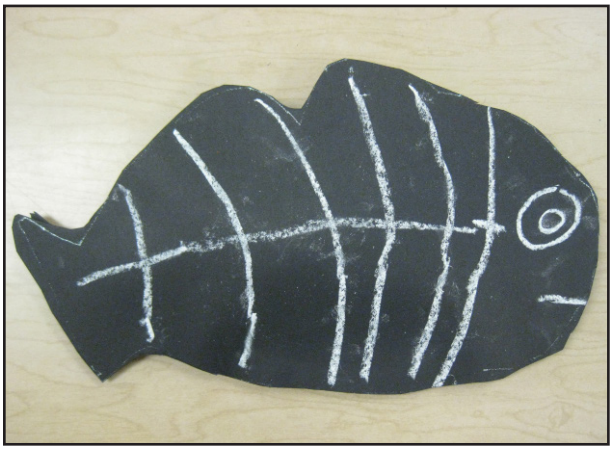


Side A

Side B

Symmetrical Bioluminescent Skeleton Fish Studies

Project Overview:

This project delves into the wide visual range of deep sea animals. Students will look at projected images of various fish that produce their own light in response to their dark environment. Bioluminescence will be introduced as a main topic. Skeletal structures of fish will also be explored.

Each student will produce a unique fish that displays bright glowy color on one side, while the opposing side reveals its underlying skeletal system. This project also coincided with Halloween as an alternative to more commonly found skeletons around the holiday.

These objects are deceivingly simple, however they're really great examples of an intuitive relationship between a form and its interior structure. Nearly every student captured the underlying "armature" of the fish in a really nuanced gesture with the chalk.

Objectives:

- Students will be introduced to deep sea fish and how they have developed bioluminescence in response to their environment.
- The class will also look at skeletal structures of fish.
- Each student will make their own double-sided fish. One side with colors, the other as a skeleton.
- Each fish is stuffed with its own cut-offs and hot glued together.

Discussion:

Ask students what types of fish they know? Does anyone have a pet fish? How deep down in the sea do fish live? What happens as you get deeper and deeper below the surface of the water? It gets darker. How do fish

respond to the lack of light near the bottom of the ocean? They begin to produce their own light. This is called bioluminescence. Why do they produce light? What functions could it have?

Materials:

- Black construction paper - 12 x 18
- Metallic markers
- Glowy crayons
- White chalk
- Scissors
- Hot glue gun
- Extra glue sticks

Process:

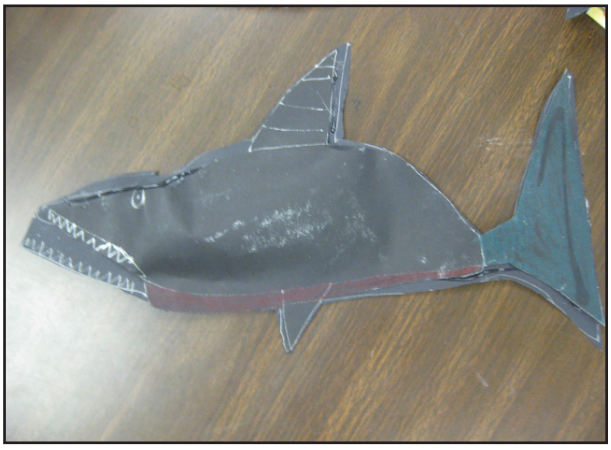
1) Each student will receive 2 -12x18 pieces of black construction paper.
2) Students will draw the outline of their fish and color it with metallic markers/crayons.
3) They can cut the fish out then lay it on the second piece of paper to trace. Cut out second fish.
4) Students will sandwich the papers together to figure out which side of the second piece to color on.
5) Students draw the fish skeleton in chalk on second piece.
6) Teacher hot glues two pieces together while stuffing with excess paper cut offs.

TEKS:

Mathematics:
111.4. (B1), (B3), (B8),
Science:
112.13. (B2), (B3), (B5), (B6), (B9), (B10)
Fine Art:
117.108. (B1), (B2), (B4)

Student Examples:

Side A

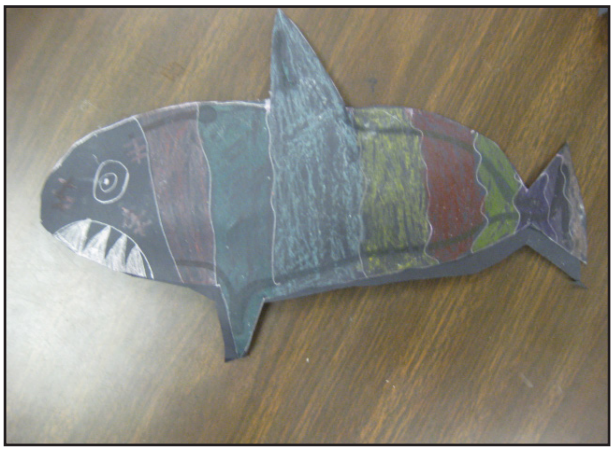


Side B

Side A

Side B

Side A



Side B

(Two Different Fish)