

Food Web / Ocean Acidification

Food Web Duration **3:24** (cc)

Ocean Acidification Duration **2:50** (cc)

Produced by [Guy Harvey Ocean Foundation](http://GuyHarveyOceanFoundation.org)

STEAM Curriculum Lesson Extension:

The Temps They Are A'Changin, Grade 8

Goal

Students will analyze information from two videos to understand how the increase in carbon dioxide in the air, which is absorbed by the ocean, threatens the oceanic ecosystem.

Overview

This lesson synthesizes information from two videos to allow students to piece together the influence high levels of carbon in the environment has on ocean life. Jessica Harvey, star of the Expedition Notebook series of ocean videos, leads viewers of “Food Web” through a discussion of what makes up the ocean’s food web. In the second video entitled “Ocean Acidification,” she details how increased carbon in the ocean is creating a toxic environment for the ecosystem.

Connections to EarthX STEAM Curriculum Lesson: *The Temps They Are A'Changin*

In the STEAM lesson, students explore the connections between greenhouse gases and climate change. The videos show how the altered chemistry of the oceans caused by increased carbon absorption could threaten the oceanic food web.

Guiding Questions

1. “Food Web” demonstrates the transfer of energy through a pyramid model. Do you think a web or a pyramid is a better way to show how an ecosystem works? Why do you think so?
2. What type of impact would the decrease of calcifying organisms have on a coral reef trophic pyramid?
3. There are actions mentioned at the end of “Ocean Acidification” that could be taken to lessen the impact of increased carbon levels. Which one do you think would have the greatest impact and why? Which one would you be most likely to adopt?

Vocabulary

Food Web

- Food web
- Food chain
- Coral reef trophic pyramid
- Primary producers
- Photosynthesis
- Primary consumers
- Herbivores
- Algae
- Secondary consumers
- Carnivores
- Tertiary consumers
- Apex predators
- Metabolic process
- Decomposers

Food Web

- Ocean acidification
- Carbonic acid
- Carbonate ion concentration
- Hydrogen ion concentration
- pH
- Calcifying organisms

Standards

Next Generation Science Standards

MS-LS1-3
MS-LS2-4
MS-ESS3-4

TEKS Science Objectives

7.b.5B
7.b.10B
8.b.5D-E
8.b.11A,C