

Florida Bay Bistro

(Adapted from the Florida Bay Estuary Program's "Marsh Menu")

Video: Everglades Mountains and Valleys- Chap 8 "Florida Bay"

Subject: Science, Language Arts

Duration: 1-2 hours or class periods

Group Size: Any

Setting: Classroom (outdoors optional)

Grade: 4-5

Standards:

Common Core: LACC.4.L.1.1., LACC.4.L.1.2., LACC.4.L.2.3., LACC.4.L.3.6., LACC.4.RI.2.4., LACC.4.SL.2.4., LACC.4.W.1.2., LACC.4.W.3.7., LACC.5.L.1.1., LACC.5.L.1.2., LACC.5.L.2.3., LACC.5.RI.1.3., LACC.5.RI.3.7., LACC.5.RI.3.9., LACC.5.SL.1.2., LACC.5.W.1.2., LACC.5.W.3.7.

NGSSS: SC.4.L.17.2., SC.5.L.17.1., LA.4.1.6.1., LA.4.1.6.5., LA.4.3.5.3., LA.4.4.2.1., LA.4.4.2.4., LA.4.5.2.1., LA.4.5.2.5., LA.5.1.6.1., LA.5.1.6.5., LA.5.3.5.3., LA.5.4.2.1., LA.5.4.2.4.

Vocabulary: Producers, consumers, omnivores, carnivores, herbivores, decomposers

Objective(s)

Guiding Question: What food chains are found in Florida Bay?

Critical Content: Learn about the marine and wildlife in Florida Bay, and their unique roles as consumers, producers, or decomposers. Complete a food chain after research and present it in the form of a menu.

Materials

- Examples of menus
- Markers and Crayons
- Pens and Pencils
- Scissors
- White Paper
- Construction Paper
- Glue
- Tape
- Internet access or reference materials on Florida Bay marine and wildlife

Student Objectives: Students will...

- Define and understand the concept of a food web or food chain.
- Describe how creatures play the role of producer, consumer, or decomposer and compare and contrast their unique properties.
- Research the marine and wildlife of Florida Bay using video, reference materials, and the internet.
- Use creative writing skills to create a Florida Bay food chain “menu” for a selected single animal.

Method Florida Bay is home to a wide variety of consumers, producers, and decomposers, all who exist together to form a food web. In this lesson, the students will learn about Florida Bay by learning facts about its inhabitants. Afterwards, the students will gather information on a particular creature’s dietary habits and food web. Students will use their creativity to develop a menu describing what that Florida Bay animal might eat or “feast upon”.

Background

Florida Bay is one of the distinctive habitats located in Everglades National Park. It is the park’s lowest, saltiest and wettest habitat, and is where the fresh water empties from the mainland. The Bay is a huge shallow basin of brackish to salty water and its floor is covered in mud. In the areas where the limestone is higher in elevation, hundreds of “keys” or islands were formed and are surrounded by mangroves. The Bay is influenced by extreme high and low tides that occur twice each day. Numerous marine, avian, and plant species reside in the Bay, including dolphins, manatees, American crocodiles, ospreys, snappers, and four species of sea grass (Manatee, Shoal, Widgeon, Turtle).

As in any habitat, Florida Bay has a fascinating and clearly defined food web connecting all of its inhabitants. It is much like a giant restaurant with a number of different dining options for the creatures that live in and around the Bay. Many of the plants (producers) have developed special adaptations to survive in this salty environment, allowing creatures (consumers) to thrive in healthy conditions.

Examples of food web categories are as follows:

Producers: Plants and algae that use photosynthesis to convert sunlight into energy in the form of sugar stored within their structures. They produce their own food and do not rely upon other flora or fauna to survive. Sea grasses would be an example of producers in Florida Bay.

Consumers: Consumers are organisms such as animals and humans that cannot create their own food. In Florida Bay, this would include non-plant/algae organisms.

Herbivores: Herbivores are organisms that only consume plant material. They obtain energy by consuming the producers and the energy they have stored as sugar. They are primary consumers. A manatee would be an example of an herbivore in Florida Bay.

