



Lesson Plan: Episode 4 - World Ocean Day: Coral Reefs and Us - Our Island Guardians

Module Summary

This World Ocean Day episode of Reefs Go Live explores the connection between coral reefs and people. Students will discover that coral reefs are not only colourful underwater habitats, but living systems that support island communities, protect coastlines, provide nursery areas for young fish, support fisheries, and inspire people around the world.


The episode follows the relationship between reefs and people through time, from the long natural history of reef formation to the many ways reefs support life today. Students will observe the reef during the day, compare it with nocturnal reef life after dark, and explore how people are helping reefs recover through coral restoration and conservation.

A topside wave demonstration will show how reef structures can reduce wave energy before it reaches shore. The episode will also highlight CCMI's coral nursery work and the importance of protecting habitats and fish populations, including Nassau grouper spawning sites around Little Cayman.

Participants engage through the interactive platform by asking questions, taking part in live chat prompts, sharing observations, and completing an in-class worksheet (provided). All educational material aligns with Cayman Islands and United Kingdom Science National Curriculums and Ocean Literacy Principles.

 **Friday 5th June 2026; 10 am EST (UTC -5)**

 **Duration:** 40-minute broadcast, 1 hour lesson

 **Years:** 2, 4, 5, and 6



Learning Objectives

- Understand how coral reefs support people, wildlife, and coastal communities
- Describe how coral reefs provide shelter, nursery habitat, food, and coastal protection
- Understand that people and coral reefs are connected through fisheries, culture, recreation, science, and conservation
- Explain how reef structures can reduce wave energy and help protect shorelines
- Recognise that coral reefs are active both day and night, with different animals and behaviours visible after dark
- Understand how coral restoration and protected areas can help damaged reefs recover
- Identify actions people can take to help protect coral reefs and the wider ocean

The Cayman Islands and United Kingdom National Science Curriculum

- Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other (Year 2)
- Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain (Year 2)
- Construct and interpret a variety of food chains, identifying producers, predators and prey (Year 4)
- Recognise that environments can change and that this can sometimes pose dangers to living things (Year 4)
- Explore examples of human impact, both positive and negative, on environments (Year 4)
- Describe the life processes of reproduction in some plants and animals (Year 5)
- Describe how living things are classified into broad groups according to common observable characteristics (Year 6)
- Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution (Year 6)
- Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago (Year 6)

Ocean Literacy Principles

- Principle #1: Earth has one big ocean with many features
- Principle #3: The ocean is a major influence on weather and climate
- Principle #5: The ocean supports a great diversity of life and ecosystems
- Principle #6: The ocean and humans are inextricably interconnected
- Principle #7: The ocean is largely unexplored



Description of Live Lesson

This episode takes place on the coral reefs of Little Cayman, where CCMI's topside and underwater hosts guide students through the relationship between coral reefs and people. A topside host will communicate in real time with students who join as our remote audience/virtual dive buddies alongside an underwater educator on the reef.

Through the live underwater broadcast, participants will observe how reef animals use coral structures for shelter, feeding, and protection. Students will learn that coral reefs provide habitat for many species, including juvenile fish, and that these reef communities can support larger fish, local fisheries, and people on land.

The episode will also explore how coral reefs help protect coastlines. A simple topside wave demonstration will show how rough reef structures can reduce wave energy before it reaches shore, helping to limit erosion and flooding. This will help students understand why reefs are especially important for low-lying islands and coastal communities.

Students will then compare the reef during the day with reef life after dark through a short night dive segment. This will introduce nocturnal reef behaviour, including animals hiding, hunting, feeding, or becoming more active at night.

The broadcast will also highlight the emotional and cultural connection people have with the ocean through an "I love the ocean because..." video montage. Students will be encouraged to reflect on why people care about the ocean and why this matters for conservation.

Finally, students will learn how people can help reefs recover through coral restoration, coral nurseries, protected areas, and everyday ocean actions. CCMI's coral nursery work will be used as an example of active restoration, while Nassau grouper spawning site protection will show how conservation can support fish populations and wider reef health.

By the end of the broadcast, students will understand that coral reefs are homes, nurseries, natural barriers, night-time ecosystems, and places that people rely on and love. They will also identify that by protecting, restoring, and caring for reef ecosystems, people can take positive action for the future of coral reefs.

This lesson is in alignment with the Science National Curriculum of the Cayman Islands and the United Kingdom, as well as the Ocean Literacy Principles. Students can complete the worksheet during the live lesson and are encouraged to submit questions to the hosts at any time. Pre-recorded footage may be used to show key concepts, should these observations not be seen naturally during the live lesson.



