Mangrove Island

Students will learn how red mangrove islands are formed and why they are beneficial.

Objectives:

Students will be able to explain how red mangrove islands are formed and why they are beneficial, and will be able to name at least three species of wildlife that are associated with the red mangrove.

Materials:

Two large pictures included in this activity, 6 - 10 blindfolds.

Methods:

Students become either mangrove islands or mangrove seedlings.

Subjects:

Art, Science, P.E.

Duration:

30 to 45 minutes

Location:

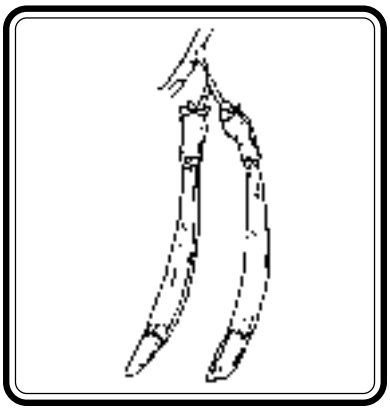
Outdoors, classroom, gym, or cafeteria.

Related Activities:

Circle Round and Round, Everglades ABC's, Shapes in Nature

Florida Sunshine State Standards:

SC.F.1.2.2 SC.H.1.2.4



Background

Mangrove swamps are a very important habitat in South Florida. Mangroves extend across Florida Bay, as far north as Tampa on the Gulf Coast, and to Daytona Beach on the Atlantic seaboard. It is in the mangroves where the **fresh water** from the Everglades meets the **salt water** from the tidal flats, creating a **brackish** water **estuary**. The red mangroves are salt tolerant trees found in this transition zone. The red mangrove is particularly interesting in the way it reproduces and in its role as an island builder. The flowers of the red mangrove are most abundant in the summer months. They mature into **seeds**, also called **propagules**, which sprout while still on the tree. These seeds are often referred to as pencils because of their shape. When the pencil seed ripens, it drops off the tree and either lands in the soft bottom below or is carried away by currents and tides. The seed is **buoyant** and can travel for months bobbing along vertically in the water until it becomes embedded in a shallow area. Once the seedling is "planted," it begins to develop prop roots and grows into a large tree. The **prop roots** help to stabilize the tree in the water. Sand, **detritus** (decomposed plants and animals), and sediment begin to collect around the roots. As sediments accumulate, more suitable locations are created for other wandering pencil seeds. Eventually a mangrove island may form.

Mangrove forests are very beneficial as they are the first line of defense, protecting the mainland when high winds or a hurricane hits. They also provide shelter for wildlife and are a vital part of the food chain. Mangroves provide a **nursery** for shrimp, fishes, crabs, and other marine animals. The animals are relatively protected in this environment until they are large enough to move out into deeper, more open waters. Red mangrove prop roots provide shelter and/or a home for many marine organisms, including barnacles and coon oysters. Mangrove leaves become a part of the food chain and provide a feeding ground for many species of wading birds.

The red mangrove is located the furthest seaward, growing in close association with the black mangrove. Finally, located even further inland, is the white mangrove.

Procedure

1. Before you begin the activity, show students the pictures and explain the vocabulary in **bold type** in the background section. (See vocabulary.)

2. Choose 6 - 10 students to be mangrove seeds and put blindfolds on them.

3. Turn your remaining students into mangrove islands. Putting 4-5 students together, have them each form their own circle island by joining hands. Once your islands are set, spread the mangrove seeds out and twirl each seed three times.

4. On your signal "mangrove island," have the seeds begin moving. If the seeds encounter another mangrove seed they each say "mangrove," and continue moving. If any seed bumps into an island, the island remains silent. The mangrove seed then takes off their blindfold and joins the island. Continue play for about 5 minutes.

