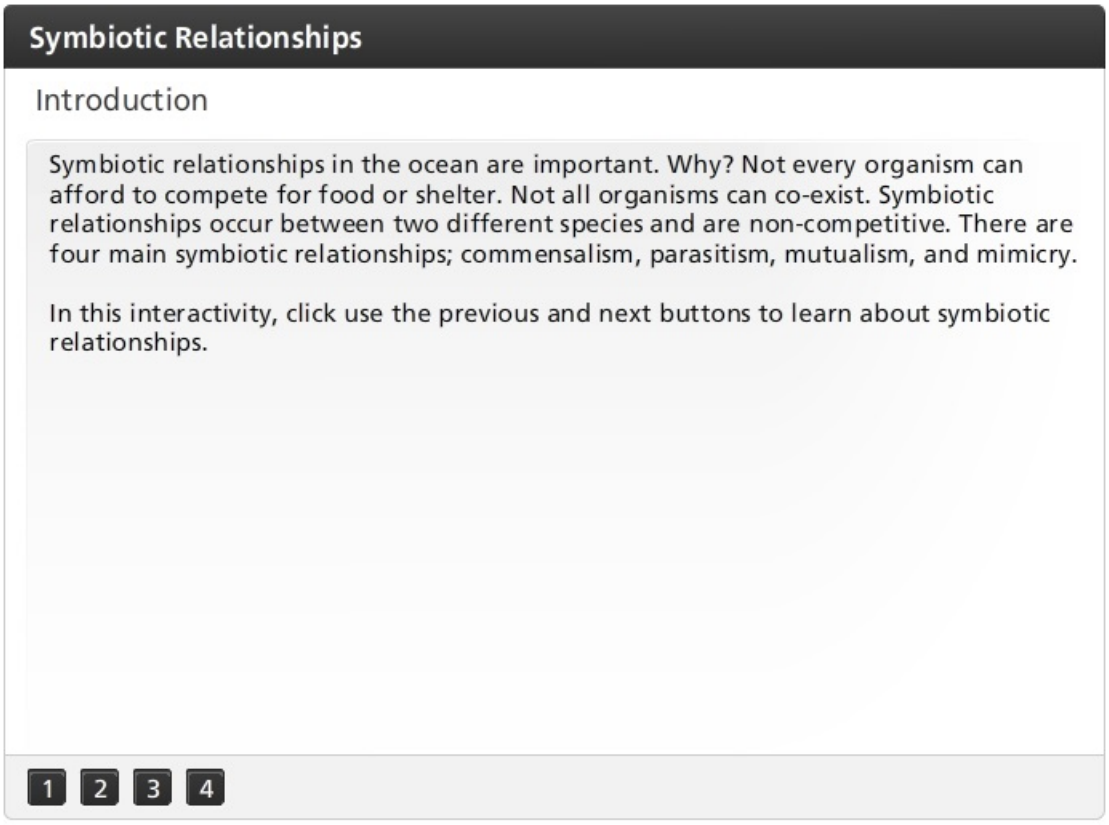
Module 9: Marine Ecology
Topic 3 Content: Symbiotic Relationships Notes



Symbiotic relationships in the ocean are important. Why? Not every organism can afford to compete for food or shelter. Not all organisms can co-exist. Symbiotic relationships occur between two different species and are non-competitive. There are four main symbiotic relationships; commensalism, parasitism, mutualism, and mimicry.

In this interactivity, click use the previous and next buttons to learn about symbiotic relationships.

