Wetland in a Pan:

Concepts Covered

- Wetlands act as a buffer zone between dry land and bodies of water.
- Destroying wetlands can cause serious flooding.
- Wetlands help trap excessive amounts of pollutants and silt.

Goals for the Lesson

- The students will describe relationships among precipitation, runoff, and wetlands.
- The students will relate the importance of wetland functions to their own needs and daily lives.

Materials Needed

- modeling clay
- long shallow pan
- a sponge
- watering can
- cup of soil
- jar of muddy water

Teaching Methods: Introduce - Activity - Conclude

State Standards Addressed: Watersheds and Wetlands (4.1)

Introduction

1. Review with the students what they have learned about wetlands and their functional values.
2. Show the class photos of different kinds of wetlands such as freshwater and saltwater marshes, swamps, and bogs.
3. Have the students think about the types of animals and plants that might live in each type of wetland.

Activity

1. Present a pre-made wetland using a pan with modeling clay, representing land covering half of the pan sloping toward the bottom of the pan and nothing in the other half of the pan. This will represent a body of water such as a lake.
2. Ask the students what will happen if I pour some water (as rain) on the land (clay) what will happen to the water? (Should runoff quickly into the body of water.)
3. Now place a sponge in the pan at the base of the clay representing a wetland as a buffer zone between the land and the body of water. Pour some water on the land again and ask the students what happens with the wetland added? (The wetland slows the runoff down and it lessens the amount of water reaching the body of water because some water is trapped in the wetland.)

4. Explain that wetlands are shallow basins that collect water and slow the rate of flow down. This slowing process helps prevent flooding and soil erosion.
5. Ask what might happen if a wetland is destroyed and houses or other developments are built in its place? Point out that this is happening a great deal in the industrialized world today.
6. Pour the water out of the pan from the last experiment and use a clean sponge. Spread soil over the land and pour a jar of muddy water onto the land to represent polluted water. Ask what happens to the runoff? (Its trapped in the sponge.) Ask the students to compare the water in the jar to the water that ends up in the body of water? (The water in the jar is much more dirty and polluted.)
7. Remove the sponge and repeat the experiment. What happens to the runoff now? (It reaches the body of water more easily and quickly, the water is a great deal more dirty and polluted.)
8. Point out that without wetlands, tremendous amounts of silt and pollutants end up in bodies of water.

Conclusion

1. Ask the students how muddy water may affect fish, other wildlife and plants.
2. How might the lack of wetlands affect us as a people?
3. How can we prevent these undesirable events from happening?

Evaluation

1. Have students work in groups of four to make their own wetland models and use them to explain to the class what would happen if their wetlands were destroyed.
2. Quiz/test on wetlands and their importance.

References

Environmental Concern Inc. and The Watercourse (1995). *Wow! The Wonders of Wetlands.* St. Michaels, Md., & Bozeman, Mont.: Environmental Concerns Inc. and The Watercourse.

Author

Jon Mykut, Huntingdon Area School District