Florida Sea Grant Extension—Manatee Program
Grades K-1

Objective:

Students will learn about manatees and their biology.

Projected outcomes:

Students will:

- learn that manatees are large animals that live in water in many parts of Florida
- learn that some things that people do can be dangerous to manatees and will be able to give an example.
- learn that manatees are similar in some ways to humans and different in other ways.

Classroom visit (approx. 30 minutes):

Introduce the people and the manatee to the class. Ask if anyone knows what type of animal “Mandy” is. Explain that you will be teaching the class about manatees. Ask if anyone knows if manatees live on land or in the water (water). Explain that manatees can live in fresh water (like rivers) and in salt water (like the ocean) and can swim back and forth between the two. Some people call manatees “sea cows.”

Activities:

1. Read the story “Mary Manatee.” Use squeaker toy to demonstrate squeaks. After reading the story, ask the following questions:
   a. How do manatees “talk” to each other? (with squeaks). What sense do they need to use? (Hearing)

   b. Are manatees plants or animals? (Animals).

   c. What do manatees eat? (Plants) What sense do they use to find their food? (Probably sight, although smell/taste could be possible answers)

   d. Can manatees breathe underwater or do they have to come to the surface? (Come to the surface)

   e. What dangers are there in the water for manatees? (Boats, canal gates, possibly people)

   f. What color are manatees? (grey) Pass around the piece of cloth that is similar to manatee skin in feel and color. Explain that people are not allowed to pet manatees in the wild because we do not want manatees to come close to boats and docks where they might get hit.
How are manatees like people? (Look at body parts—eyes, nose, mouth. Manatees breathe air. Manatees eat plants.) How are manatees different from people? (Manatees live in water; they are grey; they don’t have hair on their heads; they don’t have ear lobes [they do have ears, but they are small and difficult to see]; they talk using squeaks not words; they weigh more than people! People can hurt manatees, but manatees don’t hurt people)

i. Prompt questions could include: Which is bigger, a manatee or a human? What color are manatees? What body parts does a manatee have that people also have? Can manatees hear? See? Taste? Touch? Smell? (yes to all).

2. Show pictures from the book (Mikey learning to come to the surface for air, Mikey with little girl, Mikey and Mary on opposite sides of the canal gate, Mikey doing a barrel roll). Ask the class to put them in the correct order. Use Velcro/felt board or storyboards and easels.

3. Show pictures of various items from the story (boat, people, manatee, plant, canal gate, fish, dock). Ask the class to help you sort them into living and non-living items (on felt board or using powerpoint).


Post-visit activities:

1. Manatee puppet activity (art)

2. Manatee wordsearch

3. Sirenian Survival activity (Sea World-threats to manatee survival)

4. Sirenian Speech (Sea World-vocabulary activity)

5. Home is Where the Grass Is (Sea World-art activity)

6. Fat, flippers & faces (Sea World-adaptations)

Resources to give to teachers:

Manatee publication from FPL or teacher guide from Save the Manatee Club
Standards addressed:

| LA.K.3.2.1          | The student will draft writing by drawing, telling, or writing about a familiar experience, topic or text |
| LA.K.1.7.3          | The student will retell the main idea or essential message, identifying supporting details (e.g., who, what, when, where, why, how), and arranging events in sequence |
| LA.1.1.7.3          | The student will retell the main idea or essential message, identifying supporting details (e.g., who, what, when, where, why, how), and arranging events in sequence |
| SC.K.L.14.1        | Recognize the five senses and related body parts. |
| SC.K.L.14.3        | Observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do |
| SC.1.L.14.1        | Make observations of living things and their environment using the five senses |
| SC.K.L.14.2        | Recognize that some books and other media portray animals and plants with characteristics and behaviors they do not have in real life |
| SC.1.L.14.3        | Differentiate between living and nonliving things. |
| SC.1.N.1.2         | Using the five senses as tools, make careful observations, describe objects in terms of number, shape, texture, size, weight, color, and motion, and compare their observations with others. |
| SC.K.N.1.2         | Make observations of the natural world and know that they are descriptors collected using the five senses. |
| SC.K.N.1.4         | Observe and create a visual representation of an object which includes its major features |
| SC.1.L.16.1        | Make observations that plants and animals closely resemble their parents, but variations exist among individuals within a population. |
Pictures to use with Living or Non-Living Activity (print out, laminate and put Velcro on reverse side)
Eichornia crassipes
Water hyacinth
Photo by Vic Ramsey
Copyright 1993 University of Florida
Manatees and Marine Turtles
Counting Activity

Did you know that there are only around 3,500 manatees that live in Florida’s waterways? Think about how many students are at your school. If all of your schools’ students went to Florida’s coast and spread out, would it seem like a lot of students?
Make Your Own Paper Bag Manatee Puppet

