

Lesson Plan - Finding Hope on Our Reefs

Module Summary

This module welcomes students back to Reefs Go Live (RGL) as we explore the world of coral reefs and how CCMI's research is helping us find hope for their healthy future. Participants engage through our interactive platform by asking questions, taking part in live polls, chatting with our team, and completing a provided in-class worksheet. Students are taken on a guided dive, alongside an underwater educator, where they will explore how CCMI's long-term research efforts are finding reasons to have hope for a healthy future for our coral reef ecosystems. All education materials are in alignment with the Cayman Islands and United Kingdom Science National Curriculums and the Ocean Literacy Principles.

Year 4,5 & 6

Learning Objectives

- Understand why coral reefs are important and what threats they face
- Explain the scientific method and how CCMI uses it in our research
- Record and plot data using tables and graphs
- Define competition: on the coral reef and an example in your daily life
- Pledge at least three actions you can take at home or in school to help protect coral reef health in the future

The Cayman Islands and United Kingdom National Science Curriculum

- Recognize that living things can be grouped in a variety of ways (Year 4 - Living things and their habitats)
- Record findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables (Year 4 - Working Scientifically Skills)
- Students, through firsthand experiences and using a range of resources, identify and classify locally occurring species of animals and plants using observable features (Year 5)
- Find out about other animals, including how they grow, feed, move and use their senses (Year 5)
- Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences (Year 6 - Living things and their habitats)

Ocean Literacy Principles

- Ocean Literacy Principle #3: The ocean is a major influence on weather and climate.
- Ocean Literacy Principle #5: The ocean supports a great diversity of life and ecosystems.
- Ocean Literacy Principle #6: The ocean and humans are inextricably interconnected.



Description of Live Lesson

This module will take place on a coral reef ecosystem along the coast of Little Cayman in the Cayman Islands, where the CCMI team will guide students through a series of learning objectives. A topside host will communicate in real time between the students joining in as our remote audience/virtual dive buddies and an underwater educator. CCMI's long-term coral reef monitoring research project results will be shared, with students being shown demonstrations of our underwater field research methods. Key messages will be delivered, highlighting lessons learned from the long-term data discussed, all in alignment with the Science National Curriculum of the Cayman Islands and the United Kingdom and the Ocean Literacy Principles. Students will have a worksheet and supplemental booklet to complete during the live lesson which they are encouraged to ask questions about to the host or educator at any time during the broadcast. Pre-recorded footage may be used to show key concepts, should these observations not be discovered naturally during the live lesson.

Live broadcast outline (40 mins)

- 00:00 - 03:00 Welcome back to Reefs Go Live and CCMI team introductions
- 03:00 - 05:00 The importance of coral reefs and what threatens their health
- 05:00 - 10:00 CCMI long-term research results: corals
- 10:00 - 15:00 Underwater demonstration: coral size
- 15:00 - 20:00 CCMI long-term research results: fish
- 20:00 - 25:00 In-class worksheet highlighting CCMI fish data
- 25:00 - 30:00 Reef management practices and how YOU can help!
- 30:00 - 35:00 Questions
- 35:00 - 40:00 Live lesson recap and conclude the dive

Necessary Materials

- internet connection
- computer/phone
- projector (optional)
- speakers/headphones
- scissors
- notebook paper
- pencils/pens
- CCMI worksheets and/or booklet

Useful additional resources

- www.reefresearch.org/what-we-do/education/teacher-resources/
- www.reefresearch.org/what-we-do/education/reefs-go-live/
- www.reefresearch.org/healthy-reef-report-card-2021-results/
- www.natgeokids.com/uk/discover/geography/general-geography/coral-reef-facts/
- www.kids.nceas.ucsb.edu/biomes/coralreef.html
- www.kids.frontiersin.org/articles/10.3389/frym.2019.00143
- Mass, Christina. (2014) A Parrotfish's Tale.
<http://www.parrotfishpublishing.com/books>



“Finding Hope on our Reefs” Key Terms

The CCMI educators may refer to the following key terms throughout the live lesson. Listen up for your chance to learn some new vocabulary about our coral reef ecosystems!

Abundance - the number of surveyed objects or organisms in a given area (density)

Biomass - total amount or weight of surveyed organisms in a given area

Climate Change - change in global weather patterns over time, largely due to increased carbon dioxide in the atmosphere as the result of human activities

Coral Reef - marine structure composed of a layer of living coral atop coral skeletons, minerals, and organic matter

Ecosystem - a community of living organisms in conjunction with the non-living components of their environment, interacting as a system

Herbivore - animal that gets its energy from only eating primary producers such as algae and plants

Predator - animal that hunts and eats other animals

Reef Flattening - the loss of habitat due to complex reef framework collapse from a decline in branching coral species

The Scientific Method - the process of discovering facts through testing and experimentation. The basic process involves making an observation, forming a hypothesis, making a prediction, conducting an experiment and analyzing the results.

Species - taxonomic group containing individuals that share common traits/resemble one another, can interbreed, and their offspring are also able to reproduce

Species Richness - the number of different species represented in a given area or ecological community