

Lesson Plan: Teeming with Life - Amazing Ocean Creatures



Activity: Habitat Classifieds

Students write "classified" ads describing several ocean habitats, and they identify potential residents of the habitats.

Academic Areas:

Language arts, Science

Grade Levels:

Grades 4–6

Learning Objectives:

After participating in the activity that follows, students will be able to do the following:

- List several different ocean habitats.
- Name species that live in the different habitats.
- Understand the importance of protecting ocean habitats.

Standards Met:

Language Arts

- Demonstrates competence in the general skills and strategies of the writing process
- Gathers and uses information for research purposes

Science

- Understands structure and function in living systems
- Learns about diversity and adaptations of organisms

Materials for the class:

Seashores to Sea Floors, paper, pens

Background:

Just as the Earth sustains diverse habitats, so does the sea. Like Earth habitats, ocean habitats also support communities of life that are adapted especially for those conditions. Following is a brief description of five ocean habitats and the plants and animals they support. Your students can use these summaries as a basis for writing their classified ads.

Coral reef. Sometimes called rainforests of the sea, coral reefs are teeming with color and life. The ecosystem is built (literally) on the remains of soft-bodied animals called coral polyps. They secrete hard outer shells that build up over time to form reefs that may extend hundreds of miles. Much of a coral reef is dead: It is made up of the hard outer shells that remain after the polyps die. However, living amid the coral are myriad fish, crustaceans, and other animals that thrive in this busy community. Coral reefs form in warm, shallow waters.

Deep, dark ocean. The ocean depths (from 3,000 feet to the ocean floor) are home to small fish and other animals that can withstand the enormous pressure caused by the weight of all that water—up to two tons per square inch. No light reaches this depth, so plants cannot survive there. In addition, temperatures are near freezing all the time. Despite these conditions, however, fish—many with huge teeth and special organs that glow—scavenge and feed on each other. Their ability to glow may attract prey or mates. Some of the species that live in the deep ocean are angler fish, hatchet fish, gulper eels, lantern fish, and sea cucumbers.

Kelp forests. The "trees" of a kelp forest are actually the giant fronds of a type of brown algae. The plants cluster together in cold, shallow water, where they cling to rocks and attract a host of species. Creatures living on the kelp forest "floor," include sea urchins and brittle stars. Mid-level dwellers include many kinds of fish (such as the giant kelpfish), snails, and crabs. In the forest "canopy" are sea birds, fish, and sea otters that float amid the fronds and feed on shellfish.

Rocky shore. Waves pound away at a rocky shore, so its inhabitants must be adept at holding on. You might see mussels or other shellfish attached to the rocks as well as to the seaweed. In tide pools that form in the crevices of the rocks, you may see crabs, shellfish, starfish, or snails. Plants and animals living near shore must be able to withstand changing water levels, temperature, and salinity.

Hydrothermal vents. Deep along the mid-ocean ridges are ecosystems that thrive because of the hot discharge of gases from within the Earth. Cracks in Earth's crust spew out hot, mineral-filled water, not only warming the surrounding water, but also providing a source of life-sustaining nutrients. Special bacteria feed on the chemicals that pour out of the vents; in turn, the bacteria become food for large clams, crabs, anemones, and tube worms. Those animals cluster around "chimneys" that form around the vents because of mineral build-up.

What to Do:

1. Ask your class how people go about finding a place to live. One way is to read classified ads in a newspaper that describe features of different homes. Ocean animals don't read ads, but they do look for homes that are right for them-homes called habitats. Ask students if they can name several types of habitats (rainforest, desert, prairie, etc.). Now, can they name any ocean habitats? Explain that just like land habitats, ocean habitats provide all the elements needed for a community of marine plants and animals to survive. Just as creatures living on land have their habitats, members of ocean habitats are adapted for life there.
2. Explain that the students work for the Sea Sentinel, a newspaper that publishes classified ads for ocean dwellers. Students are to write classified ads tailored for plants and animals living in different ocean habitats. Use the habitats described in the background to get started, but encourage the class to come up with others. Divide the class into teams of four or five, and assign each team a different habitat. Team member must use research materials to learn about their habitats and the plants and animals that live in them. Then each student should write a classified ad describing the habitat as an ideal place for a different plant or animal that would call it home. For example, an ad directed at a black swallower (a fish that lives in the deep, dark ocean and whose stomach stretches to hold large prey) might read: "Perfect place if you like high-pressure living! It's dark and cold, but the place is aglow with "enlightening" inhabitants. You'll find plenty to expand your tummy!"
3. After everyone has written the ads, compile them into a classified page. Divide the page into a section for each habitat, and list the appropriate ads under each. Students should try to match the ads with the creatures or plants they describe.
4. Expand the idea of habitats to explore marine sanctuaries and reserves-areas of the ocean that are protected because of their unique habitat, inhabitants, or other special qualities. Learn more from the [Marine Sanctuaries Web site](#) from the National Ocean Service.

Resources

Beneath the Waves: Exploring the Hidden World of the Kelp Forest by Norbert Wu (Chronicle Books, 1997)

Coral Reef by Gary W. Davis (Children's Press, 1997)

Down to a Sunless Sea: The Strange World of Hydrothermal Vents by Kate Madin (Raintree/Steck-Vaughn, 1999)

The Magic School Bus on the Ocean Floor by Joanna Cole (Scholastic, 1994)

The Magic School Bus Takes a Dive: A Book About Coral Reefs by Joanna Cole (Scholastic, 1998)

Ocean Tide Pool by Arthur John L'Hommedieu (Children's Press,