Carnivores: A carnivore is an organism that only consumes other animals, never plant material. They are secondary consumers. Examples of carnivores in Florida Bay would include ospreys and dolphins.

Omnivores: Omnivores consume both plants and other animals in order to obtain energy. An example of omnivores in Florida Bay would be loggerhead turtles and even humans!

Decomposers: Organisms that eat dead, rotting material are decomposers. The dead organic matter can come from either plants or animals. Examples of decomposers in Florida Bay would include bacteria, fungi, shrimp, and starfish.

Food Chain: A single line, from producer, to herbivore, to carnivore, to omnivore, and then decomposer.

Food Web: When food chains cross over each other A fish may be eaten by a bear or a bird. An insect may be eaten by a fish or a frog. These food chains all happen at the same time, and their straight lines cross and may produce a diagram that looks more like a spider's web.

Suggested Procedures

- Show students “Florida Bay” Chapter 8 of the “Everglades Mountains and Valleys” Video. You may also want to include Chapter 7 “Mangroves”.
- Review with students the concepts of a food chain and food web, as well as the roles of producers, consumers, and decomposers. Once the students have an understanding of a basic food chain and how they can apply it to creatures in Florida Bay, students can then use their research skills and creativity to apply what they have learned.
- Students will create a menu from a “Florida Bay Bistro”, instead of a traditional food chain or web “tree”. The teacher can structure the requirements however they would like to do so. One suggestion is for the students to produce a minimum of either four pages in their menu or a set number of pre-determined entries (such as menu items for two carnivores, two herbivores, two omnivores, etc.). The restaurant name could be whatever the student chooses. They may wish to create a theme menu such as “Crab Cuisine” or “Fishy Foods”. In this case, the menu items would reflect the tastes of a certain grouping of animals instead of a variety of creatures.
- Give students access to necessary reference materials including books, periodicals, and the internet. You can also supply them with the suggested list of Florida Bay wildlife included in this lesson plan. Students should select the Florida Bay creatures to be included in their menu and then use the reference materials to determine that creature's dietary needs. They will then use the information they collect about the animal's diets to create entrees on their menus. Students may want to plan out the menu on scratch paper before they create the actual menu.
- Each entry should include the dish's title, a description, and a clue as to its “suggested serving” – a bit of information as to whom the dish is intended. Students will write, proofread, and edit their entries just as a real restaurant owner would. Each menu should include a front cover with the title

of the student’s restaurant, the interior pages of the menu, and a back cover. Pass out samples of different menus (take-out menus are great to use) to give the students ideas on how to set up their menus.

- Once the students have finished their menus, invite them to share them with the class. Each student can present his or her “restaurant” and highlight some of their location’s special dishes.

Florida Bay Wildlife (Sample List)

American Crocodiles	Egrets
Alligators	Ospreys
Green, Kemp Ridley, Hawksbill, and Loggerhead Turtles	Cormorants
Bottlenose Dolphins	Sandpipers
West Indian Manatees	Pelicans
Caribbean Lobsters	Seagulls
Stone Crabs	Bald Eagles
Pink Shrimps	Snappers
Raccoons	Tarpons
Opossums	Sharks
Bobcats	Sea Bass
Fox Squirrels	Groupers
Flamingos	White, Black, and Red Mangroves
Hérons	Manatee, Shoal, Widgeon, Turtle Sea Grasses
Roseate Spoonbills	

Evaluation

- Define food chain and food web.
- Compare and contrast consumers, producers, and decomposers and give two examples of each existing in Florida Bay
- Compare and contrast herbivores, carnivores, and omnivores and give two examples of each existing in Florida Bay

Extension

- Students can use craft materials to design and build an attractive setting for their menu that reflects the Florida Bay habitat, its creatures, and its features.
- Discuss some of the factors that could influence the health and balance of Florida Bay's food web.

Additional Resource

www.tbep.org/pdfs - Florida Bay Estuary Program

http://dnr.state.il.us/lands/education/CLASSRM/wild_mammals/pdf/unit2_3.pdf - Gives additional information on consumers, producers, carnivores, herbivores, and omnivores.