What you need:
1. Manatee body part sheet
2. Paper lunch bag
3. Scissors
4. Clear tape
5. Markers or Crayons
6. Imagination

1. Take a manatee part sheet and color the manatees head, lower lip, left flipper, right flipper and tail.
2. When you are finished coloring the body parts cut the out.
3. Take a folded paper lunch bag and place it in front of you with the fold facing up and the bottom of the bag farthest from you.
4. Tape the manatee head to the bottom of the bag.
5. Tape the lower lip right underneath the fold.
6. Just below the lower lip tape the flippers to each side of the bag.
7. Tape the tail on so that it reaches past the opening of the bag.
8. Draw the body by drawing a line from the tail to the flipper and up to the lower lip on each side of the manatee.
9. Color the parts inside the lines to look like a manatee.
10. Color the parts outside the lines to look like the manatees habitat.
11. Enjoy your manatee puppet.

Length: 12 plus feet
Weight: over 3,500 pounds
Color: Gray to gray-brown
Food: 100 pounds of aquatic plants a day
Reproduction: One Calf every 2 to 5 years
Range in US: North Carolina to Texas, mainly in Florida
Location: Rivers, canals, estuaries, saltwater bays, and occasionally the open ocean

Florida Oceanographic Coastal Center ● 890 NE Ocean Blvd. ● Stuart, FL 34996 ● (772) 225-0505 ● www.fosusa.org
Color the parts of the manatee and cut them out.
**Manatee Wordsearch**

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**MANATEE**
**FLIPPERS**
**MAMMAL**
**LUNGS**

**HAIR**
**SWIM**
**PLANTS**
**BIG**

**HEAVY**
**GENTLE**
**SEACOW**
**ENDANGERED**

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This material has been prepared with a grant from the Florida Fish and Wildlife Conservation Commission, Advisory Council on Environmental Education and is the sole property of the state of Florida.
Sirenian Survival

OBJECTIVE
Students will name four reasons why manatees are endangered.

MATERIALS
- small paper plates (2 per student)
- glue
- scissors
- paper fasteners
- construction paper copies of tail, flippers, and head on page 29
- triangle pattern on page 29
- copies of the habitat hazards wheel on page 30
- crayons

ACTION

1. Hand out a copy of the habitat hazards wheel and a paper plate to each student. Lead them in a discussion about each of the pictures. The pictures show hazards manatees face in their environment. They include:
   - **crab trap lines** which have been found wrapped around manatees' flippers, tails, and even their entire bodies, cutting off circulation.
   - **motor boats with propellers** that accidentally cause serious injuries either from impacting with the manatee or actually cutting them with the sharp propeller blades.
   - **fishing line** which manatees sometimes eat accidentally or become entangled in.
   - **dredging**, a method of widening and deepening canals and rivers for boat traffic, this eliminates manatees' food supply by scooping up aquatic plants growing on the surface and at the bottom.

2. Have the students color the pictures on the habitat hazards wheel and then glue it to one of their paper plates. Set this paper plate aside.

3. Give each student another paper plate and a copy of the manatee's tail, flippers, head, and triangle pattern to cut out.

4. Instruct the students to place the triangle pattern on the edge of the second paper plate and trace it. After they trace the pattern, have them cut it out. Place the cut-out plate on top of the wheel-of-trouble plate and put a fastener in the middle of both plates.

5. Have the students turn the two paper plates over. Instruct them to glue the manatee's head, flippers, and tail on this side. Turn it back over and color eyes, nostrils, and whiskers on the manatee's face.

6. Let the students turn the habitat hazards plate and look at the pictures through the “window.” Review each of the hazards manatees face in their environment. Let the students come up with other threats to the manatee's survival. Have the students name some things they can do to help make the manatees' environment safer. See page 6 in the “Manatees’” section for suggestions on what they can do to help manatees.
triangle pattern to create window
Sirenian Speech

OBJECTIVE

Grades: K-1
Students will develop a list of words that describes manatees and their environments.

MATERIALS

☐ manatee pictures
☐ butcher paper
☐ construction paper
☐ markers

ACTION

1. Show the class a picture of a manatee and the environment in which it lives. How many words can they use to describe this animal? How many words can they use to describe the manatee’s environment? Using the marker and a piece of butcher paper, write all the words the students list.

2. After students run out of words, go over the list with them again. Point to the first word, read it out loud, and then have the students read it with you. Do this with each word on the list.

3. Give each student a piece of construction paper and crayons so they can draw a manatee in its environment. Then have them write the describing words on their picture.

4. Mount the butcher paper with the words on the classroom wall or on a bulletin board. Display the pictures the students drew around the butcher paper when students have completed them.

