

STUDENT ACTIVITY: THE LIFE AND TIMES OF A FISH

GRADE LEVEL

6th to 8th

NATIONAL SCIENCE EDUCATION STANDARDS

Content Standard A: Science as Inquiry

- Abilities necessary to do scientific inquiry
- Understanding about scientific inquiry

Content Standard C: Life Science

- Reproduction and heredity
- Populations and ecosystems
- Diversity and adaptations of organisms

OCEAN LITERACY OBJECTIVES

(www.coexploration.org/oceanliteracy)

- Students will understand that the ocean supports a great diversity of life and ecosystems (Essential Principle 5);
- Students will understand that ocean biology provides many unique examples of life cycles, adaptations, and important relationships among organisms (symbiosis, predator-prey dynamics, and energy transfer) that do not occur on land (Fundamental Concept 5d); and
- Students will understand that ocean habitats are defined by environmental characteristics. Due to interactions of abiotic factors such as salinity, temperature, oxygen, pH, light, nutrients, pressure, substrate, and circulation, ocean life is not evenly distributed temporally or spatially, (i.e. it is "patchy"). Some regions of the ocean support more diverse and abundant life than anywhere on Earth, while much of the ocean is considered a desert (Fundamental Concept 5f).

KEY WORDS

- **Bottomfish Ecosystem:** On or near the ocean bottom
- **Coral Reef Ecosystem:** Among coral reefs
- **Pelagic/Open Ocean:** In the water column, not near the ocean bottom

OVERVIEW

Animals in the ocean have adaptations that enable them to survive in different habitats. No matter where they live, fish need suitable protection from predators, food, clean water, and a spawning site to ensure the continuation of their species. Some fish migrate to find these things, but others stay in one area their entire life. In this activity, students will explore three different ecosystems in the ocean. See the "Zones in the Ocean" chart for descriptions of the coral reef, pelagic, and bottomfish habitats.

ACTIVITIES

1. Give students copies of the "Habitats Map" and the "Zones in the Ocean" chart. The Habitats Map defines the zones. The chart gives zones and some of the environmental factors. Students need to brainstorm ideas for adaptations that fish living in these zones might have. Students are to list fish found in each of these zones. Also, have students include other environmental factors for each zone. Students can use the map to list where the different species live. Have students refer to the "Fish Basics" pages used in the "Design a Fish" activity. This will give them ideas of different kinds of fish for the different zones.
2. Give students copies of the "Fish Identification" pages that give examples of fish found in the pelagic, bottomfish, and coral reefs zones. Have students create a mural that depicts the three zones. Include in this mural the environmental factors. Students are to create three-dimensional models of fish that would be found in the different zones.

FOR MORE INFORMATION

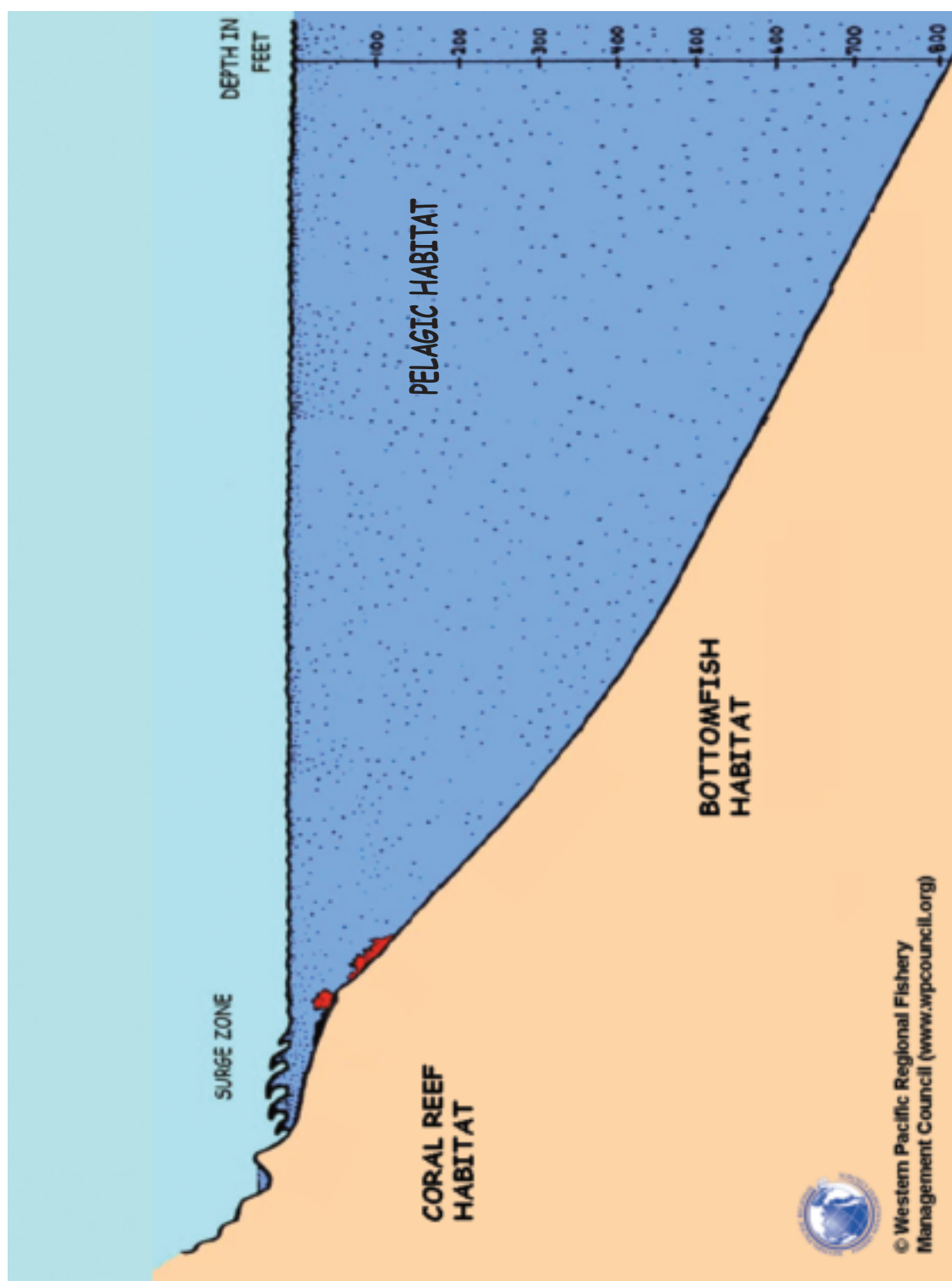
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CREDIT



