



Fabulous Food Chains

Module Summary

This module is an immersive live dive where students will be taught how to identify a top-down food chain and a bottom-up food chain on a coral reef ecosystem. They will be given an in-class activity to assist with their learning and understanding of marine food chains, food webs, and the energy transfer between them. The CCMI team will show a Cayman Islands Department of the Environment (DoE) permitted Baited Remote Underwater Video Survey (BRUVS) which is used to estimate the local population of certain fish species and elasmobranchs. Students will discover the roles of various organisms within the food pyramid such as: primary producers, consumers, meso-predators, and apex-predators. They will also learn about the relationships between large organisms to small organisms in population dynamics across food webs. It's going to be a great dive on Little Cayman!

Year 6

Learning Objectives

- Describe the differences between a food chain and a food web.
- Define what it means to be an apex-predator, a meso-predator, a consumer, and a primary producer.
- Explain what happens when you remove a keystone species from a food chain or food web or what happens when you introduce an invasive species.
- Discuss energy transfer along a food chain or a food web.
- Report on why these food chains and food webs are delicate and what we can do to keep them intact.

Science National Curriculum Alignment

- Order living things in a simple food chain and understand the dependency of one on the other (Year 6).

Description of the live dive

The dive will take place on a pristine coral reef rich with marine life offshore of Little Cayman, Cayman Islands, BWI. The CCMI underwater educator will communicate constantly with the live lesson host (who will be topside on the boat) and with the engaged remote class. The educator will take the students through a series of fun facts and learning objectives regarding food chains, food webs, keystone species, and invasive species; all in alignment with the year 6 Science National Curriculum of the Cayman Islands. Students will have an in-class activity to complete during the live lesson, which they are welcome to ask questions about to our underwater educator at any time during the duration of the live broadcast. Pre-recorded footage and images may be used to show the differences between food chains and possible results of setting a BRUVS, should these not occur naturally on camera during the broadcast. Students will observe the preparation of a BRUV and how they can get involved with the Cayman Islands Department of the Environment (DoE) BRUV volunteer programme on Grand Cayman, Cayman Islands.



Live broadcast outline (45 mins)

- 00:00 - 03:00 CCMI host welcomes students and outlines the lesson
- 03:00 - 05:00 CCMI host introduces the educator and the in-class activity
- 05:00 - 10:00 Educator defines and shows examples of a food chain and food web
- 10:00 - 15:00 Educator describes the importance of keystone species and the effects of invasive species
- 15:00 - 20:00 Educator explains energy transfer and connectivity along food chains
- 20:00 - 25:00 Questions
- 25:00 - 30:00 Educator informs students on population dynamics and demonstrates BRUV's topside on the boat
- 30:00 - 35:00 Educator discusses the delicate nature of our marine food chains and food webs and what the students can do to ensure their future health on the reef
- 35:00 - 40:00 Questions
- 40:00 - 45:00 CCMI host recaps the live dive and thanks the students for joining

Materials

Internet connection, laptop, projector, speakers, paper, pencils/pens, CCMI activity sheet, and CCMI fun fact sheet.

Useful resources

- www.reefresearch.org/reefs-go-live
- www.projectaware.org
- www.doe.ky
- www.education.gov.ky/education/curriculum
- www.oceanservice.noaa.gov/kids/
- <https://www.sharkconservationcayman.com/>