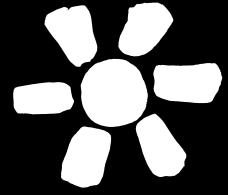


**OVERVIEW**

Students learn about the benefits and needs of trees in community settings, develop a plan and follow that plan to plant trees on the school grounds.

**BACKGROUND****Urban & Community Forestry**

The urban forest is all the way from the town center to the suburban fringe. The individual components include street trees, open green spaces, undeveloped forested areas, trees in municipal parks and playgrounds, trees and vegetation on private lands (residential, institutional and commercial) and trees around public buildings (Morgan and Johnson, 1993). The term urban forestry came in to use when the Urban Forestry Act was introduced to Congress in 1972.

Community forestry is managing forests with the express intent of benefiting neighboring communities (Brendler and Carey, 1998). Because of a growing concern for the environment and with providing more livable communities, community foresters are becoming involved in the preservation and management of open space and greenways, land use planning and zoning, and natural resource inventories. Three attributes are shared by most community forestry efforts: (1) the residents have access to the land and its resources, (2) residents participate in decisions concerning the forest, and (3) the community begins by protecting and/or restoring the forest which is present.

From these definitions, it is clear that urban and community forestry is not the same thing and yet there is likely to be a great deal of overlap. Chances are that the majority of community forestry programs are likely to occur in urban areas, in part because that is where most of the communities are, and in part because that is where the need for community forests are greatest.

A great variety of benefits of trees and forests have already been discussed. Many of these same benefits apply to urban and community forests. However, some of these benefits may not apply. For example, few urban trees will be harvested for timber products. Some of the benefits may apply even more so. For ex-

ample, the aesthetic value of trees may be even more important and more appreciated in an urban environment. There are also additional benefits that are specific to urban forests, such as the benefits trees offer to reduce heating and air conditioning costs. The following list of benefits of the urban forest is adapted from Morgan and Johnson, 1993.

**Improving Air Quality** — One acre of trees will absorb the amount of carbon dioxide each year equivalent to that produced by a car driven 26,000 miles. Trees and other vegetation aid in filtering pollutants and dust from the air by providing a surface on which particulates can settle. It has been found that dense tree plantings in a large city can reduce the dust count by 75 percent downwind of the planted area.

**Saving Energy** — Trees appropriately placed around buildings can reduce air conditioning needs in the summer by 30 percent. Trees planted for windbreak protection can save 20–50 percent in energy used for heating in the winter.

**Reducing Noise Pollution** — Trees absorb unpleasant sounds from the urban environment.

**Increasing Economic Stability** — Trees increase property values. Apartments and offices rent more quickly and tenants stay longer in wooded areas. Trees can also attract visitors and enhance tourism. It has been found that people linger and shop longer along tree-lined streets.

**Improving Personal Health** — Social/Psychological functions. Trees help to relieve psychological stresses associated with living in metropolitan areas. Trees create feelings of relaxation and well-being. Wooded areas, parkways, greenbelts and parks also offer important opportunities for recreational activities and social events.

**Improving Water Quality** — Reducing soil erosion; sedimentation control. Trees reduce the impact of raindrops and

**GRADE LEVELS:**

Grades 5–10

**OBJECTIVES:** Students will (1) obtain information from the local agencies and/or organizations responsible for planting and caring for trees in their community, (2) develop a plan to plant trees on their school grounds and (3) obtain, plant and care for trees.

**PENNSYLVANIA PROPOSED ENVIRONMENT & ECOLOGY STANDARDS ADDRESSED:****4.6.7**

A. Explain the flows of energy and matter from organism to organism within an ecosystem.

**4.7.7**

B. Explain how species of living organisms adapt to their environment.  
C. Explain natural or human actions in relation to the loss of species.

**4.8.7**

A. Describe how the development of civilization relates to the environment.  
D. Explain the importance of maintaining the natural resources at the local, state and national levels.

**4.9.7**

A. Explain the role of environmental laws and regulations.

**4.6.10**

A. Explain the biotic and abiotic components of an ecosystem and their interaction.

**4.7.10**

B. Explain how structure, function and behavior of plants and animals affect their ability to survive.  
C. Identify and explain why adaptations can lead to specialization.

