



Pre-Visit/Post-Visit Guide

Lesson Name: Marine Energy Flow

Summary of Lesson:

Energy flows between organisms large and small in our vast oceans. Students will put their power of observation to the test as they examine marine life up close using live specimens and microscopes. Students will analyze the flow of energy, as well as our role in the growing microplastic dilemma in our oceans.

South Carolina Science Standards: 5.L.4B.2, 5.E.3B.3, 5.S.1A.2

Pre-Visit Resources

- **Teacher/Chaperone Expectations:** Please help us by letting us know of any special accommodations for your children prior to the lesson. Your assistance with classroom management and distribution of supplies will also be greatly appreciated. Students will rotate in small groups inspecting specimens under microscopes and on table tops.
- **Instructions for Teachers:** Please report to the Harrison Hall of Science for this lesson. Your instructor will meet you at the front desk and take your class to the Lab.
- **Key Vocabulary:** food web, stereoscope, microscope, phytoplankton, zooplankton, macroinvertebrate, filter feeder, consumer, producer, microplastic, biomagnification
- **Discussion Questions:**
 - How does energy flow in a marine ecosystem?
 - What is the source of all energy in an ecosystem?
 - What role does plankton have in a marine food web?
 - How are microplastics affecting marine food webs?
- **Content Preview Video:**
 - Why are Plankton the Most Vital Organisms on Earth? (3:36)
<https://www.youtube.com/watch?v=UjnYJVkysfo>

Post-Visit Resources

- **Writing Prompt:** You are a drifting plankton of algae, taking in energy from the sun. Describe your energy journey as you move up the food chain in a marine environment. This may be completed as a children's book or illustrated comic.
- **Possible Lesson Link:**
 - Build a Marine Food Web <https://www.sciencelearn.org.nz/resources/1525-build-a-marine-food-web>
- **Video Link:**
 - Ocean Food Chain and Food Webs-Friends with Fins (2:27)
https://www.youtube.com/watch?v=ES_749Hw3D4
- **Career Connections**

- o National Geographic presents “What It Means to Be a Marine Biologist” (1:15) <https://www.youtube.com/watch?v=BbVASV30vVc>
- o “When your job is saving the ocean” (4:02) <https://www.youtube.com/watch?v=B-dv0B0g1c>
- o Chief Scientist with NOAA’s Marine Debris Program (15:36) podcast: <https://oceanservice.noaa.gov/podcast/june16/dd66-microplastics.html>