Investigating a Livable Community

New activity E   **Goal 2: Urban Forests' Benefits and Costs**

Overview

The presence or absence of trees and other plants can influence how we feel, think, and act. In this exercise, students will be social scientists whose goal is to determine if trees and other vegetation influence landscape preferences. Students will conduct this investigation using surveys and their findings will prompt discussion about how urban forests provide social and psychological benefits.

Objectives

Students will be able to **1)** survey an audience and tally results; **2)** compare and contrast results from different people; and **3)** state one psychological or social benefit of an urban forest.

Materials

7 copies of pictures and 70 copies of surveys, plus one copy for each student.

Grade Level: 6 – 8
Time Considerations: 2-5 days
Subject Areas: Social Studies, Math
Skills: Identifying Attributes, Counting, Organizing, Making Charts and Graphs, Comparing, Contrasting, and Interpreting
Relevant Standards:
SS.B.2.3 – The student understands the interactions of people and the physical environment
MA.A.4.3 – The student uses estimation, problem solving, and computation skills
MA.E.1.3 – The student understands and uses the tools of data analysis for managing information
MA.E.2.3 – The student identifies patterns and makes predictions from an orderly display of data using concepts of probability and statistics

---

Background

People like trees and other plants for a variety of reasons. They affect our perception of the world in important social and psychological ways. They may help make where we live, work, learn, and play more enjoyable.

In this exercise, students will be social scientists exploring the psychological relationship between people and their environment. A social scientist uses the same kinds of skills that a biological scientist would when uncovering new information. They collect and organize data then interpret and construct an explanation and communicate that explanation to others.

We know that the presence of trees and other vegetation can affect our moods, attitude, and health. For some people, trees are symbolic. They represent hope, prosperity, life, and peace. This is why they are planted as living memorials for people or events. Having an appreciation for the beauty of plants can enable one to enjoy the beauty of a place. In general, if people experience a positive emotion due to trees and other plants, they may select places that have them. However, studies also show that highly vegetative areas that block a person's view can bring about feelings of fear or discomfort.

Research has shown that the presence of trees and vegetation can contribute a restorative effect thus making an urban area more livable.[1,2] For example, when a person concentrates on something such as an exam or driving through the rain at night, he/she use *directed attention*. After an extended period of time, the ability to concentrate begins to fatigue. One way to renew and refresh this mental fatigue is to use *involuntary attention*. Involuntary attention is

effortless; we use it when we notice sights, smells, and sounds or when we do enjoyable things, such as walking in a park or gardening. When directed attention is restored, it is easier to pay attention and concentrate.

Life in an urban area can be rushed, noisy, hot, and crowded, leading to increased stress and anxiety. Constant stress can lead to chronic mental fatigue, which is sometimes a precursor to aggressive, violent behavior. It can also diminish a person's ability to cope when faced with a challenging situation.[4]

Research has shown that well-groomed, green common spaces increase the chance people will use them, which promotes community engagement. Studies have also shown when there are more people using outdoor spaces, there is less crime, littering, loitering, noise pollution, and property damage. In this way urban forest can lower neighborhood stress levels.[3,4,5] Even having a view of nature from a hospital window has been related to shortened hospital stays and quicker recoveries.[6] Other general studies indicate reducing stress can enhance a person's immunity, which can lead to better health.

The urban forest is alive and dynamic. Where there are trees and other plants, there will also be insects and other animals. These environments usually have a variety of things to touch, see, hear, smell, and sometimes taste. Being in a stimulating, interactive, vibrant surrounding may allow students to be more creative which may encourage imagination.[1]

In summary, having an urban forest can help to reduce stress and anxiety, improve health, and contribute to greater mental productivity. Nearby trees can help make a place more likeable, attractive, pleasant, and enjoyable. The urban forest can make us feel good which increases the psychological and social health of people.

Getting Ready

1) The educator should have students practice using the surveys in class. Make copies for each student and show the pictures on a projector screen.
2) Make 70 copies of the survey and 7 copies of the pictures.