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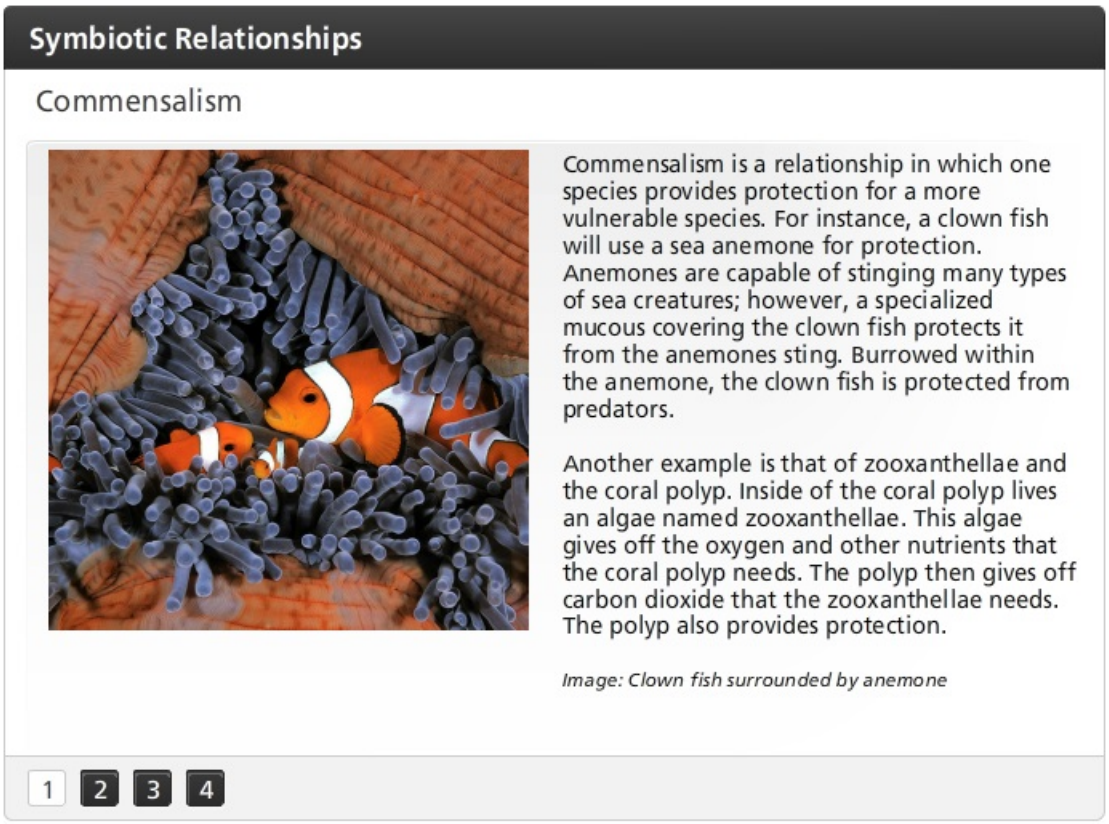

Commensalism is a relationship in which one species provides protection for a more vulnerable species. For instance, a clown fish will use a sea anemone for protection. Anemones are capable of stinging many types of sea creatures; however, a specialized mucous covering the clown fish protects it from the anemones sting. Burrowed within the anemone, the clown fish is protected from predators.

Another example is that of zooxanthellae and the coral polyp. Inside of the coral polyp lives an algae named zooxanthellae. This algae gives off the oxygen and other nutrients that the coral polyp needs. The polyp then gives off carbon dioxide that the zooxanthellae needs. The polyp also provides protection.

