

HOW WETLANDS WORK

SUMMARY

During this program students will test the absorption properties of different soils to determine the effectiveness of wetland soils and detaining contamination. Students will learn biological techniques plants use to clean pollution through an interactive game.

GRADE LEVEL: 3-12

ACTIVITY DURATION: 1 hour

SETTING: Classroom and Outdoor Laboratory

SUBJECT AREAS: Earth's Systems

NGSS: HS-ESS2-2

OBJECTIVES: This program uses hands on experiments and role-playing games to illustrate a wetland's ability to improve water quality by the absorption of contaminants by wetland plants and soil. By the end of the program, students will be able to:

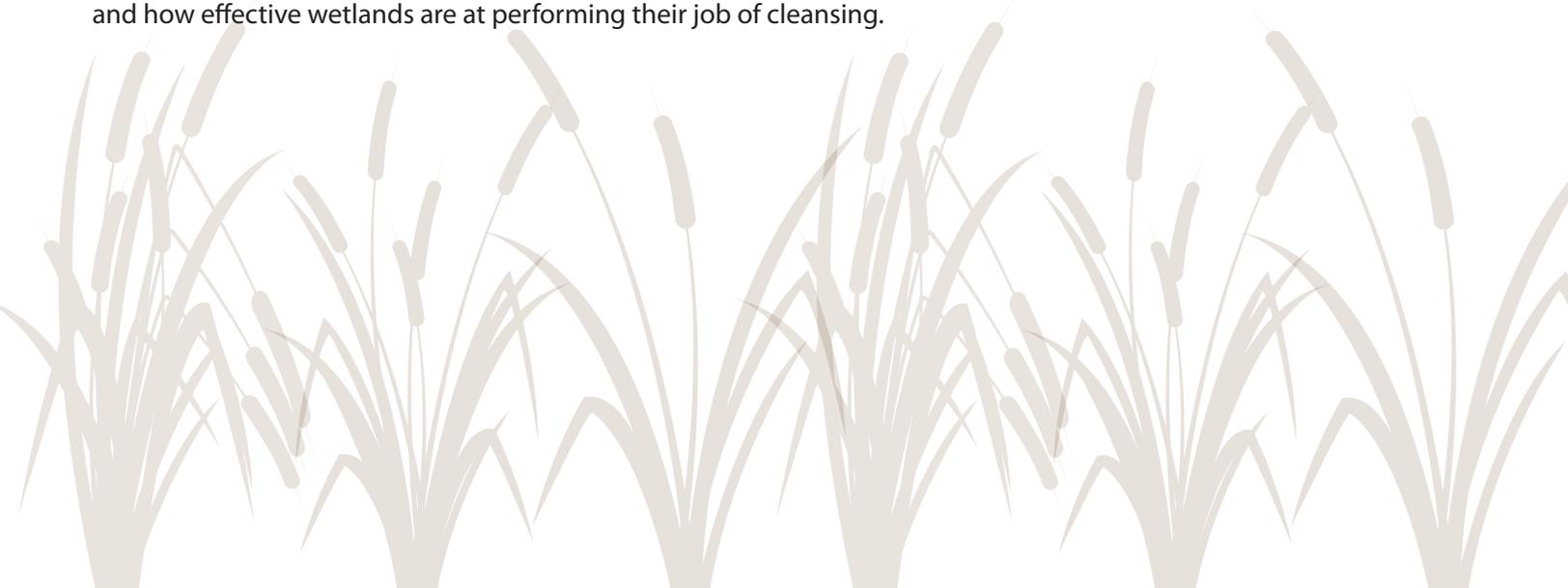
- Interpret the benefits of wetlands for urban water quality.
- Describe the absorption and filtering abilities of wetland soil and plants.
- Determine the percent of water absorbed in samples of various types of soil.
- List at least one method of phytoremediation

COOPERATIVE APPROACH: This program is designed to work along with *A Model Watershed* and *Nature's Filter* for a full experience of why we need wetlands, how wetlands work to clean pollution, and how effective wetlands are at performing their job of cleansing. This program works well with the *Cave Boat Tour* by providing the students with a view of the groundwater they learned to protect.

MAKING CONNECTIONS: By determining the percent of water absorbed by a sample of hydrophilic soil and the ability for plants to absorb and breakdown contamination, students will be able to discuss the importance of wetlands for water quality. They will understand why natural wetlands should be preserved and how man-made wetlands can be constructed as a Best Management Practice in cities with stormwater runoff remediation programs.

EXTENSION:

The *How Wetlands Work* program can be extended into a longer program in which principles of Science, Technology, Engineering, and Math are applied. By prefacing the program with *A Model Watershed* and then following this program with *Water Quality Parameters*, students will experience why we need wetlands, how wetlands work to clean pollution, and how effective wetlands are at performing their job of cleansing.



VOCABULARY: Absorption, Humus, Hydrophilic