Make an Anemone

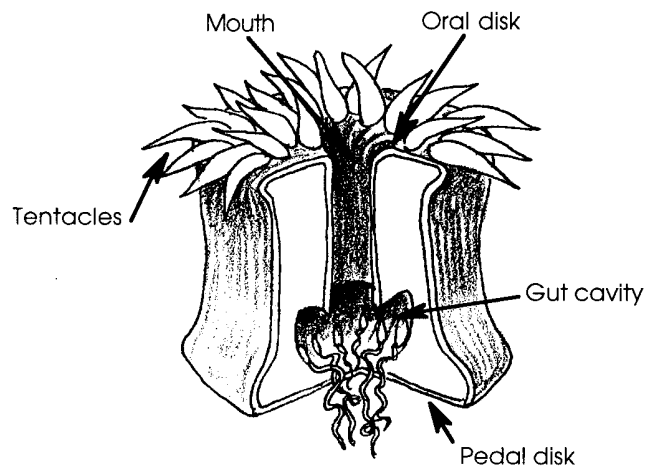Lesson by Patty Enright, Stillwater, MN

Key Concepts

1. A sea anemone is a flower-like animal with a ring of stinging tentacles surrounding its mouth, a hollow body, and a suction foot at the bottom of their body for attachment to rocks, pilings, etc.

2. When a sea anemone is threatened, it retreats by pulling its tentacles inside its body cavity.

3. Sea stars, certain mollusks, flatfishes and some other fishes eat anemones.

Background

Sea anemones are often referred to as the flowers of the sea. Their radial symmetry, waving tentacles and colorful hues, easily attract our attention.

An anemone's thick body is crowned with tentacles surrounding an oral disk. The tentacles of the anemone have nematocysts, or stinging cells. Although the stinging cells can be effective as a defense mechanism, they are primarily a predatory adaptation used in capturing food. The stickiness you feel when you put your finger on the tentacles of a thick-tentacled anemone, is the effect of the discharged stinging cells. Our skin is so tough that we do not feel it as stinging. Once prey has been trapped or stunned by the stinging cells, the food is transferred by the tentacles towards the anemone's elastic mouth and into the gut cavity for digestion. Indigestible products are ejected through the same opening.

Tentacles can number from a few dozen to thousands. Anemones that feed on larger prey such as crabs, small fish or other invertebrates, tend to have fewer, stouter tentacles than those feeding on plankton. The plankton eating anemones have great fluffy masses of fine, thread-like tentacles and are the anemones frequently seen on pilings and docks.

Anemones can withdraw the upper body inward, folding its tentacles and oral disk into its body cavity, and thereby reducing itself to an igloo shaped blob. Some species attach bits of sand and shell to the body column, further camouflaging their presence when tucked in.

Most species of anemones have a pedal disk or foot which attaches the animal firmly to its chosen substrate. For the most part, anemones are not considered mobile creatures. However, an anemone can move very slowly by sliding on its pedal disk. This movement may be in response to a threat from a predator, or in response to a more abundant food supply or the need for greater shelter or less sunlight to avoid drying out when exposed at low tide. Some species of anemones are "chauffeured", attached to the shells of crabs and mollusks. *Stomphia coccinea* is one of the few anemones that can actually "swim" to flee its chief predator, the leather star. When it senses a leather star by means of sensory cells on its tentacles and body, it releases its foothold and with alternating contractions and relaxations of the body column muscles, wiggles away to safety.

Materials

For the class:

- pictures of sea anemones
- scraps of colored construction paper
- staplers
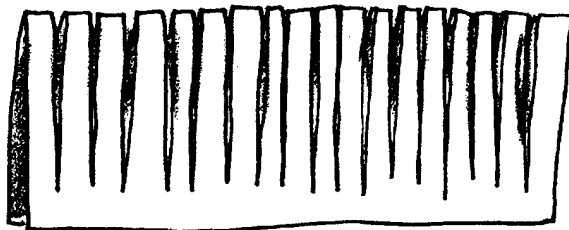- tape

For each anemone constructed:

- one 12" x 18" piece of colored construction paper
- 1/2 pipe cleaner or piece of wire
- 3"- 4" piece of cardboard tube

Teaching Hints

Begin "Make an Anemone" with a discussion of the physical and behavioral characteristics of sea anemones; conclude with actual construction of a model sea anemone by following these directions:

1. Fold 12" x 18" piece of construction paper in half the long way.

2. Along the length of the fold, make 1/2" cuts to within 1" of the bottom edges.

3. Roll construction paper around the cardboard tube with unfolded edges at the bottom of the tube. Staple the construction paper once or twice to the tube.

4. Open folds a little to relax the "tentacles".

5. Cut out a double-sided small fish, and glue it to one end of the pipe cleaner or wire.

6. Tape the other end of the pipe cleaner in the center of the anemone just high enough so the fish seems hidden within the tentacles.

Key Words

nematocysts - stinging cells on the tentacles of sea anemones and certain other sea animals

radial symmetry - the condition of having similar parts regularly arranged around a central axis

Extensions

1. Challenge motivated students to construct a model of an anemone that can withdraw its tentacles.

2. Use old socks and colored yarn to create an anemone hand puppet.