

**TEACHING KATE
TEACHING KIDS ABOUT THE ENVIRONMENT**

GENTLE GIANTS

Grade Level: 4-6

Time Required: 7+ class periods

SC Science Standards

This lesson plan was correlated with only the grade level specified unless otherwise noted.

Grade 4:

- I. A. 4. a
- I. B. 1. a
- II. A. 2. c
- II. B. 1. b
- II. B. 3. a

Grade 5:

- I. A. 4. a
- II. B. 1. b
- II. B. 2. b
- II. B. 4. e, f

Grade 6:

- I. A. 7. a

Purpose

Students will become familiar with the reasons why threatened and endangered animals should be protected and how protecting their environment affects our own. By spot-lighting the manatee and learning the reasons why it is endangered, students can better understand the plight of these gentle giants. They also will become more informed on how we can help protect their habitat. The students will adopt a manatee.

Skills

Cause and effect, creative writing, decision making, graphing, inference, research, surveying.

Concepts

Endangered and threatened animals; combining activities of people with needs of wildlife; conservation of an ecosystem; man's responsibility to the environment and its inhabitants.

Materials Needed

<i>A Coloring and Activity Book, Manatees</i>	manatee adoption application
<i>Sam the Sea Cow</i> by Francine Jacobs	<i>The Manatee</i> by Jean H. Sibbald
3 ring folders	overhead projector
wipe off markers for overhead projector	glue or tape
video - “The Best of the Manatees” - 30-minutes video featuring the manatees of Homosassa Spring State Wildlife Park	

Definition of Terms

<u>Ecology</u>	The study of living things in their environment.
<u>Endangered Species</u>	Any species which is in danger of extinction throughout all or a significant portion of its range.
<u>Environment</u>	Sum of all external conditions and influences that affect the development and ultimately, the survival of an organism.
<u>Extinction</u>	The irrevocable elimination of species.
<u>Habitat</u>	The physical place where an organism lives and grows.
<u>Herbivorous</u>	Plant eating.
<u>Manatee</u>	Large, slow moving mammal, gray or gray brown in color. They can grow up to 13 feet long and weigh up to 3,000 pounds. They are totally herbivorous, eating aquatic plants.
<u>Sea Cow</u>	Another name for the manatee.

Before the Session

Write or call for information, from Save the Manatee Club, on the manatee and how to adopt a manatee. Ask for “Manatee Fact Sheet” and especially the *Coloring and Activity Book, Manatees*.” If they do not have the coloring and activity book, write or call the Florida Department of Environmental Protection. Order *Sam the Seacow* by Francine Jacobs, *The Manatee* by Jean H. Sibbald and “The Best of Manatees” video. Read and study the fact sheet and preview the video. Save the Manatee Club, 500 N. Maitland Ave., Maitland, FL. 32751. (407) 539- 0990 or 1-800-432-JOIN.

Write or call for folders and *A Coloring and Activity Book, Manatees* to Florida Department of Environmental Protection, Office of Protected Species Management, 3900 Commonwealth Blvd. MS 245, Tallahassee, FL. 32399-3000. (904) 922-4330.

Look for other books and resources in your own library.

Background Information

See “Manatee Fact Sheet.”

One reason we are concerned about endangered species is because the extinction of most modern day animals such as the Carolina Parakeet, Stellar’s Sea Cow and Passenger Pigeon resulted from the actions of mankind. In 1950, the rate of loss was estimated to be one animal every 10 years. By 1979, it was estimated that one species of animal life was being lost every year.

*Passage of the Endangered Species Act of 1973 represented a sweeping advance over previous wildlife protection efforts in the United States. Earlier legislation had focused primarily on “game” mammals, birds and fish. Laws were mostly restrictive, telling hunters and harvesters what they could not do in terms of specific animals that could be taken and bag limits, and regulating trade in such items as pets, skins, feathers and ivory.

*The Act of 1973 offers protection to any member of the plant or animal kingdom, including subspecies, races and local populations, that is threatened by extinction. The law provides protection for endangered and threatened species in the United States and abroad. It prohibits hunting, killing, capturing, selling and importing or exporting flowers, hides, pelts, feathers, or other products from any endangered species. It also protects habitat critical for the survival of threatened species and requires plans to restore endangered species. It forbids units of government from undertaking any project that would harm endangered species. The Act also requires the government to prepare a list of all species that are endangered or threatened.

