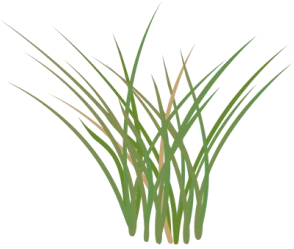
North Carolina Coastal Federation
Working Together for a Healthy Coast

Living Shoreline Shuffle (Blindfold Game)

Adapted from the "Sand Pile" National Park Service lesson plan



Subject: Science
Standards:
NC Essential Science- 3.L.2, 4.E.2.3, 4.L.1, 5.L.2.1, 5.L.2.3, 8.E.1.4
Length: 20 minutes
Location: Outdoors
Materials: Blindfolds

Objective: To demonstrate how marsh grasses and living shorelines help stabilize estuarine shores.

Method: Students will play a game to demonstrate how marsh grass roots hold the soil in place.

Background: Salt marshes are very important coastal ecosystems. These coastal wetlands are dominated by grasses and covered by salt water tides at various times throughout the day. The grasses in a marsh are important because they:

- provide food and shelter for many creatures
- serve as critical nurseries for important marine species, including crabs, shrimp, and juvenile fish
- soak up and filter pollutants from stormwater runoff, the number one source of pollution along the coast
- protect the land from wave energy, storm surges and tides by slowing down wave activity
- provide aesthetic value, enhanced views, and a sense of place
- supply oxygen through photosynthesis

The most common salt marsh grass in North Carolina is *Spartina alterniflora* or Smooth Cordgrass. The roots and rhizomes spread and connect together to help collect muddy marsh soils. This works to provide a sturdy foundation for the marsh itself.

The NC Coastal Federation works with volunteers and partners to plant marsh grasses for Living Shorelines. A Living Shoreline is an alternative method of shoreline stabilization which protect shores from erosion but is "living" as well because it incorporates natural elements and provide habitat for living plants and animals.

Procedure:

- Discuss salt marshes and living shorelines and what makes them special.

- Explain to the students that they will actively show how a salt marsh/living shoreline works to hold soil in place. Explain the activity: Each student represents a grain of muddy soil except for one student who you will tap to become the Spartina grass. On signal everyone will move around (representing the wind blowing, or a wave moving them around). When they come in contact with someone they say "soil". Only the Spartina grass keeps quiet. When the students get no response to saying "soil" they have found the Spartina grass. If they hear nothing, they hook elbows (Spartina grass catching the sediment) and stand still. Once connected to the Spartina grass, the students should make no response when more muddy soil comes in contact.

- Hand out the blindfolds. Have students put on blindfolds and then tap one student on the shoulder. This student represents the Spartina grass. Let the fun begin! Be sure that adults are standing on the perimeter to make sure everyone stays within a safe boundary and distance. Once everyone has found the Spartina grass, have students remove blindfolds and see what happened. The result should be everyone clumped together--like a healthy marsh.

Evaluation:

Ask students review questions to evaluate their understanding. Some examples:

- What things cause the soil to move or erosion to occur along a shoreline? *Boat wake, wind, storms and wave action*.
- Why is the marsh grass important?
- Why are living shorelines a good way to protect estuarine shores from erosion vs. hard structures like seawalls or bulkheads?
- Why do you think Living Shorelines have the word “living” in the name?

Extension:

- Explore a living shoreline with small dip nets or a seine net to see what types of creatures call it home.
- Work with the NC Coastal Federation or a similar organization to help plant a living shoreline.
- Research different plants and animals that may live in the salt marsh or along a living shoreline.