start a coral bleaching event.

Grade Level: 6-8, adaptable to 9-12 go to:

<http://www.coral.noaa.gov/cleo/pdf/Bleaching%20Lesson.pdf> or

<http://www.coral.noaa.gov/cleo/education.shtml>

Lesson: Keeping Watch on Corals

Source: NOAA NOS

Lesson Summary: Students will be able to identify and explain five ways that coral reefs benefit human beings; identify and explain three major threats to coral reefs; describe major components of the Coral Reef Early Warning System; identify and discuss actions that can be undertaken to reduce or eliminate threats to coral reefs; obtain and analyze several types of oceanographic data from remote-sensing satellites. Grade Level: 9-12, adaptable to 6-8 go to:

http://oceanservice.noaa.gov/education/kits/corals/lessons/coral_mgmt.pdf
or

http://oceanservice.noaa.gov/education/kits/corals/supp_coral_lessons.html

⋮

Lesson: Effects of CO₂ on Coral Reefs

Source: NOAA CHAMP

Lesson Summary: Students will be able to explain the role of carbon dioxide (CO₂) in photosynthesis and cellular respiration and carbonic acid's impact on calcification and dissolution of coral skeletons, and its ability to influence pH. Grade Level: 6-8, adaptable to 9-12 go to:

<http://www.coral.noaa.gov/cleo/pdf/CO2Activity.pdf> or

<http://www.coral.noaa.gov/cleo/education.shtml>

