Milstein Hall of Ocean Life

BACKGROUND FOR EDUCATORS

Overview of Student Worksheets: MARINE FOOD WEBS

Using worksheets, students explore a kelp forest's food chain to see how energy and matter is transferred among marine organisms.

- **Part 1: Kelp Forests Ecosystem Exhibit.** Students find and identify organisms that are part of this ecosystem's food chain, such as sea urchins that feed on the kelp, the fish that feed on the sea urchins, and birds that feed on the fish. Based on their observation, students answer the question: Why should we protect kelp forests?
- **Part 2: Choose Your Own Ecosystem Exhibit.** Next, students choose one of the other seven ecosystem exhibits to find and identify a food chain in that ecosystem. Based on their observation, students answer the question: What is a threat to this ecosystem?

These observations help students experience a **natural phenomenon**—that many different kinds of organisms live in a marine ecosystem. This phenomenon can serve as an anchoring point in exploration and discussion as students explore the **investigation question**: How do these organisms get the energy they need?

Extension Ideas

Back in the classroom, students can investigate threats to these ecosystems. Students can then construct an explanation of: What is being done to protect these ecosystems? What more can be done?

Correlation to Standards

This activity supports the following Next Generation Science Standards:

Disciplinary Core Ideas	**LS2.B: Cycle of Matter and Energy Transfer in Ecosystems** Algae forms the lowest level of the food web. At each link upward in a food web, only a small fraction of the matter consumed at the lower level is transferred upward, to produce growth and release energy in cellular respiration at the higher level. Given this inefficiency, there are generally fewer organisms at higher levels of a food web.
Crosscutting Concepts	**Systems and System Models** Models can be used to simulate systems and interactions—including energy, matter, and information flows—within and between systems at different scales.
Science and Engineering Practices	**Obtaining, Evaluating, and Communicating Information** Critically read scientific texts to determine the central ideas and/or obtain scientific information to describe patterns in and/or evidence about the natural world.