

MAKE A MANGROVE TREE HABITAT

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Summary

Mangrove trees are trees that live in salty environments – they can obtain freshwater from saltwater. Some secrete the salt through their leaves, others block the salt in their roots. Mangrove forests create an ecosystem that traps and cycles organic materials, chemicals, and important nutrients. Mangroves also provide protected nursery areas for fish, crustaceans and shellfish. They also provide food for many marine animals as well, including fish, oysters and shrimp. Many animals, such as the sawfish, find shelter either in the roots or branches of mangroves. Mangrove branches are nesting areas for many coastal birds, including brown pelicans and roseate spoonbills.

Key Concepts

Mangrove trees live in salty environments.

Mangrove trees, branches, and roots provide shelter, food and protection for a wide variety of marine life.

Standard: 5-LS2-1. Develop a model to describe the interaction between plants and animals in the environment.

Objectives

Students will research and identify the three different types of mangrove trees, the plants and animals that live in a mangrove forest and how the different organisms rely on each other for survival.

Students will create and explain a model of a mangrove tree complete with leaves, roots and coastal animals.

Materials

Pictures of samples of red, white and black mangrove trees (i.e. bark, seed pods) mangrove diagram handout (http://www.exploringnature.org/graphics/state_by_state/Florida_mangrove_coloring72.jpg) clear plastic water bottles with bottom 3 inches cut off aluminum foil papier mache brown, black and white paint tissue paper leaves glue white paper crayons computer/internet access

Procedure

- Introduce the lesson by showing samples or pictures of mangrove trees. Talk about how the samples are similar and different. Ask students to describe the things a tree needs to survive and list these on the board. Circle the word “water” and ask students what can of water a tree needs to grow. Elicit the word “fresh water” and tell students that today they will be learning about a very special type of tree – one that lives in salt water.
- Show a picture of a mangrove tree and have students make observations. Draw student’s attention to the leaves and roots. Note how the roots and branches sit in water – saltwater. Explain that some mangrove trees take in salt through their roots and turn the salt water into fresh water by getting rid of the salt through their leaves. Other mangroves can block the salt in their roots. Because mangroves can live in saltwater, they provide a very important and special environment for many coastal animals. Explain to students that mangrove forests provide:
 - Food
 - Shelter
 - Protection
- Distribute the mangrove diagram and discuss each of the animals they see. Talk about how the arrows on the diagram show different parts of the food chain – energy from the sun creating chlorophyll in plants, plants creating food for fish, fish creating food for larger fish, etc. Emphasize how mangrove forests create a food chain for many different species. Point to the branches, leaves and roots of mangroves. What animals can they see? Ask students why those animals might be there. Discuss how these parts of the mangrove tree can provide a place for animals to live, hide and raise babies. Tell students that they will now be using research to create a model of a mangrove tree.
- Direct students to computers and have them use the search engine to research the different animals that live on, around and under the mangrove. Have them draw and color the animals they see (make sure the pictures are small enough to fit in “branches” and inside the “roots” of the bottle model).
- Once the pictures are drawn, have students select a cut-off bottle and, using tape and aluminum foil for an armature, create branches and

roots (see drawing). Mix up the papier mache and have students cover the armature and allow to dry. Once dry, students can use paint for the tree "bark" and cut and glue tissue paper leaves to the branches.

Students may then cut out and glue their animals to the tree and bottle

(have them glue the marine animals on the INSIDE of the bottom part of the bottle so it looks like they are underwater.)

- When trees are finished have each student present theirs and explain who is where and why they are there.

Assessment

Teachers may create a rubric to assess student understanding.