*Between 1970 and 1989, the number of species found only in the United states that have been placed on the official endangered and threatened list increased from 92 to 563. Another 508 species found in other parts of the world are also on the list. Recovery plans have been developed and approved for only about 51% of the endangered or threatened species native to the United States, and half of these plans exist only on paper due to lack of funding. Only a handful of species have recovered sufficiently to be removed from protection.

*Reprinted from Teaching Kids About the Environment Lesson Plans- For Teachers. January 1995. G. D. Kessler and L. J. Boller, Sr. Coalition for Natural Resource Education. p. 173.

Suggested Lesson Plan

Day 1

1. Introduce three vocabulary words: ecology, environment and endangered species. Ask students to give their ideas about these words. Write definitions on overhead and have them copy them into their notebooks. Give a list of endangered animals.
2. Show a picture of a manatee or use a plush manatee toy from Save the Manatee Club or a nature store. Ask students to identify this endangered animal. Give background information on the manatee.
3. Pass out the cover for the coloring book, *Manatees* and the page, “What does a manatee look like?” Review the description of the manatee. Then allow them to color both sheets. Paste or tape the first sheet on the cover of their folder.
4. Read the book *The Manatee* by Jean H. Sibbald. Discuss the story.
5. Homework: Have students write a paragraph about what they learned about the manatee. Add it to their learning log, journal or their manatee booklet.

Day 2

1. Allow volunteers to read paragraphs.
2. Discuss making a survey and have them copy two questions:
 - a. What is a manatee?
 - b. Where can you see them in their natural habitat?Have each student ask at least 5 people these two questions for homework. Tell them they must write down the answers.
3. Watch the video “The Best of the Manatees.” Have them list at least 5 facts they learned from the video.
4. Discuss what they learned and add to their list. Put list in manatee booklet. Tell them that tomorrow you will tell them about adopting a manatee for the class. Raise their level of expectation.

Day 3

1. Tally results of survey:
 - a. How many knew what a manatee was? How many did not?
 - b. How many knew where the manatee could be seen in its own habitat?

2. In groups of 4, have them make a graph to show this information. Display in room.
3. Discuss the adoption and membership information from the Save the Manatee Club. If you don't have enough folders for each student or group, make copies of the names and description of the manatees to be adopted. Discuss how to pay fees. Decide on a manatee.
4. Homework: Bring in money for the adoption fee. Look for any extra information on the manatee.

Day 4

1. Today, choose sheets and activities from the *Coloring and Activity Book, Manatees*. Discuss the information given and have students work on their manatee booklets individually or in groups. Go over any information that students may have brought.
2. Homework: Finish any sheets you deem necessary.

Day 5

1. Read the story *Sam the Sea Cow* by Francine Jacobs.
2. Give students a creative writing project. Have them write a story about Sam or another manatee (the manatee to be adopted would be a good choice). Illustrate the story. Finish for homework or continue the following day.

Day 6

1. Use this day to finish any materials and activities not yet completed. Finish booklet. Add story to booklet.
2. Plan a short program on what they have learned about manatees to do for another class or P.T.O.

Follow-up Day

1. When the adoption information comes back, use the pictures and materials the students have made to make a bulletin board display for other classes to see.

Application

By learning about the manatee in depth, the students will learn to care about the environment. They should also be able to transfer this knowledge into a better understanding of ecology. These

budding environmentalists should also realize that when we protect the environment for animals, we are also protecting ourselves. Many plants and a few animals are even now providing life saving compounds for man. One compound from an animal comes from sharks' livers. This compound helps slow down or even stop the growth of blood vessels to brain tumors. Without the blood vessels, a brain tumor cannot grow. Thus an operable brain tumor can be kept small so it will be easier to remove and the life expectancy for someone with an inoperable tumor may be greatly extended. With every plant and animal we lose to extinction, we lose not only a organism important for its genetic uniqueness, we also lose what may be a cure for some illness or disease.

Extension

See the thematic web centered around a study of ecology and a hands-on three day program at The Barrier Island Environmental Program on Seabrook Island, S.C. Also contact the marine section of the South Carolina Department of Natural Resources or the U.S. Fish and Wildlife Service to get information about manatees in S.C.

Resources Available

Ecology Science Series Grades 4,5,6. Lori Hagley. Milliken Publishing Co., St. Louis, MO. (Reproducible pages and teacher's guide.)

Elements of Ecology, 3rd ed. 1992. R. L. Smith. Harper Collins Publishers Inc.

Endangered and Threatened Wildlife of Kentucky, North Carolina, South Carolina and Tennessee. 1980. Warren Parker and Laura Dixon. A cooperative publication of the U.S. Fish and Wildlife Service and the respective state Agricultural Extension Services. (Clemson University Extension Service.)