This lesson is based on a lesson of the same title in the *FishQuest* curriculum by the Western Pacific Fishery Management Council in partnership with Pacific Resources in Education and Learning, the Hawaii Department of Education, and Hawaii Public Television. It was modified by the Western Pacific Council with the gracious assistance of Craig Strang, Lawrence Hall of Science, University of California; and Mellie Lewis, College of Exploration.

STUDENT WORKSHEET: HABITATS MAP




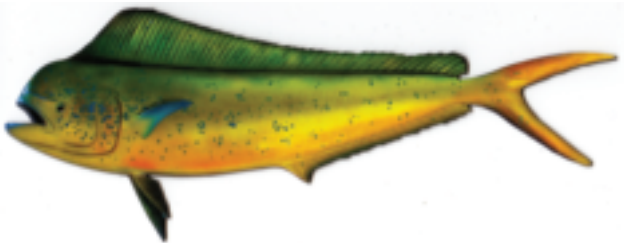
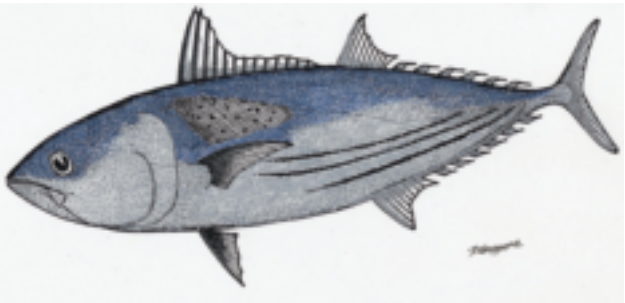



STUDENT WORKSHEET: ZONES IN THE OCEAN







Name: _____ Date: _____

Habitat	Environmental Factors	Adaptations	Types of Fish
Coral Reef	Quiet waters Coral structures Sunlight available Dark hiding places Predators Competition for food Ranges from 0-300 feet		
Pelagic/Open Ocean	Wide open spaces Lack of hiding places Predators Waves and currents Migrate from region to region		
Bottomfish Ecosystem	Cool dark waters Ocean floor Rocky ledges Undersea cliffs Pinnacles and holes Ranges from 90-900 feet		

STUDENT WORKSHEET: PELAGIC FISH IDENTIFICATION

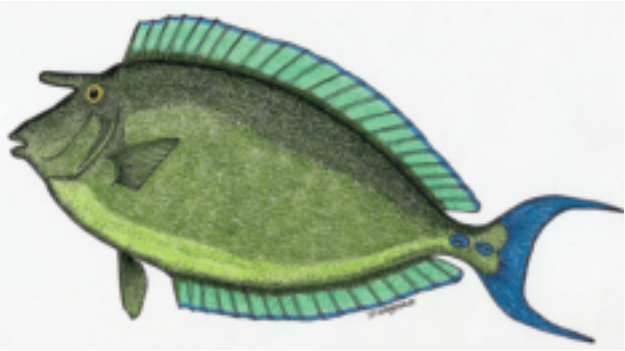




Pelagic Fish	
<p>Yellowfin Tuna</p> 	<p>Blue Marlin</p> 
<p>Albacore Tuna</p> 	<p>Dolphinfish (Mahimahi)</p> 
<p>Skipjack Tuna</p> 	<p>Moonfish</p> 

STUDENT WORKSHEET: BOTTOMFISH IDENTIFICATION

Bottomfish	
<p>Pink Snapper</p> 	<p>Von Siebold's Snapper</p> 
<p>Sea Bass</p> 	<p>Longtailed Red Snapper</p> 
<p>Grey Snapper</p> 	<p>Flower Snapper</p> 

Illustrations (except grey snapper): Courtesy of Hawaii Division of Aquatic Resources.

STUDENT WORKSHEET: REEF FISH IDENTIFICATION

Reef Fish	
Bluespine Unicornfish 	Convict Surgeonfish 
Goldring Surgeonfish 	Squirrel Fish 
Whitesaddle Goatfish 	Parrotfish 