Image: Clown fish surrounded by anemone

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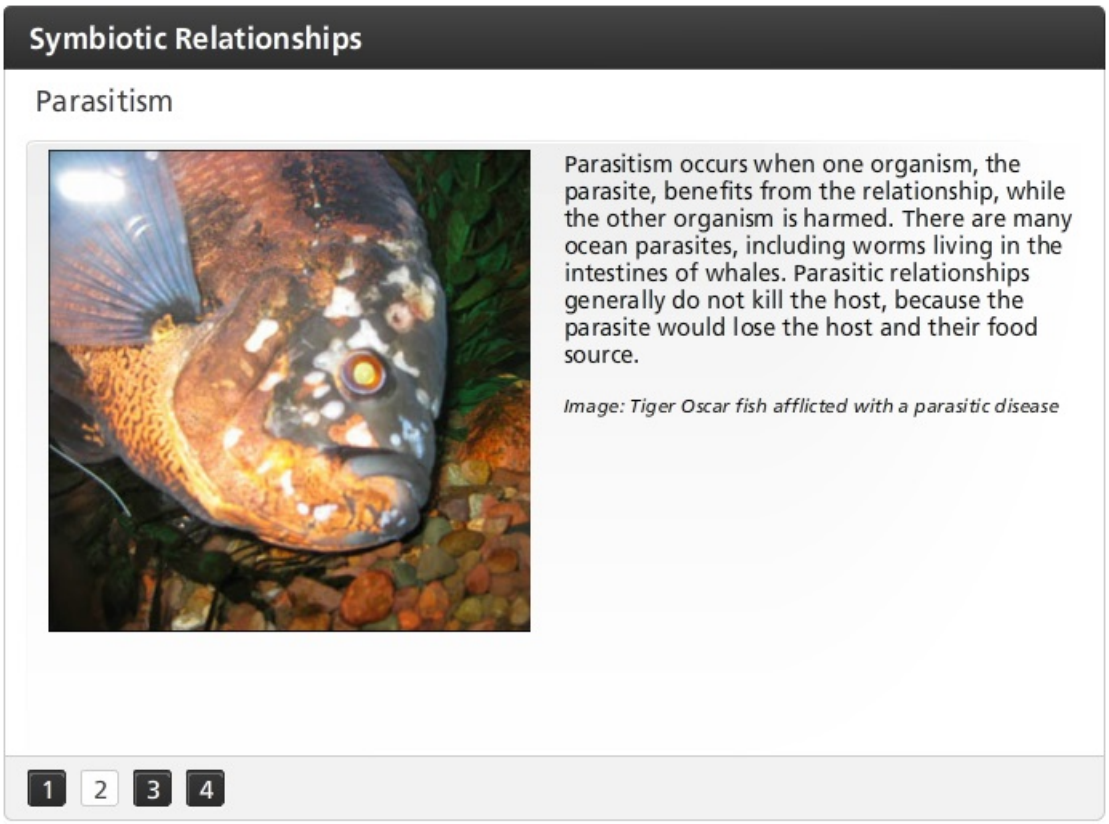

Parasitism occurs when one organism, the parasite, benefits from the relationship, while the other organism is harmed. There are many ocean parasites, including worms living in the intestines of whales. Parasitic relationships generally do not kill the host, because the parasite would lose the host and their food source.

