

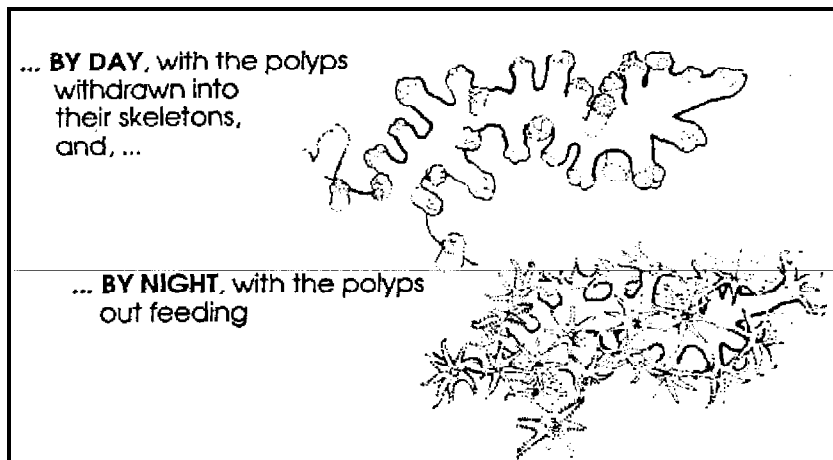
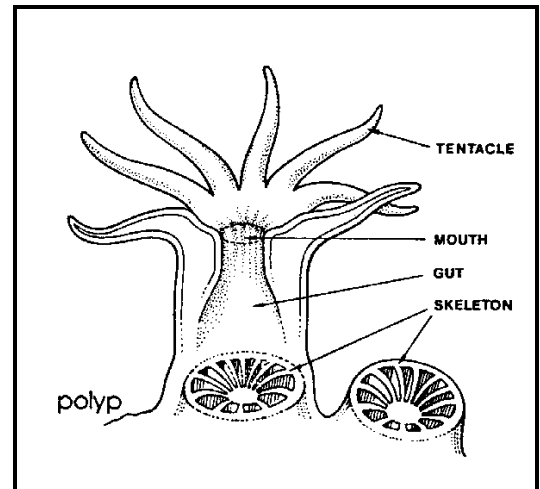
Source: Coral Reefs in the South Pacific Handbook. Produced by Dr. Michael King, illustrated by S. Belew and M. King. © 1993 South Pacific Regional Environment Programme, P.O. Box 240, Apia, Western Samoa. Reproduction authorized.

3. WHAT IS A CORAL POLYP?

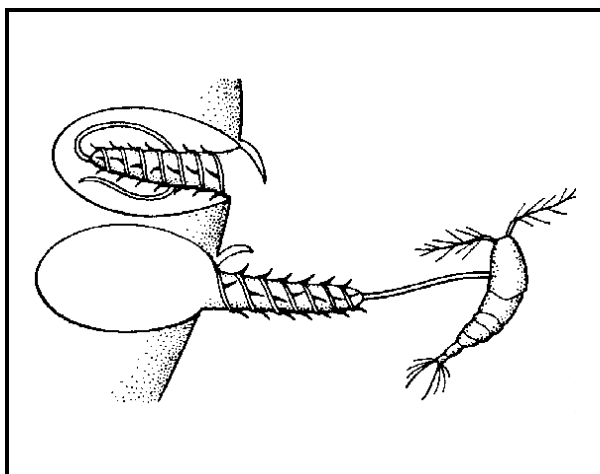
Most corals consist of many small polyps living together in a large group or a colony. A single polyp has a tube-shaped body with a mouth which is surrounded by tentacles.

The polyp of hard corals produces a stony skeleton of calcium carbonate (limestone or chalk) beneath and around its base. Often the skeleton forms a cup-like structure in which the polyp lives.

The **CORAL POLYP** shown at the right is cut away to show the gut and the skeleton beneath the polyp. A skeleton without its polyp is shown at the right.



When feeding, particularly at night, the polyps stretch out their tentacles to gather food. During the day, or when threatened, the polyps withdraw into their protective cups. Part of a coral branch is shown here....



The tentacles have small stinging cells called nematocysts, which can shoot poison spears into small animals drifting by. These animals (called zooplankton) are used as food and are passed to the mouth by the tentacles.

The drawing at the left shows an enlargement of part of a tentacle. Two **stinging cells** are shown. The top cell has not fired its poison spear. The bottom cell has fired its poison spear into a small floating animal.

Only a few corals, such as the fire corals (actually hydroids), have stinging cells which are powerful enough to affect humans.

Besides capturing food drifting in the water currents, coral polyps get food from small plant cells (called zooxanthellae) which live inside their tissue. The plant cells use sunlight and nutrients in the sea water to produce food which is shared with the coral.

The plants gain shelter and the corals gain food from this relationship which is call **symbiosis**. Corals therefore, like plants, require sunlight for photosynthesis and can only live in clear, brightly lit waters.

VOCABULARY WORDS

Symbiosis (pronounced “sim-by-o-sis”): A relationship between two different creatures which live together for the benefit of both. Plant cells (called Zooxanthellae) have a symbiotic relationship with coral polyps.