Live broadcast outline (40 mins)

00:00 - 03:00	Welcome back to Reefs Go Live; introductions
03:00 - 06:00	Live reef observation: reef detectives; animals using the reef; corals as living animals
06:00 - 09:00	Reef history and people through time; animation segment
09:00 - 14:00	Coral reef structure: shelter, biodiversity, food webs, and fisheries
14:00 - 18:00	Juvenile fish and nursery habitat; protecting the next generation of reef life
18:00 - 23:00	Coastal protection: wave energy and reef barrier demonstration
23:00 - 28:00	Night reef predictions and pre-recorded night dive segment
28:00 - 31:00	“I love the ocean because...” World Ocean Day video montage and live Responses
31:00 - 35:00	Coral restoration and CCMI coral nursery segment
35:00 - 37:00	Protected areas, Nassau grouper spawning sites, reef conservation actions
37:00 - 39:00	Live Q&A and student ocean actions
39:00 - 40:00	Final reef view, summary, and goodbye

Necessary Materials

- Internet connection
- Computer, tablet, or phone
- Projector (optional, recommended for group viewing)
- Speakers or headphones
- Jar of water mixed with soil and leaves (optional for teacher to recreate the topside demonstration)
- A sponge or piece of cloth (to represent mangrove roots in the filtering demo)
- Two clear glasses or containers
- Notebook paper
- Pencils or pens
- CCMI worksheets (one copy per student)

Useful additional resources

- www.reefresearch.org
- www.reefresearch.org/our-work/education/teacher-resources/
- www.reefresearch.org/reefs-go-live/
- www.reefresearch.org/our-work/research/blue-carbon/
- www.natgeokids.com/uk/discover/geography/general-geography/coral-reef-facts/
- oceanservice.noaa.gov/facts/mangroves.html



Teacher's notes and preparation

Before the broadcast

- Print one student worksheet per student
- Display the key terms on the board ahead of the lesson, and encourage students to listen for them during the broadcast
- Prompt students to think about: “What do coral reefs do for people?” before starting the broadcast
- Optional: prepare the wave demonstration using a shallow tray of water, a rough object to represent a reef, and a model shoreline
- If recreating the demonstration in class, place towels or waterproof covering underneath the tray

During the broadcast

- Encourage students to share observations during the “reef detectives” activity
- Prompt students to look for animals using the reef for shelter, feeding, or protection
- Encourage students to make predictions before the night dive segment: what might change on the reef after dark?
- Prompt students to submit questions to the live chat
- Encourage students to write down one “ocean action” they could take after the lesson

After the broadcast

- Use the worksheet activities to consolidate learning, particularly the reef benefits and ocean action sections
- Discuss: How do coral reefs help people? How can people help coral reefs?
- Extension: have students to design a World Ocean Day poster showing one way coral reefs support island communities
- Extension: have students to create a simple diagram showing how a reef can reduce wave energy before it reaches shore



“World Ocean Day: Coral Reefs and Us - Our Island Guardians” Key Terms

The CCMI educators may refer to the following key terms throughout the live lesson. Display these on the board before the broadcast and/or encourage students to listen carefully for them during the broadcast.

Biodiversity - all the different living organisms within a given area

Coastal development - construction and build-up of properties along the shoreline

Coastal protection - natural or man-made features that help protect the shoreline from waves, flooding, and erosion

Coral nursery - place where scientists grow corals underwater on specialized structures with the goal of replenishing depleted coral reefs from what is grown in these places

Coral polyp - a tiny animal related to sea anemones and jellies that builds the hard structures of coral reefs. Inside the bodies of coral polyps live microscopic algae called zooxanthellae, which provide the coral with food in exchange for a place to live

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

Ecosystem - a community of living things, such as plants and animals, and the non-living parts, such as water, sunlight, and soil, all interacting in one place

Erosion - displacement of solids such as soil, mud, rock, and other particles by the forces of wind, water, ice, or movement in response to gravity

Fishery - an area, industry, or activity connected to catching fish or other marine animals

Food chain - simple representation to show how energy moves from producers to consumers in an ecosystem

Food web - representation to show how energy moves from producers to consumers in an ecosystem while also showing how these interactions between organisms in an ecosystem can be multi-faceted

Habitat - part of the environment occupied by an animal or plant

Juvenile - a young animal that has not yet reached adulthood

Marine Protected Areas (MPAs) - sections of the ocean which are partitioned off from certain human activities for the protection of resources

Nocturnal - being active or happening at night rather than during the day



Outplanting - transplanting of corals from a nursery onto a reef or other structure in the ocean

Overfishing - when people catch fish faster than they can reproduce so there aren't enough left in the ocean

Predator - animal that hunts and eats other animals

Prey - animal hunted and eaten by predators

Resilience - ability of an ecosystem or species to bounce back from negative environmental influence

Restoration - renewal of a damaged, degraded, or destroyed ecosystem by active human intervention

Spawning - mass external fertilization through sexual reproduction of organisms

Spawning aggregation - a gathering of organisms in the same area at the same time for spawning

Sustainability - use of a resource or harvesting of a species at a rate that does not induce population decline, but maintains it

Threat - something with the intention to cause harm

Wave energy - the force carried by waves as they move across the water toward the shore

Zooxanthellae - symbiotic algae that live in the tissues of coral polyps that provides the coral with energy and nutrients