Florida Power and Light Co., Environmental Affairs Department, P.O. Box 078768, West Palm Beach, FL. 33407-0768. 1-800-552-8440.

Sam the Sea Cow. Francine Jacobs. ETV Reading Rainbow program on book.

Scholastic News. Vol. 63, No. 4. September 23, 1994.

U.S. Fish and Wildlife Service, 3100 University Boulevard S., Suite 120, Jacksonville, FL. 32216. (904) 791-2580.

Prepared by: Evelyn Neal

**TEACHING KATE
TEACHING KIDS ABOUT THE ENVIRONMENT**

GENTLE GIANTS

MANATEE FACT SHEET

Name: West Indian manatee

Kingdom: Animalia

Phylum: Chordata

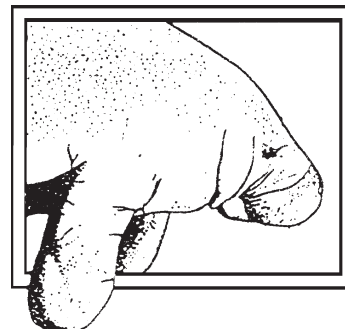
Class: Mammalia

Order: Sirenia

Family: Trichechidae

Genus: Trichechus

Species: manatus



Description: Large, seal-like body that tapers to a spatulate tail. Two forelimbs with three or four nails on each. Skin thick and wrinkled with stiff whiskers on upper lip.

Color, Size: Gray or gray-brown. Can grow to 13 feet and weigh over 3,000 pounds.

Behavior: Gentle and slow moving. Most of their time is spent eating, resting, and in travel. Often shy and reclusive. No system of defense and completely harmless.

Sight: Depth perception may be limited. Can differentiate colors.

Hearing: Can hear very well despite the absence of external ear lobes.

Communication: Emit sounds that are within human auditory range. They make sounds such as squeaks and squeals when frightened, playing, or communicating, particularly between cow and calf.

Breathing: Nostrils on upper surface of snout which close tightly like valves when submerged. Surfaces to breathe every few minutes depending on amount of activity.

Habitat: They can be found in shallow, slow-moving rivers, estuaries, saltwater bays, canals, and coastal areas, particularly where seagrass beds flourish.

Range: Within the United States, they are concentrated in Florida during the winter, but can be found in summer months as far west as Louisiana and as far north as Virginia and the Carolinas. The West Indian manatee can also be found in the coastal and inland waterways of Central and South America as far south as Recife, Brazil.

<i>Food Source:</i>	Aquatic plants. Manatees are completely herbivorous and can eat 10-15% of their body weight daily.
<i>History:</i>	Manatees are believed to have evolved from a wading, plant-eating animal, and share a common ancestor with the elephant.
<i>Related Species:</i>	West African manatee, Amazonian manatee, dugong, Steller's sea cow (extinct).
<i>Population:</i>	There are a minimum of 1,800 West Indian manatees left in the United States.
<i>Reproduction:</i>	Females are probably not reproductively mature until 5 to 9 years old and males not until 6 to 9 years. It is believed that one calf is born every 2 to 5 years. Twins are rare in the wild. Gestation period is around 13 months.
<i>Problems:</i>	Human related: Boat/barge collisions, loss of habitat, crushing or drowning in flood gates, poaching, ingestion of fish hooks and monofilament line, entanglement in crab trap lines, pollution. Natural: Cold related, red tide, disease.
<i>Conservation:</i>	Public acquisition and/or creation of sanctuaries in critical areas; research covering biology, mortality, behavior, habitat, and population; implementation of management plans; establishment of regulatory speed zones and the levying of fines for excess speeds in these designated areas; posting of regulatory speed signs in habitat areas; a MANATEE HOTLINE (1-800-DIAL-FMP) for reports of dead or injured animals or manatee harassment; manatee education and public awareness programs.
<i>Legal Protection:</i>	Florida Manatee Sanctuary Act, 1978; U. S. Marine Mammal Protection Act, 1972; U. S. Endangered Species Act, 1973.
<i>How You Can Help!</i>	Join the Save The Manatee® Club. Membership includes a manatee adoption. Funds go toward public awareness, education, research and lobbying. Call 1-800-432-JOIN.

TEACHING KATE
TEACHING KIDS ABOUT THE ENVIRONMENT

GENTLE GIANTS

BARRIER ISLAND ENVIRONMENTAL PROGRAM - SEABROOK ISLAND, S.C.
THEMATIC WEB