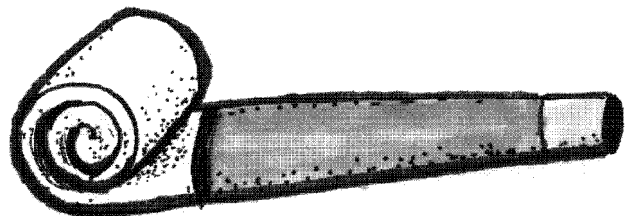
Zooplankton: Small animals, or the larvae of larger animals, which drift in the sea.

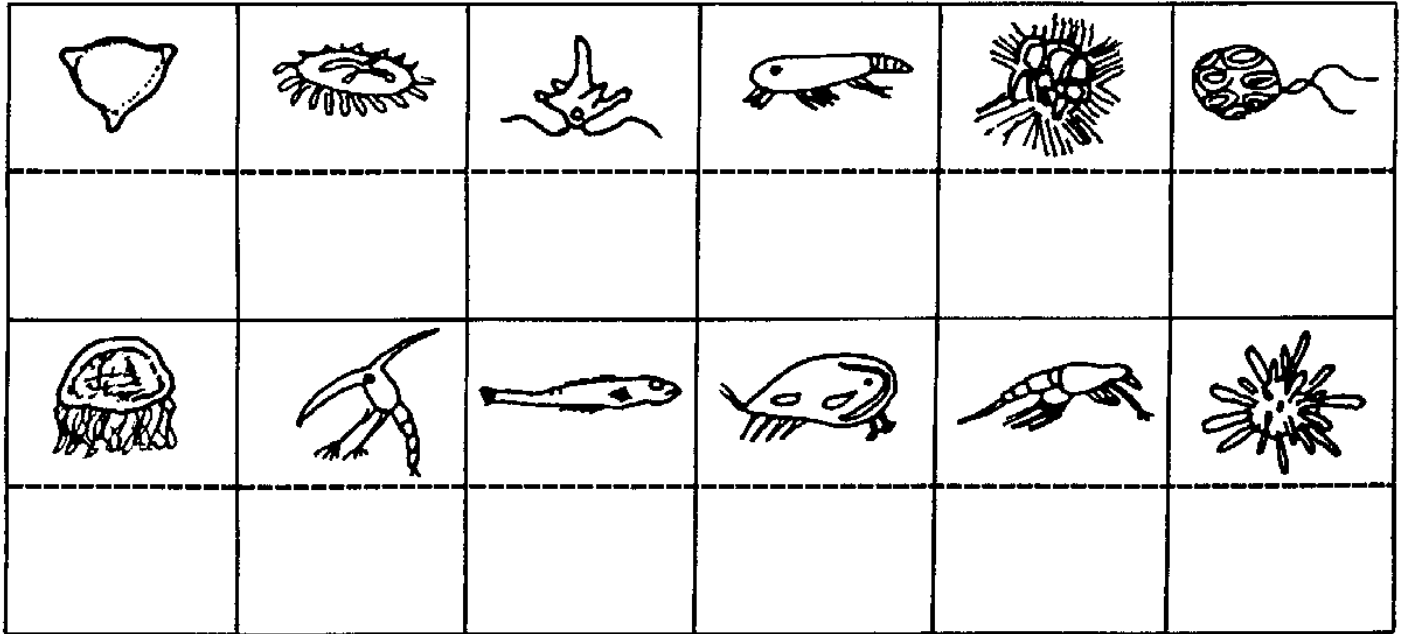
Source: The following activity is contributed by the J.L. Scott Marine Education Center, Biloxi, Mississippi. Used with permission.

Follow-up Activity: Plankton Roundup

Students will be intrigued to learn that the tentacles of corals bear an arsenal of pistol-like stinging cells. The following game mimics this unusual hunting equipment and provides a magnified glimpse at the zooplankton that are an important part of the diet of many corals.

- 1) Cut out the squares on the following page and write a point value (between 1 and 5) on the back of each. Fold the squares in half, with planktonic pictures on the outside, and seal each with a small piece of tape. Use short lengths of string or yarn to hang the folded squares from the rim of a paper plate. Tie another piece of string or yarn to the middle of the plate and suspend it in a doorway, with plankton dangling below.
- 2) Tell students that they will pretend to be coral polyps. Point out that a coral polyp has *many very tiny* stinging cells. Also remind the class that zooplankton are so *small* as to be all but invisible to the naked eye. The students will use blow-up party favors (pictured below) to mimic individual stinging cells being fired at zooplankton. Have the students (“coral polyps”) take turns “shooting” zooplankton. If a student succeeds in hitting a zooplankton when he or she inflates a party favor, cut the folded square from the string and hand it to the student. If a student hits more than one square, the turn is forfeited and no zooplankton are collected.
- 3) After four rounds of “shooting” (or when all plankton are gone), have students unfold the squares they have collected. The student with the most points is the winner.





Cut on solid lines. Fold on dashed lines.

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

Life Sciences

5. Understands the structure and function of cells and organisms
6. Understands relationships among organisms and their physical environment