
Where Does Your Garden Grow?

Activity Overview

Students identify suitable locations for potential native gardens on their school grounds based on site conditions.

Objectives

Students will:

- Problem solve to identify the best location for various native garden types
- Work cooperatively as a team
- Understand the possibilities and limitations of designing a landscape for wildlife and human use

Subjects Covered

Science, Social Studies, and Art

Grades

3 through 12

Activity Time

1 hour

Season

Any

Materials

School grounds map with buildings, trees and other major features located, pencils (or colored pencils)

State Standards

Science:

Decide which data should be collected (A.4.3)

Decide on changes that have occurred (A.4.5)

Discover how organisms meet their needs (F.4.1)

Investigate how organisms respond to internal/external cues (F.4.2)

Show organism's adaptations (F.8.2)

Understand an organism's behavioral adaptations (F.8.7)

Show organism's place in ecosystems (F.8.8)

Investigate cooperation & competition (F.12.7)

Background

When designing native plant gardens, a landscape architect or designer strategically considers where to locate a garden so that it will grow successfully given the existing site conditions. Native plant gardens can fit any site as long as the garden type matches the site. Matching your garden to your site is the foundation for a successful, dynamic planting. Also it will not require additional water or fertilizers because the plants are adapted the conditions of the site. Factors to consider in locating a native garden include the amount of sunlight available, existing vegetation, wind patterns, soil moisture, and soil type. See Earth Partnership for Schools activity "Noting Notable Features" for more information and other considerations.

Gardens can range from sunny prairie gardens to shady woodland gardens, from gardens that specifically attract insects or birds to sensory and ethnobotanical gardens. Gardens can also infiltrate rainwater to reduce storm water impacts and improve water quality. Some garden types can also be combined; for instance, you may choose a rain garden that attracts butterflies.

Activity Description

For this activity, you will work in teams to decide what types of gardens are suitable for planting on the school grounds. The information you develop can be integrated into the school's landscape design plan.

1. Divide students into teams. Give each team a school map and the results of the site analysis of the school grounds. If desired, go outside to review site conditions.
2. Students may identify potential garden types generally around the school ground or be assigned to a specific location to identify suitable garden types (preferable).
3. Take 15 minutes to identify what garden types are appropriate for a given site based on the following criteria.
4. Develop a team rationale for garden type recommendations.

General conditions for safe, sustainable, and educational garden sites

- A garden site close to classrooms for easy accessibility for schoolyard learning.
- Sites accessible for all children to experience the native garden.
- Sites away from places that vehicles need to access for school maintenance and utilities.
- Areas that will not be disturbed by future development and school expansions.

Where Does Your Garden Grow? (cont)

Social Studies:

Describe examples of land use, communities, shelters (A.4.4)

Art:

Identify how art is way to think & communicate (A.4.6, 8.6, 12.6)

Communicate ideas by producing visual forms (E.4.4, E.8.4)

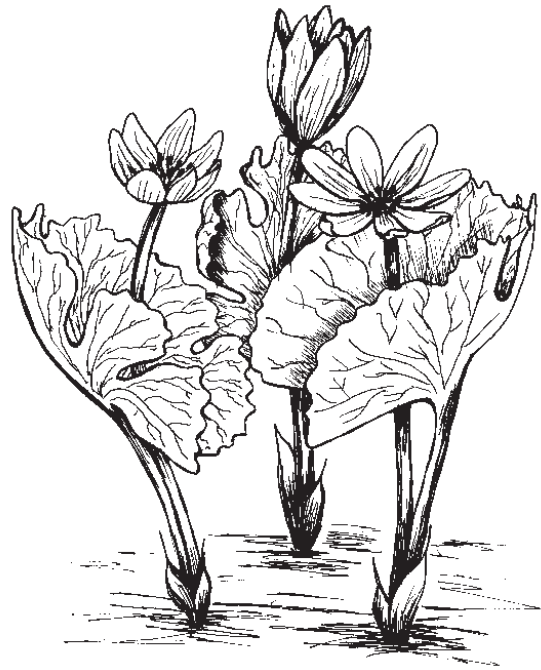
Communicate ideas by producing advanced visual forms (E.12.4)

Use visual arts to express ideas that words cannot (E.4.5, E.8.5, E.12.5)

Specific conditions for specific garden types:

Prairie, meadow, or grassland gardens

- These gardens require direct sunlight for at least 6 hours per day.
- They can grow on wet to dry soils.
- The topography can be level or steep.
- Grassland gardens are well suited for holding soil in place on eroded ground.



Shade or woodland gardens

- Woodland groundlayer plants require less than 4 hours of sunlight per day.
- Shade gardens grow well under trees.
- Woodland plants will grow on the east side of a building, which provides morning sun and protective shade in the afternoon. The west side of the building becomes too hot and stressful for woodland plants in the afternoon. The north side of a building is OK if the building is not too tall, so that some light is able to reach the plants during the day.

Gardens for butterflies and other insects

- Insects usually are attracted to sunny gardens with plants that bloom throughout the growing season. Shady plants tend to bloom primarily in the spring and therefore don't offer as many food sources for nectar-seeking insects.
- Insects prefer a diversity of plants for larval food, nectar sources, and cover. Plant selection is the key for growing a butterfly garden.
- Avoid windy places. Butterflies and moths prefer sites protected from the wind.
- Some insects need nearby, existing vegetation in order to colonize a new area. Many hopping insects such as leaf hoppers and grasshoppers may not move into a site surrounded by pavement.

Where Does Your Garden Grow? (cont)

Bird gardens

- Birds are more likely to visit a garden as a food source if shrubs or trees are nearby or part of the garden.
- Birds generally will not fly over large open expanses to reach a garden. They prefer flying from one protective area to the next to get to a garden space.

Ethno-botanic gardens and sensory gardens

- These types of gardens are able to grow in any of the above site conditions. When choosing plants, match the plants requirements, e.g., sun or shade, with the garden environment.
- Plant selection is the key. For ethno-botanic gardens choose local plants that were historically used for food, medicine, clothing, or shelter. Sensory gardens should offer a variety of smells, textures, and colors.

Rain gardens

- Locate rain gardens at least ten feet from a building foundation to avoid water seeping into the basement.
- Plant rain gardens away from large trees so the tree roots are not disturbed.
- Rain gardens can grow in the sun or shade.
- Rain gardens may include wildflowers, grasses, sedges, ferns, shrubs and trees, among other plant types.
- Choose areas with loose soil, which is not compacted from heavy machinery or trampled from foot traffic.

Extensions

- Develop promotional material to sell your recommendations to your school.
- Create a dichotomous key to help select potential gardens for a site.

Additional Resources

- Bannerman, R. (2003). *Rain Gardens: A how-to manual for homeowners*. Madison, WI: WI Dept. of Natural Resources/UW Extension.
- Diekelmann, J., Schuster, R. (2002). *Natural Landscaping: Designing with Native Plant Communities*. Madison, WI: University of Wisconsin Press.
- Kingsbury, N. (2003). *Natural Gardening in Small Spaces*. Portland, OR: Timber Press.
- Wasowski, S. (2002). *Gardening with Prairie Plants*. Minneapolis, MN: University of Minnesota Press.
- Wyzga, Marilyn. (1995). *Homes for Wildlife, A Planning Guide for Habitat Enhancement on School Grounds*. Concord, NH: New Hampshire Fish and Game department.

Assessments

- Give three reasons why it is important to match your proposed garden to your site conditions.
- Develop a ven diagram to show which gardens are compatible on the same site.
- Describe site situations which are inhospitable to wildlife.