Image: Tiger Oscar fish afflicted with a parasitic disease

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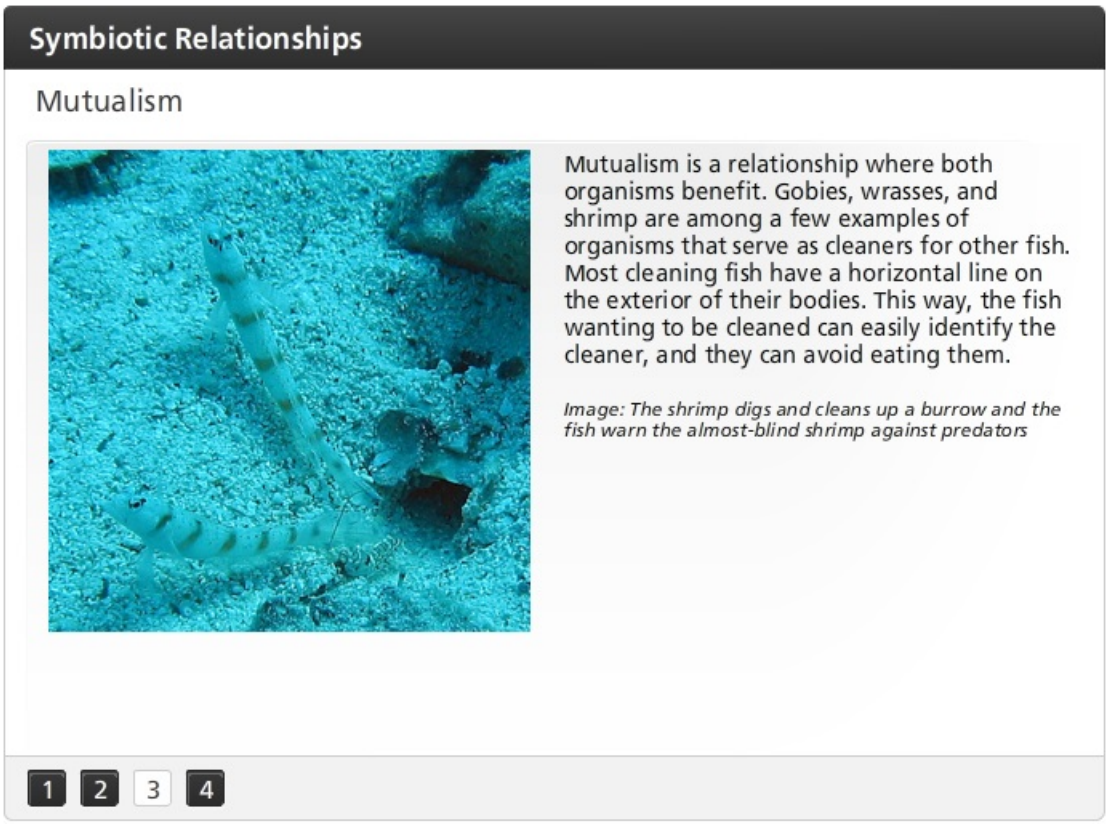
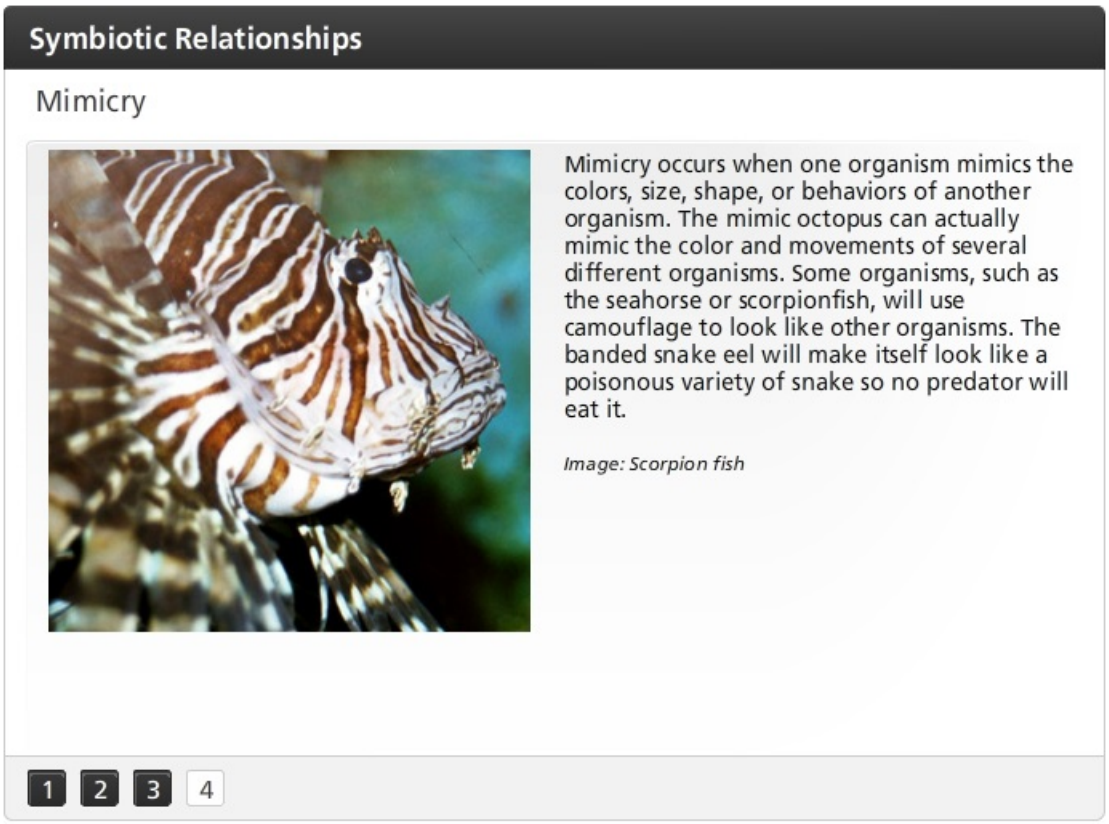


Mutualism is a relationship where both organisms benefit. Gobies, wrasses, and shrimp are among a few examples of organisms that serve as cleaners for other fish. Most cleaning fish have a horizontal line on the exterior of their bodies. This way, the fish wanting to be cleaned can easily identify the cleaner, and they can avoid eating them.

Image: The shrimp digs and cleans up a burrow and the fish warn the almost-blind shrimp against predators



Mimicry occurs when one organism mimics the colors, size, shape, or behaviors of another organism. The mimic octopus can actually mimic the color and movements of several different organisms. Some organisms, such as the seahorse or scorpionfish, will use camouflage to look like other organisms. The banded snake eel will make itself look like a poisonous variety of snake so no predator will eat it.

Image: Scorpion fish