Extension

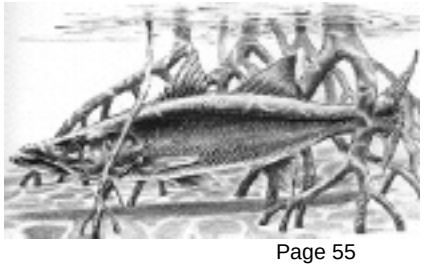
What would happen to the mangrove islands if the seeds got a disease that didn't allow them to float? What might happen to the food chain if a hurricane uprooted thousands of acres of mangrove trees?

Manatee

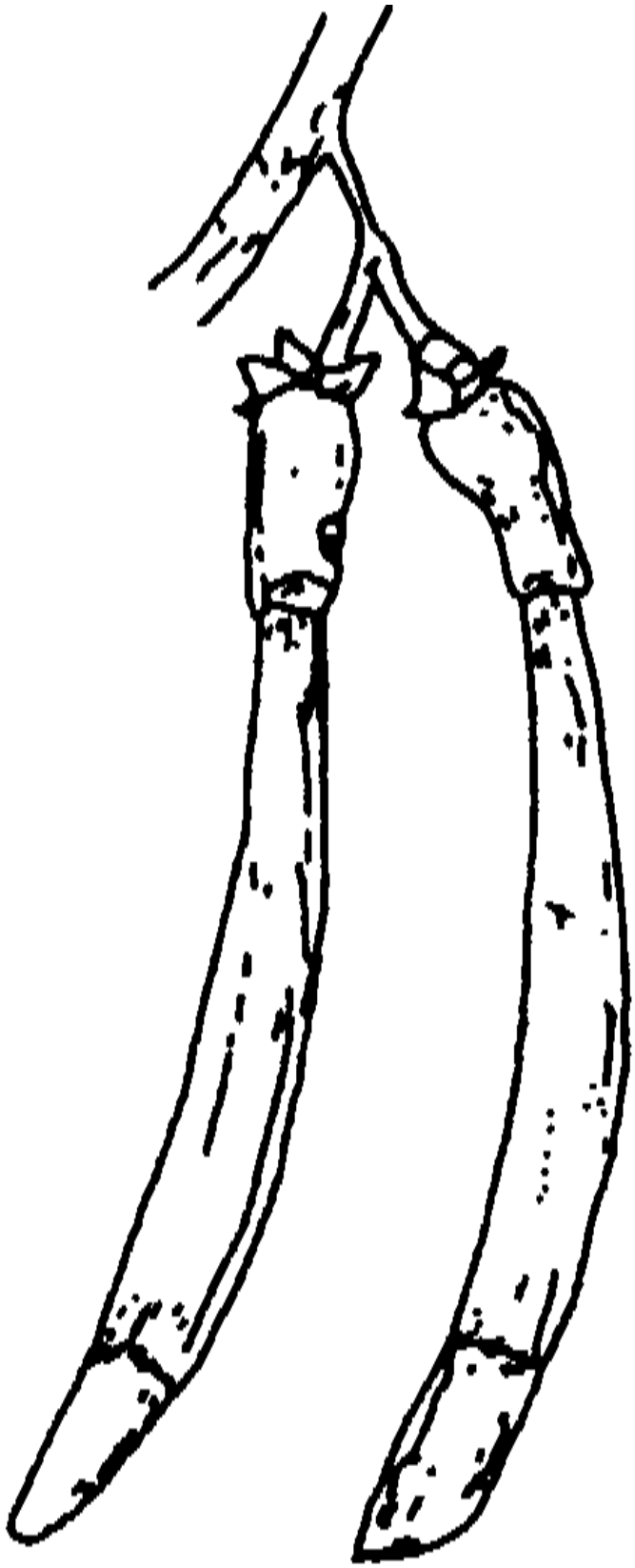
Important Words

Buoyant
Brackish water
Detritus
Estuary
Fresh water
Mangrove
Nursery
Propagule
Prop roots
Salt water
Seeds

Snook
and
Red Mangrove Roots



Red mangrove with propagules (hanging seed pods) and arched, spider-like prop roots.



Red mangrove propagules (seed pods)