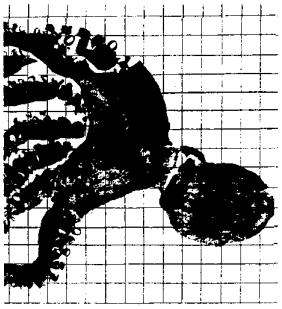
Octo-Puzzle

Idea from Judy D'Amore, Port Townsend, WA

Key Concepts

1. An octopus has many structures and behaviors which help it to survive in its habitat.

2. An octopus has powerful suction cups on its arms and a hard, strong beak in the center of eight arms, which it uses to eat shellfish, including hermit crabs.



Background

Whether jet-propelling itself through the water or gliding over the ocean bottom, an octopus captures the imagination. Often times villanized, the octopus is a solitary, shy, and usually gentle animal which possesses a well-developed brain and excellent eye sight.

A shell-less relative of the clam and oyster, an octopus can change its body shape to fit into narrow crevices or through small openings. Its camouflage skills are so well-developed that it can actually alter its skin texture, taking on the same texture as its surroundings! Simultaneously, special pigmentation in its skin allows it to change color to match the background of its habitat.

Additional background information is found in the preceding activity, "Octopus Escape".

Materials

For the class:

- octopus grid pattern, cut into sections
- 6" x 6 " squares of white drawing paper (504 sheets)
- master grid or at least an outline of the grid for students to use in mounting their pieces of the puzzle on a wall
- masking tape

Teaching Hints

"Octo-Puzzle" is a culminating activity in which each student receives a piece of an octopus pattern on a grid, increases the scale of the piece, and contributes it as a portion of a giant octopus mural.

Preparation

1. Duplicate the octopus grid pattern. (Note: the next step is easier if you enlarge the pattern as you copy it.)

2. Cut the parts of the grid containing the octopus into enough pieces so each student gets a section of complete squares. Notice there are 28 rows so, if you have 28 students, you might cut the pattern by rows. BE SURE TO LABEL each section, on the back, with the row number or the coordinates. These "addresses" will help you locate each student's squares in the final wall puzzle.

3. Cut 504 pieces of white drawing paper (6" x 6" or smaller, if wall space is limited).

4. Locate a wall large enough to construct the wall puzzle when all the pieces are enlarged. The finished puzzle will be 14 feet long if you use 6" x 6" squares. Mount the master grid coordinates.

Procedure

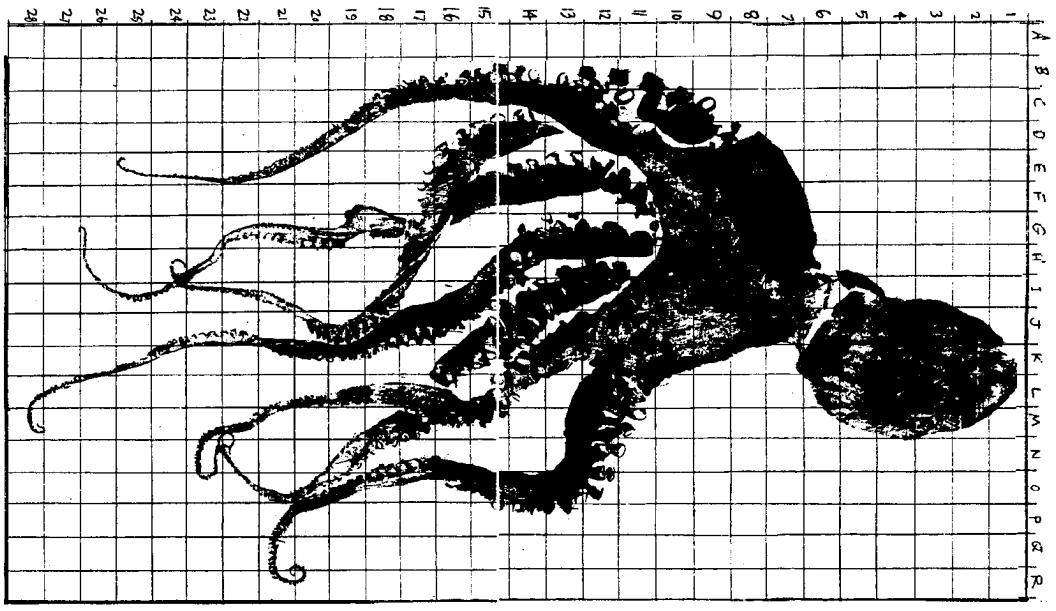
1. Explain to students that they will be constructing a wall puzzle of a mystery guest. Concealing the fact that they are creating an octopus puzzle increases the motivation for each student to complete their particular section.

2. Distribute a section of the puzzle to each student for close examination. Demonstrate how to "scale up" a single grid square by exactly reproducing on a larger square, the patterning on the smaller, original square. Then, have each student "scale up" the black pattern on each separate square of his or her section on a separate 6" x 6" square sheet of paper.

3. Call attention to the row number or grid location marked on the back of each section. Point out the master grid on the wall to help students understand how the puzzle will be formed from the individual squares.

4. When students have completed enlarging the grid squares from their puzzle pieces, have them follow the grid pattern to put the puzzle pieces up on the wall.

5. When the octopus is completed, share with students that the original pattern was from a print of an actual octopus. The process used to print the octopus is very similar to the fishprinting process described in the earlier lesson, "Gyotaku - Japanese Fish Printing", Lesson 3 of Unit 9. Enjoy your tide pool visitor!



Completed Puzzle