A manatee pokes its nostrils above the surface to breathe. The average interval between breaths is two to three minutes.
Home is Where the Grass Is

OBJECTIVE

Students will learn the coloration and habitat of manatees and how manatees are camouflaged to blend into their environment.

ACTION

1. Hand out copies of the white construction paper manatees and have the students cut them out. You may need to cut out the manatee for younger students.

2. Spread out newspaper to cover areas where students are working and give each student two paintbrushes, paintwash, and a paper manatee.

3. Using a paintbrush, have the students stir the paintwash and apply it to the manatee, covering it entirely.

4. After the manatee is completely painted, set aside and let dry for at least one hour. Collect the paint cups and used brushes from the students. Pass out a 12"x 18" sheet of white paper and cups of gluewash to each student.

5. After it has dried, have the students glue the manatee on the paper, paint side up. Give each student strips of blue and green tissue paper. One at a time, have the students dip the strips of paper in the gluewash and lay them vertically and diagonally on the white construction paper. Make sure students leave space in between the strips of tissue paper (some may overlap depending on the direction they're applied). Students may also lay the dry strips on the paper and gluewash over them.

6. After all strips are applied, have the students use the paintbrush to dip into the gluewash and paint over the entire page. This will make the colors of the tissue paper blend in and give the appearance of water. Let the entire picture dry for at least one hour. When it's dry, they'll be able to see how well manatees are camouflaged to live in their homes.

7. Display the projects after they're completed. Use them as a counting exercise and count the "plants" (green strips) on different pages. Discuss differences. Have the students tell stories about the position of the manatees on the pages. Is the manatee swimming to the top of the water to breathe? Is it looking for its mother? Where would it go to get away from a boat? Encourage creativity!
BACKGROUND INFORMATION

Manatees are mammals that live in warm, fresh water and seawater. The West Indian manatee found in Florida waters can weigh up to 545 kg (1,200 lb.) and reach 3.1 m (10 ft.). They usually swim slowly or float at the surface. To feed, they make shallow dives (not more than 10 m (33 ft.)) to grab aquatic plants including manatee grass, turtle grass, water hydriilla, mangrove leaves, and water hyacinth. All manatees are herbivores (plant eaters). An adult manatee may eat four to nine percent of its body weight, between 22 to 50 kg (48-108 lb.) each day.

MATERIALS

For each student group:
- wide-mouth pint jar
- white construction paper manatees (see pattern on page 3) enlarged 200%
- 12" x 18" sheets of white construction paper
- cups of black paintwash (two tsp. of black paint per five oz. of water)
- ten strips of blue tissue paper per student
- ten strips of green tissue paper per student
- cups of gluewash (one tsp. of glue per five oz. of water)
- paintbrushes
- newspaper

In winter, manatees live in warm-water rivers off coastal Florida. Some need to be rescued when they get tangled in nets or hit by boat propellers.

From Manatees K-3 Teacher's Guide, a SeaWorld Publication.
Fat, Flippers, and Faces

OBJECTIVE
Students will be able to name four manatee adaptations.

MATERIALS
- potatoes
- toothpicks
- construction paper patterns of tail and flippers (on page 21)
- glue or tape
- markers

ACTION

1. Lead the students in a discussion about adaptations. Ask them to define the word adaptation. An adaptation is a body part, behavior, or an ability the animal has to survive in its environment. Ask the students if they can name adaptations they have. We have adaptations like thumbs to help us grasp things, feet to stand on, and legs to run with. We have three different-shaped teeth in our mouths to help us bite and chew our food.

Ask the students if they think a manatee has adaptations. Can they name some of the manatee's adaptations? Manatees have a large, flat tail that helps them swim, they have flippers for steering, whiskers for finding things in murky water, and a dark gray or brown color for camouflage.

2. Hand out a construction paper copy of the manatee’s flipper and tail to each student, along with a toothpick. Have the students cut out the flippers and tails and break the toothpicks in half. Demonstrate how to glue or tape the toothpick onto one side of each flipper and on the tail.

3. Demonstrate how to stick the flippers and tail into the potato. Lead the students in a discussion about how manatees use these adaptations to survive. Manatees use their tails to propel themselves through the water. They use their front flippers to steer and to guide food into their mouths.

4. Have the students draw the eyes, nostrils, mouth, and whiskers on the manatee while discussing each of these adaptations. Discuss the well developed eyes which help the manatee detect objects underwater, the nostrils on top of the snout for easy breathing at the surface of the water, the mouth with its flexible lips to help the manatee grasp aquatic plants, and whiskers to help them locate food in murky water.

DEEPER DEPTHS
Give students another set of supplies and have them create a dolphin. Compare and contrast a manatee's and dolphin's adaptations.