

Plan for Urban Forestry

The curriculum in this program has been developed for the elementary, middle and high school levels. Each level builds on the other, and forms a thread of skills that are upgraded at each level. Each exercise is complete, enabling students to gather data about Urban Forests. The program has been divided into two components. The first component is for the development of your school's own arboretum, or tree walk, and herbarium. Tree planting should take place around Arbor Day in your state.

The second component of the program is the ability tiered curriculum presented in the form of student laboratory exercises and accompanying teachers' guides (Elementary school exercise format is altered slightly). Extrapolations called 'BLOWOUTS' for each exercise are noted, including a bibliography and source notation. Each of these exercises can be done on your school site. Repeated data collection on the same trees and shrubs is possible. An urban school site is not a natural habitat, but it is still an environment worthy of in-depth study. Students can measure dynamic growth of trees within the changing patterns of human habitation. **The guide has five areas of activity:**

1. Tree identification and inventory
2. Characteristics of the trees
3. Soil conditions for trees
4. Condition of the trees
5. Tree care and planting

A concluding field trip to some forested site (local park) would benefit the students understanding of the role of Urban Forestry in the total ecosystem. The idea of a half- or full-day field trip as a reward for work well done can be exciting for students. An appendix with additional or summative type activities is included. Exercises found in there are not limited to use by school systems and can be used by park districts, after hour's science clubs, gardening clubs, and state and local conservation programs.

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Objectives and Goals

Objectives

The Urban Forestry Unit has three primary objectives:

1. To educate and inform students and participants about how trees function in an urban setting.
2. To collect data on trees in their urban environment in order to determine how well the tree is surviving.
3. To provide an opportunity to participate in the development of an urban forest in your community.

Goals:

By the end of this **Urban Forestry Unit** the student will be able to:

1. Develop a map of the trees at or near the school by applying the classification scheme developed during the unit.
2. Recognize that one population of plants or animals can have an affect on others, even in an urban setting.
3. Understand that interactions among trees, soil and people are increasing in importance in urban settings.
4. Evaluate data collected to determine how trees are changing the environment.
5. Identify the current state and future of forestry as a career.
6. Identify the effect of planting and harvesting trees in an urban environment.
12. Demonstrate various ways to display the same data by use of computer generated graphs.
13. Apply quantitative observational methods to accumulate precise data about the trees on their school site.
14. Construct a classification scheme for the trees on the school site and demonstrate its use in class.
15. Evaluate and revise an inference based upon additional data gathered during the unit.
16. Revise a prediction on the basis of additional information.
17. Identify appropriate methods of measurement for a given task.

7. Know how scientific inquiry is influenced by beliefs, traditions, views, and actions of society as they pertain to trees in an urban setting.
8. Replicate the results of another student's experiment during this unit.
9. Recognize that experimental results must be open to the scrutiny of others; through the comparison of group results on the same trees.
10. Understand that data reflects the accuracy of the measuring devices for tree characteristics.
11. Demonstrate the ability to draw conclusions from collected data about the tree's environment.
18. Analyze the results of each experiment.
19. Evaluate the interpretation of data collected during each experiment.
20. Analyze an operational definition based upon a simple experiment.
21. Use direct observation to develop a question, and then answer it as part of the lab exercise.
22. Identify possible sources of error in measuring instruments, by comparing results of each group's measurements on the same tree.

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Philosophy

What is Urban Forestry? Urban Forestry is the comprehensive management of forests and related natural resources in populated areas, from the inner city, to the developing urban fringe, to small outlying communities. For too long, as urban areas have been developed, the forests of urban areas have been depleted or eliminated. We are now seeing an awakening to the needs of trees. Our society must not simply be developed in a technological way, but it must be developed in a natural sense for a balance to be brought to all of our lives.

Students need to interact with nature. They need to know that nature is not a stagnant entity, but is a dynamic living system. Day to day, month to month, year to year, nature is as catalogue of how we have treated ourselves. The quality of nature reflects our priorities as human beings. Nature can be described broadly as any setting from a woodlot to a vacant lot, a football field to a crack in the sidewalk, or a city park to the landscape around a school. Realizing this need, we have to interact and become a part of the forest. **Urban Forestry Laboratory Exercises** has been designed to reintroduce us to a vital missing part of the urban setting, an **Urban Forest**.

Society needs experts in many fields, but even more than this, our society needs members with a wealth of information and knowledge, equipped to make informed decisions. This program addresses this need by enhancing the science curriculum with additional resource material. This program illuminates nontraditional career opportunities that will become available as technological Urban Forestry is promoted.

Data gathering is a first step in the understanding of whether a problem exists, or is a figment of our imaginations. The intent of the program is to show how careers of all kinds are changing with technology, and to show the need to assimilate and share information when we develop new ideas. Grouping students to gather data is, in the best sense, a true scientific endeavor. Any good program of analysis and synthesis must have numerous data from which conclusions will be drawn. Growth in our technological society comes with the awareness one has of the interconnectiveness of environmental factors.

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