Uncover Our Forests' Past

Extension 1: Urban Trees on TV

Nutshell

In this lesson, the class learns the values of urban trees as the teacher pulls symbolic props from a bag. Students work together to write and conduct an opinion poll to find out how people feel about urban trees. Students make graphs to describe the results of the poll and create commercials to promote the benefits of urban trees.

Background Information

What is an urban forest? According the Wisconsin Department of Natural Resources (WDNR), it is "all of the trees and other vegetation in and around a town, village or city—the trees in your yard, along the street, in parks and cemeteries." Shrubs, flowers, vines, ground covers, grass, and a variety of wild plants and animals also are part of the urban forest. The urban forest is, in fact, an ecosystem.

Although every part of the urban forest is valuable, this lesson will focus on the value of trees in the urban ecosystem. Trees provide many benefits to the rest of the community. Urban areas, which are typically covered in pavement, cement and buildings, often are several degrees warmer than the surrounding area. Trees planted along the street shade the concrete and help keep the entire neighborhood cool. Trees also help us save money on our heating and cooling bills. Trees planted to the east and west of a home shade the house from the path of the sun as it rises and sets. According to The National Arbor Day Foundation, this can cut cooling costs by 15-35%. Trees planted as a windbreak help prevent winter winds from drawing heat from our homes. This can lower heating bills 10-20%. In addition, trees planted around a home can increase its value up to 15% or more.

Trees provide habitat for urban wildlife. Many types of wildlife have adapted to our human built environment. Songbirds and other small animals are able to survive in urban environments thanks to trees. Trees provide homes and food for these animals.

Urban forests help prevent environmental problems. Did you know trees could help prevent a flood? Trees absorb water from the soil through the roots. The water travels up through the trunk to the leaves. During a process called transpiration, water exits the leaves as water vapor. By taking water from the soil and releasing it as water vapor, trees help prevent flooding. Trees also help prevent soil erosion. The branches and leaves of trees break the fall of raindrops. This gives the soil time to absorb the water. Otherwise the water could run off quickly, carrying the topsoil with it.

Trees also help us stay happy and healthy. Sometimes just being able to look at beautiful trees in our surroundings can

Objectives

Upon completion of this lesson, students will be able to:
- Explain the value of urban trees.
- Conduct an opinion poll.
- Communicate their findings through graphs.
- Promote urban forests.

Subject

English Language Arts, Arts, Science

Lesson/Activity Time

Total lesson time: 90 minutes

Time breakdown:
Day 1:   Introduction – 20 minutes
        Activity 1 – 20 minutes
Day 2:   Activity 2 – 20 minutes
        Conclusion – 30 minutes

Teaching Site

Classroom

Materials

For the class:
- Sunglasses
- Dollar bill
- Price tag
- Birdhouse
- Sponge
- Granola bar or other snack food
- Dust mask
- Umbrella
- Artwork
- Bag to hold the props listed above
- Chalkboard or dry erase board
- Props and dress-up clothes (optional)

For each student:
- Copy of Urban Forest Opinion Pole Student Page *
- Pencil

Preparation

For Day 1
- Assemble your bag of props
- Photocopy the Urban Forest Opinion Poll Student Page *

For Day 2
- Gather props and dress-up clothes for students to use in commercials (optional)

* Available online

www.dnr.state.wi.us/org/land/forestry/

make us feel better. In addition, trees help clean the air. Through photosynthesis, trees remove carbon dioxide and add oxygen to the air. This makes the air cleaner and healthier for us to breathe. Thus, urban trees play a critical role in creating a healthier, safer and more comfortable environment in our cities and communities.

Procedure
Day 1
Introduction
Ask your students what an urban forest is. (Students will likely say that an urban forest is comprised of the trees that grow along the streets in a city.) Expand on your students' responses until they understand that an urban forest includes all the trees, plants, and animals in and around a community of any size. Also help them understand that people, buildings, and streets are also part of the urban forest. Then get out your bag of props. Explain to your students that trees are a valuable part of the urban ecosystem and that your bag of props will help you explain why. Begin by asking one volunteer to come forward and remove one item from the bag. Using the descriptions below, discuss with your class how that item demonstrates the value of urban trees. Continue to ask different volunteers to come forward and pull something from the bag until all the items have been discussed.

