Wetland Model, Option 1

Adapted from Ranger Rick's Nature Scope, 1997
& Saratoga Springs Open Space Project

Through creating a wetland model, students will become familiar with the processes of wetlands and their ecological function.

Objectives-

- Understand and explore wetlands and their ecological function.
- 1-2 medium sponges (to remove water from model)
- Jar of muddy water
- Jar of clear water

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Background Discussion-

Begin the activity by asking students to create a list of the characteristics about different types of wetlands (freshwater and salt marshes, freshwater swamps, mangrove swamps, and bogs). Discuss which characteristics you would expect to find within each of the three communities in Bog Meadow Brook; the forested wetland, open marsh, and wet meadow.

Building the Model-

1) Spread modeling clay over ½ of the roasting pan to represent land. The empty portion of the pan represents a lake or body of water.

2) Shape the clay so that is gradually slopes toward the water body.

3) Use the carpeting to create a wetland buffer between the land and the water. The carpeting should cover the entire width of the pan along the edge of the clay.

4) As you build the model, be sure to explain how each added piece represents a portion of the wetland. Discuss that scientists know that wetlands are complex natural systems that are important for filtering pollutants, reducing flood damage, and preventing soil erosion.

Demonstrating Flood Control-

1) Pour water slowly over the land surface. Discuss what happens with the students. Some of the water is slowed by the presence of the wetland. The excess, that the wetland cannot absorb, flows into the main water body. Slowing the speed of runoff is important ecologically because it prevents extensive erosion and decreases sedimentation.

2) Remove the carpeting and water from the model. Pour the same amount of water as before on the same spot in the model. Discuss the difference that the presence of the wetland makes on runoff with students. The runoff will have filled up the body of water much quicker because it is no longer buffered by the wetland. Explain that most wetlands are shallow basins that collect water.

Demonstrating Water Purification-

1) Remove the water from the model and replace the piece of carpeting with a dry piece. Pour the muddy water over the land surface and discuss what happens. Compare the water that reaches the body of water to the water left in the jar. The water should be cleaner after it passes through the wetland. The mud can represent pollution, sedimentation, or nutrients. Wetland help protect water bodies, like Saratoga Lake, from pollution, sediments or nutrients carried by the water.

2) Remove the carpeting and the water. Repeat the experiment with muddy water. What happens to the water body without a wetland in place?