

“Dark Water”

Resource Summary: Introductory exploration of animal adaptations, including the bioluminescence of some ocean creatures, through an interactive read-aloud accompanied by an art activity.

Subject Areas: Art, Science

Grade Level Range: 3rd

Standards:

NGSS 3-LS3-2.

Use evidence to support the explanation that traits can be influenced by the environment.

NGSS 3-LS4-2.

Use evidence to construct an explanation for how the variation in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.

Visual Arts Grade Three 1.0 Artistic Perception 1.5

Identify and describe elements of art in works of art, emphasizing line, color, shape/form, texture, space, and value.

Resource Provided By: Imelda Delgado, Grade 2, Hollister School, Goleta Union School District

Resource Details:

After watching *Dark Water*, return to the beginning of the tale and rewatch the first minute. Emphasize the word “bioluminescent”. Ask students if they have heard the word before, if they know what the word means, and what they think it could mean. Read the following quote from Reggie Pagaling, elder and Tomol Captain: “Most of these time, on journeys when we cross, we usually have the bioluminescent effect and so when your paddle hits the water, it explodes with light so each time all your paddles hit the water, the whole side of the boat lights up, and any sea animal in the water wants to see what you’re like and it goes shooting by and you see it light up in the water.”

Continue the exploration of bioluminescence by watching the YouTube video from National Geographic Kids, *What is Bioluminescence?* and stop after the 24 second video of bioluminescent jellyfish.

https://youtu.be/9Z_TWHFEHow?list=PLQInTIdJs0ZSPAR1bF-S5hE3C7hViegli

Discuss bioluminescence, its purpose, and how it helps animals survive.

Transition to the investigation of other animal traits and adaptations with the book, *What*

Do You Do With a Tail Like This? This guessing book will allow students to activate their prior knowledge of animal characteristics. This book follows the basic pattern of depicting a body part from several animals such as the tail, the nose, the mouth, and so on and then identifying the animal it belongs to and its importance to that animal. When reading, pause and allow students to make predictions and discuss the purpose of the given trait.

After exploring a variety of animal adaptations, students create a new animal by compiling different animal parts they have cut from old magazines such as *National Geographic*, *Ranger Rick*, *Zoobooks*, etc. For example, the new animal could have the head of one animal, the body of another, wings, and a horn.

Students can later participate in a class discussion to share their new animal's characteristics, their purpose, and how they help the animal adapt and/or survive in its environment.

Additional Resources:

The Bioluminescence Web Page

<http://biolum.eemb.ucsb.edu/>

The Brilliance of Bioluminescence- TED ED

<http://thekidshouldseethis.com/post/55598944417>

Interactive Sites for Education-Animal Adaptations

<http://interactivesites.weebly.com/animal-adaptations.html>

Images of 2008 Tomol Crossing

http://www.santaynezchumash.org/culture_tomol.html

Chumash Culture

<http://www.santaynezchumash.org/culture.html>

Chumash Tomol Crossing

<https://www.nps.gov/chis/learn/historyculture/tomolcrossing.htm>

Chumash Life

<http://www.sbnature.org/research/anthro/chumash/index.htm>

Design a Boat Challenge

[http://sp.mdot.ms.gov/Public%20Affairs/Documents/Sample%20Lesson%20Plan%20\(Design%20A%20Boat\).pdf](http://sp.mdot.ms.gov/Public%20Affairs/Documents/Sample%20Lesson%20Plan%20(Design%20A%20Boat).pdf)