* ❖ The **sunglasses** represent shade. Trees planted along the street shade the concrete and help keep the entire neighborhood cool.
* ❖ The **dollar bill** represents saving money. Trees planted to the east and west of a home can cut cooling costs by 15-35%. In addition, trees planted as a windbreak near a home can lower heating bills 10-20%.
* ❖ The **price tag** represents increased property value. Trees planted around a home can increase the home's value up to 15% or more. This means that the owners can get more money for the home if they were to sell it.
* ❖ The **birdhouse** represents homes for animals. Songbirds and other small animals make their homes in trees.
* ❖ The **sponge** represents transpiration. Trees absorb water from the soil through the roots. The water travels up to the leaves and exits the leaves as water vapor. Absorbing water from the soil helps prevent flooding.
* ❖ The **granola bar** represents food for wildlife. Trees, especially flowering trees, provide food for local animals.
* ❖ The **dust mask** represents cleaner air. Trees remove carbon dioxide and add oxygen to the air through a process called photosynthesis. This makes the air cleaner and healthier for us to breathe.

* ❖ The **umbrella** represents the prevention of soil erosion. The branches and leaves of trees break the fall of raindrops. This gives the soil time to absorb the water. Otherwise the water may run off quickly, carrying the topsoil with it.
* ❖ The **artwork** represents beauty. Trees add beauty to our surroundings. Sometimes just being able to look at trees can help us feel better.

Activity 1
Explain to your students that in order to find out how people feel about a particular issue, journalists sometimes conduct an opinion poll. An opinion poll is simply a list of several questions meant to draw out a person's opinion about a certain topic. Tell your class that they just became journalists who want to get people's opinions about the value of urban trees. Explain that in order to gather that information, they need to write an opinion poll. Give your students an example of the type of question that may appear on their poll: Do you feel that trees are important in cooling our houses? Yes, no, or undecided. Then ask your class to think of other questions that should be on the poll. As a

Vocabulary

Erosion - The process by which soil is gradually removed by wind or water.

Photosynthesis – The process in which plants use energy from the sun to change carbon dioxide and water into sugar. Oxygen is a byproduct of this process.

Transpiration – The evaporation of water from plants.

group write 5-10 questions for your poll. Have each student fill in the chosen questions on the Urban Forest Opinion Poll Student Page. As an assignment, ask each student to take the poll home and ask family and friends to respond. Remind them to record each person's responses with tally marks on the worksheet.

Day 2
Activity 2
When the class gets back together, use the chalkboard to tally up all the responses from the entire class. Then assign each of the questions to a group of two or three students. Each small group should make a bar graph that describes the results from their assigned question. The three possible responses (yes, no, or undecided) should be listed on the X-axis. The number of people who gave each response should appear on the Y-axis. The question should be written below the graph. When the graphs are complete, post them near the timeline display from the main lesson. Give everyone a chance to look closely at the graphs. Then discuss the graphs. Relate the graph results to the actual answer (if fact based) and talk about how people don't always know the values of trees in their community.

Conclusion
1. After the class reviews the results of the survey, gather the group back together. Ask your class to pretend that they have been given the chance to broadcast commercials promoting urban trees during the evening news. Then ask your class what messages are important to communicate in their commercials. (Students should respond with the values of urban trees that were discussed in the

introduction.) Ask your class to think about the results of their opinion poll. Based on the response they received, ask your class if there are one or two values that should be emphasized in their commercials. (Students should respond with values that came in weak on their poll.)
2. After you have reviewed what their commercials should contain, break your class into groups of four or five students. If you have props and dress up clothes, let your students use these while creating their commercials. Give the groups ten minutes to work.
3. When everyone is ready, call the group back together and allow each group to act out their commercial for the entire class. After each commercial, ask the rest of the class to summarize the messages communicated in the commercial.

Assessment
Summative
Ask your students to write letters to the editor urging people to plant more trees in their yards and communities. Each student should list at least three reasons why urban trees are valuable to people. (Optional: submit the letters to your local newspaper.)

References
The Wisconsin Department of Natural Resources Division of Forestry.
www.dnr.state.wi.us/org/land/forestry/

The National Arbor Day Foundation. www.arborday.org

Other Resources

Website
The National Center for Education Statistics.
www.nces.ed.gov/nceskids/graphing/bar.asp
Learn about graphs and create your own bar graph on the computer.

Urban Forest Opinion Poll

Ask at least five people to answer the questions on your opinion poll.
Tally their answers on the table below.

List questions here	Tally answers here		
	Yes	**No**	**Undecided**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			