Pre-Activity Questions

1) On your way to school today did you notice the trees or other plants? Where were they? Do you think they influence how we feel, think, or act? How?
2) Some indoor areas such as office buildings, entry ways, and malls have plants and waterfalls. What might be the advantage of this type of interior decoration?
3) Do you think different people feel the same way that you do toward trees and well groomed green spaces? How can we prove this?
4) What instrument can a social scientist use to assess feelings and attitudes?
5) Define: psychological, social scientist, and survey.

Doing the Activity

1) Explain to the students that they will collect data to help answer the question, "Does the urban forest influence how we feel, think, or act?"
2) Divide students into 7 groups and assign each group one of seven age groups ($\leq$10, 11-20, 21-30, 31-40, 41-50, 50-60, and $\geq$61).
3) Explain to student groups that they will survey at least 10 people in their assigned age group.
4) To become comfortable with the survey and survey process, tell the class they will first practice using the survey. Pass out the surveys. Ask each student to survey one student next to him or her and then switch. Ask students to add the group **A** responses then add group **B** responses. Compare results as a class.
5) Ask students who they would choose to survey for this study. Recommend choosing neighbors, other kids at school, or their family members and make it mandatory that they conduct this survey as a group for safety reasons.
6) Pass out 10 surveys and 1 set of pictures to each group.

7) When each group has brought in their 10 surveys, ask the following questions:

> **a)** Look at the questions 1-3 on the survey. Research tells us that the urban forest helps people feel better and has a calming, relaxing effect. Which group pictures did most of your survey participants choose for these questions?
> **b)** Look at questions 4-6. Some people think the urban forest is a peaceful place and helps to restore focus to think. Did your results match this idea?
> **c)** Look at questions 7-9. Having an urban forest allows us to do different things. It might be a nice place to visit with friends or help you be more creative since there are more things to see, hear, smell, and touch. Did most of your results reflect this idea?

8) The educator should copy the class results sheet on a dry-erase or chalk board then tell students they will fill out one row that represents their specific age group.

9) Ask each group to add up their age group's data. They should separate the surveys into two piles – males and females. Then add all of the total **A** scores for all the male respondents, then all the **B** scores. Repeat for females.

10) One student from each group should fill in their observations on the master class chart. Encourage students to make charts and graphs with their results.

Post Activity Discussion

1) What were some of the most interesting findings in your study? Was there anything that surprised you?

2) Do you think people feel, think, or act differently if there is an urban forest? Do your results suggest this? Does any age group prefer less forested scenes? Why might this be?

3) What would change if you lived without trees and other vegetation?

4) Research suggests that an urban forest can help make a place more livable, with social and psychological benefits. What does that mean? How much is that worth to you personally?

Assessment

- Have students write a paragraph explaining the class results and their interpretation of why they think their group chose group **'A'** or group **'B'**.
- Ask students to name one social or psychological benefit an urban forest may provide.

Related PLT Activities

Poet-Tree #5
I'd Like to Visit a Place Where… #54

Endnotes

[1]Taylor, F., F.E. Kuo, and W.C. Sullivan. 2002. Views of nature and self-discipline: Evidence from inner-city children. *Journal Environmental Psychology* Special Issue: *Environment and Children* 22: 49-63.

[2]Taylor, F., F.E. Kuo, and W.C. Sullivan 2001. Coping with ADD: The surprising connection to green play settings. *Environment and Behavior* 33(1) January: 54-77.

[3]Kuo, F.E. 2003. The role of arboriculture in a healthy social ecology. *Journal of Arboriculture* 29(3): 148-155.

[4]Kuo, F.E. 2001. Coping with poverty: Impacts of environment and attention in the inner city. *Environment and Behavior* 33(1): 5-34.

[5]Kuo, F.E. and W.C. Sullivan 2001. Aggression and violence in the inner city: Effects of environment via mental fatigue. *Environment and Behavior* 33(4): 543-571.

[6]Ulrich, R.S. 1984. View through a window may influence recovery from surgery. *Science* 224: 420-21.

