

Source: This activity is adapted from **Coral Reefs: A Gallery Program** produced at the National Aquarium in Baltimore, Maryland. Used with permission.

41*. REEF HOMES: ZONATION OF A CORAL REEF

One interesting feature of reef-building corals is that their growth form varies with their location. Green plants show the same response. A plant that grows in the shade is usually taller than the same kind of plant growing in the sun. Generally, corals grow in more flat or plate-like forms in deeper water—a shape that efficiently captures the reduced available light needed to keep their zooxanthellae alive.

1. *Place the platelike leaf coral on the reef cross section diagram.*

Coral species, as well as other reef animals, differ in their need for light and wave action. They also vary in tolerance for salinity, temperature, and ability to shed sediment. Hence coral reefs have distinct zones of coral distribution.

A coral reef typically has the kind of zonation shown in the reef diagram. In the lagoon or near shore there may be a turtle grass bed. The lagoon may also have sandy areas and coral patches surrounded by grass beds. Sometimes a “halo” of bare sand occurs between a grass bed and a patch reef. Sea urchins and other grazers hide from their fish predators on the patch reef during the day. At night they eat the turtle grass.

2. *Place turtle grass and staghorn corals in the lagoon. Use the above information to write a hypothesis about the formation of the “halo” around the patch reef and design a test for it.*

Some corals grow best in heavy waves. Thus at the reef crest (the front edge of the reef), a band of corals forms that grows up to the surface.

Flat sheets of fire coral and colonial anemones called sea mat are typical of this high wave energy zone. This reef crest provides protection from strong storms and waves for the lagoon and the shoreline. Purple sea fans are also more common near the reef crest. They grow across the incoming waves which carry the tiny animals from the open sea that feed sea fans and many other reef inhabitants.

3. *Place sea fans and fire coral on the reef crest in the diagram.*

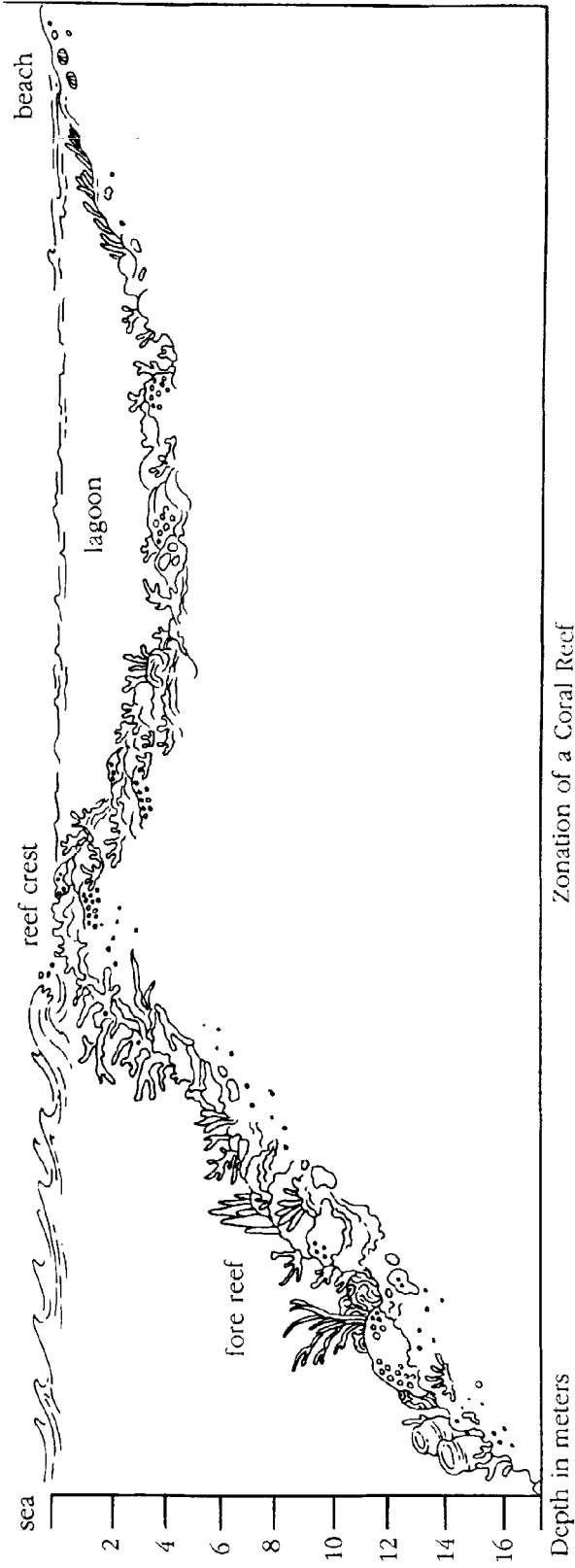
As you move down the fore reef (seaward side of the reef), elkhorn corals (which really look more like moose antlers) dominate. In deeper water, flat leaf corals replace them.

4. *Place elkhorn coral on the diagram.*

Correlation to National Standards from McREL (<http://www.mcrel.org>) :

Life Sciences

6. Understands relationships among organisms and their physical environment



Zonation of a Coral Reef

