

I Wish I Had Some Blubber!

Which Habitat Video: Florida Bay

Subject: Science, Language Arts, Math

Duration: 1 hour

Location: Classroom

Grades: 3rd to 7th

Next Generation Sunshine State Standards: SC.D2.2,
S.C.D.1.2., SS.B.2.2, LA.A.2.2

Key Vocabulary: mammal, insulation, herbivores, sea grass, turtle grass, manatee grass, shoal grass, widgeon grass

Materials

- Novel-*“Deadly Waters -A Mystery in the Everglades”* by Gloria Skurzynski & Alane Ferguson
- 1 cup vegetable oil
- 4 ziplock sandwich bags
- masking tape
- deep bucket
- cold water & ice cubes

Objectives

Students will be able to explain why manatees can not survive in cold water. Students will be able to explain the dangers of boat propellers to the Florida Bay sea grass habitat, and to the manatees. Students will describe four characteristics of the manatee.

Method

Students will participate in the experiment “ DO-IT-YOURSELF BLUBBER”.

Teacher will read to the class or the class will read out loud the novel, *“Deadly Waters-A Mystery in the Everglades”*.

Background

The Florida Bay is home to the manatee. Manatees are an endangered species. *“Deadly Waters”* is a mystery novel that takes place in the Florida Bay. The book’s plot is about manatees that are dying without an obvious explanation. Possible explanations: When water temperature falls below 68 degrees, the water can become deadly to the manatee because of their lack of insulating blubber. Boat propellers also pose a threat to the manatee. Boat propellers also destroy sea grasses of the Florida Bay. Sea grass, such as manatee sea grass, is a vital food source for the manatee. Threats to the manatee include: loss of habitat, fishing lines, crab traps, cold water shock & boat strikes. Biologists identify manatees by scars on their backs. Scars are from boat propellers. Manatees are herbivores that eat 10% of their body weight every day. Manatees can weigh 3500 lbs. Sea grasses, such as manatee sea grass are an important dietary staple of the manatee. Boat propellers destroy sea grasses. Florida Bay is great sea grass habitat with many different types of grass including; Manatee grass, Turtle Grass, Shoal Grass, and Widgeon Grass.

Suggested Procedures

1. Present Everglades Video “Mountains and Valleys: Florida Bay” to students

<http://www.nps.gov/ever/photosmultimedia/mountainsandvalleys.htm>

2. Present general information about manatees

3. Shows students pictures of seals, whales, penguins & manatees, (stuffed animals & toys work well). Ask the students for similarities & differences between the animals. Highlight

that all the animals are mammals, but the manatee is the only animal that can't survive in cold water. Manatees do not have the blubber for insulation that seals, whales and penguins use to stay warm. Water temperature that falls below 68 degrees F. can be deadly to the manatee. Manatees must find warmer waters like fresh water springs (Blue Springs State Park in Deland), water around power plants etc. to survive when water temperatures get to cold.

4. Students take part in the "Do It Yourself Blubber" experiment.

Method:

- a) Add vegetable oil to an open sandwich bag.
- b) Turn a second sandwich bag inside out and insert it in the first bag.
- c) Zip the inside bag to the outside bag so that the cooking oil is between the bags.
(Blubber glove = whale)
- d) Tape shut any gaps where the bags join.
- e) Connect the other two sandwich bags together in the same way, only without any oil.
(normal glove = manatee)

Each pair of bags becomes a glove.

f) Have students put each glove- blubber & normal- on their hands & place hands in the cooler of ice and water. Pull hands out when they get to cold.

Normal glove hand should get colder much quicker!

g) Explanation: Animals that live in very cold temperatures need to preserve body heat. The thick layer of body fat that insulates whales, seals & penguins is called blubber. The blubber prevents the animals body heat from escaping. Manatees do not have this thick layer of blubber.

Experiment is copied from "The Book of Totally Irresponsible Science" by Sean Connolly.

5. Read the book "*Deadly Waters*" to the students. If a class set of books is available students may take turns reading the book out loud (first 15 to 20 minutes of class). The book is approx. 150 pages long. It may take a couple weeks to complete the story.

6. Class discussions about the topics that the book highlights in the Florida Bay is led by the teacher. Sample topics from the book include: manatees, water quality, harmful effects of boat traffic etc.

7. Have students hypothesize why the manatees in the story are dying in the Florida Bay = the mystery of "*Deadly Waters*".

Evaluation

Discuss why the manatees are a threatened species. What human factors are threatening the manatee? What can be done about this problem?

Extension

Poor water quality from pollutants in the Florida Bay is the villain that is killing the manatees in the novel "*Deadly Waters*". Have the students research the factors that marine biologists test when determining water quality: salinity, turbidity, PH levels, nitrogen levels etc. A simple aquarium water testing kit can be used to test aquarium water or local canal water with the students in the classroom.