



Teacher's Guide

Adaptations to Underwater Nights **The Living Oceans**

Grade Levels:

Intermediate
Junior High
High School

Subject Areas:

Biology
Life Sciences
Environmental Education

Synopsis:

Live-action underwater photography reveals the habits and behavior of night-spawning coral, manta rays, lobsters, white tipped sharks, cuttlefish, Humboldt squid and opalescent squid. The mysteries of ocean ecology are evident in the annual spawning of coral, the molting of lobsters, the feeding habits of sharks and cuttlefish, and the deadly attacks of squid. A final sequence captures the death of thousands of opalescent squid as they lay their eggs, and then die in vast numbers.

Learning Objectives: Students will:

- Provide examples of predation in the world's oceans.
- Describe the night spawning that occurs on coral reefs.
- Describe the life cycle of the opalescent squid.
- Appreciate the mysteries of marine ecology.

Vocabulary:

polyps, progeny, plankton, exoskeleton, peacock flounders, camouflage, abyss, Humboldt squid, opalescent squid, pelagic stingrays, diurnal scavengers

Pre-Viewing Discussion:

What is meant by the term predator or predation?

What are some of the largest predators in the marine environment?

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How large are the largest squid?

Why would nocturnal predators be successful in a marine environment?

Post-Viewing Discussion:

How do lobsters molt?

Why do Humboldt squid frequently rise to the surface at night?

What is unusual about the life cycle of the opalescent squid?

How do manta rays feed at night?

Why is the cuttlefish such a successful predator?

Further Activities:

Do further research on any of the species mentioned in this program.

Draw a map of the worldwide distribution of Humboldt squid or opalescent squid.

Find out how many pounds of plankton are consumed by manta rays each day.

Find out what other marine animals shed their exoskeletons as lobsters do.

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