Survey: Investigating a Livable Community

Thank you for participating in this survey. You will be choosing one picture from either column A or column B for each scenario. Each group of pictures represent where people live, work, learn, and play. Please complete the demographic questions at the bottom.

1) If you wanted to feel better, where would you rather be?   **A**   **B**

2) If you were angry, which group of places would help you relax and calm down?   **A**   **B**

3) If you had 10 minutes to take a break from a difficult task, where would you like to go?   **A**   **B**

4) If you wanted to focus and think better, which group of settings would you choose?   **A**   **B**

5) If you had to pick a place to read and study, which group of areas would you choose?   **A**   **B**

6) Which set of pictures would you want outside of your window at school, work, or home?   **A**   **B**

7) Which group of places would you spend more time enjoying with your friends?   **A**   **B**

8) If you want to draw a picture or write a poem, which group of scenes helps you be more creative?   **A**   **B**

9) In which group of places would you prefer to live, work, learn, and play?   **A**   **B**

Total A=   **Total B=**

Gender: Male ☐ or Female ☐

Age: 0-10 ☐   11-20 ☐   21-30 ☐   31-40 ☐   41-50 ☐   51-60 ☐   61+ ☐

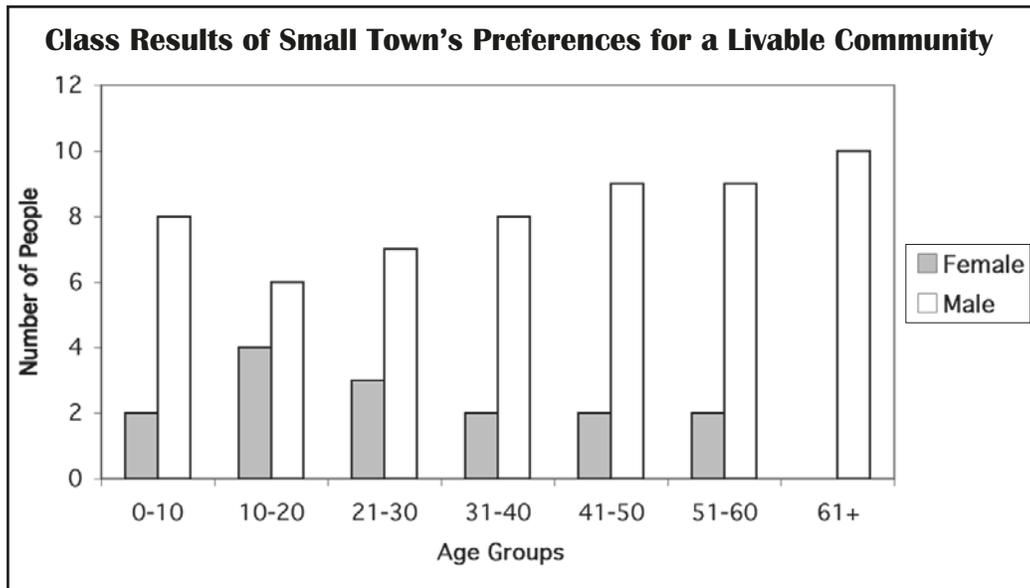# Class Results: Investigating a Livable Community

The purpose of this study is to determine whether the urban forest could influence how we feel, think, and act and to discuss how trees and vegetation might contribute to the livability of an urban environment.

Directions: Educator should copy master class results on dry erase or chalkboard for the class. Each student group will separate their surveys by gender and tabulate their findings. One person from each group should input data in one of the rows on the board and create class bar graphs.

Master Class Results

Ages	Male Preferences		Female Preferences	
	A	B	A	B
0-10				
11-20				
21-30				
31-40				
41-50				
51-60				
61+				
Totals				

Example Graph

Class Results of Small Town's Preferences for a Livable Community

Pictures: Investigating a Livable Community

Group A   ## Group B

Live

Learn/Work

Play

Photos Courtesy of Gwen Ryskamp and Jennifer Seitz