**4.8.10**

A. Analyze how society's needs relate to the sustainability of natural resources.  
D. Explain how the concept of supply and demand affects the environment.

**4.9.10**

A. Explain why environmental laws and regulations are developed and enacted.

**ESTIMATED DURATION:** Three to Four 50-minute class periods.

**MATERIALS NEEDED:** Trees to plant; shovels; copies of Student Page, "Plant a Tree."

increase infiltration of rain into the soil, resulting in less runoff and erosion.

**Creating Wildlife Diversity** — Trees provide a suitable habitat for animals that would otherwise be absent from urban areas. The greater the diversity of trees and other vegetation, the greater the diversity of wildlife.

**Adding Aesthetic Beauty** — Trees add beauty to urban areas by adding life to an otherwise sterile urban world. Personal enjoyment is enhanced.

**Benefits for All Pennsylvanians** — Each person benefits from trees, no matter who you are, no matter where you live, what you do or what your interests are. But, if you live within these Penn's Woods, do not doubt your life is touched even more so by our trees and forests — many, many times, each and every day.

## PROCEDURES

1. In small groups, have students brainstorm lists of benefits that trees in towns and cities might provide to local residents. Ask the groups to share their lists and from their lists develop a class list. Ask students who they think might plant and take care of those community trees.
  2. Ask students to share any tree planting or cutting (either felling or trimming) that they have observed recently in their community. Make a list of the activities observed and approximately when and where they occurred.
  3. Find out which agencies or organizations are responsible for tree planting and maintenance in your community. In particular, check the local government offices, parks departments and urban forestry departments. You might also contact the Bureau of Forestry State Forest District Office in your area and the Pennsylvania Urban and Community Forestry Council for additional information (see appendices for contact information).
  4. Invite a representative from one of these agencies or organizations to visit your class. Have students prepare a list of questions in advance. Questions could include:
    - ◆ Who has the responsibility of planting and caring for the trees in this community?
    - ◆ How much money does your agency or organization spend annually on tree planting and tree care?
  - ◆ Have any trees been planted recently? Where? Have the trees done well?
  - ◆ What species of trees are usually planted? Why are these species selected? What criteria are used for selecting which tree species will be planted?
  - ◆ What are some difficulties that trees in urban settings have to deal with? What is the average life span of an “urban tree?”
  - ◆ Who determines where and when trees will be planted? What information are those decisions based on?
  - ◆ Does your agency or organization work together with the Bureau of Forestry State Forest District Office and/or the Pennsylvania Urban and Community Forestry Council? If so, in what ways?
5. After the classroom discussion, invite your guest speaker to walk the school grounds with the class to evaluate whether there are places on the grounds where additional trees might be planted and which species of trees might be appropriate.
  6. Have students work in groups to research where each desired species can be obtained, the cost per tree and the steps required for successful planting and care of that species.
  7. As a class, develop a proposal to the school administration to purchase the trees and plant them as a class project. If funding is not readily available, students may choose to raise money to buy the trees or they might ask people to donate the trees.
  8. Once permission has been granted and trees have been purchased, set a date for planting. Review with students the tips on the Student Page, “Plant a Tree.” Obtain shovels from the school maintenance department and/or ask students to bring in additional shovels from home.
  9. Separate the class into as many groups as there are trees to plant. It may be helpful to have additional adult supervision and help during the planting.

10. After planting, have each group of students share the responsibility of watering and caring for its tree as needed.

### **EXTENSION**

- Have students map out the school grounds. The map should show all major features, including existing trees and locations of newly planted trees.
- Have students work in groups to research and develop displays on each of the species planted on the school grounds.
- Contact the Pennsylvania Urban and Community Forestry Council and request information on projects in your community for which your students may be able to volunteer. If none are currently underway, ask for information on how to start such a project.

### **ASSESSMENT**

Have students keep a group journal about the tree they planted. In addition to recording the health and growth of the tree, a great variety of journal activities can also be facilitated (for some ideas, see “Adopt-A-Tree,” pp. 65–69 in Project Learning Tree).

Adapted from Project Learning Tree, American Forest Foundation, 1996, “Plant a Tree,” pp. 95–96.