

Discovering the Role of Green Infrastructure

Description:

Students will learn the different functions of a rain garden and its role in the water cycle. Using everyday items, students will demonstrate the functions of green infrastructure.

Objectives:

- Develop critical thinking skills
- Understand the role of green infrastructure
- Discover how green infrastructure is impacted by humans and the water cycle

Vocabulary:

Green infrastructure, stormwater, groundwater

Recommended for:

Kindergarten – 12th grade students

Materials (for each group):

- Sponges
- Band-Aids
- Funnels
- Coffee filters
- Small bags of bird seed
- Small fan
- Flat bottomed bowl

Background Information:

- Rainwater picks up dirt and pollutants which can flow directly into water bodies. Building a rain garden is a natural way to catch runoff, manage stormwater flow and restore infiltration, evaporation, transpiration and groundwater recharge.

Method:

- Introduce students to the idea of green infrastructure. What types have they seen in their communities? (Green roofs, bioswales, rain gardens). What characteristics do these built green spaces share?
- Split students into equal groups and pass out a set of all the materials (above) to each group. Each person in the group should have one item from the material list.
- Have everyone find others who have the same item and ask them to come up with and describe the item’s function and benefits as it relates to green infrastructure.
- Then, have a representative from each group explain how their item functions as part of a rain garden.
- After each group has shared, discuss all of the benefits of green infrastructure and its parts. Consider its importance to stormwater management and the water cycle.

Function/Benefit of Activity

Materials:

- Sponge: Absorbs water
- Band-Aid: Protects and heals the land surface and mends short cuts in the water cycle
- Funnel: Replenishes groundwater
- Coffee Filter: Traps and cleans pollutants from the surface water
- Bag of Bird Seed: Food source for wildlife
- Small fan: Aerates the soil and increases air and water movement
- Flat bottomed bowl: Temporarily stores water

Discussion:

- Describe why objects in the activity were chosen to represent the different functions of a rain garden. How might these functions interact as a whole?
- What else can you use to represent the functions of a rain garden?
- Provide three reasons why rain gardens are important for contributing to a healthy watershed.

Extension:

- Follow up with *How to Build a Rain Garden* to create one with your students.

For more information contact:

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Also visit DEP's website at:

www.nyc.gov/dep