LESSON 1: WHERE IS OUR URBAN FOREST?

Lesson at a Glance

Grades
- K-2

Duration
- 45-60 minutes

Standards
Arizona Science Standards
- 1.E1U1.5
- 1.L1U1.6

All standards listed at end of lesson

Suggested Sites
- Area with several different trees and other natural features. An elevated area where students can see a larger part of their town or city is ideal.
- This lesson can also be divided into sections that are presented along a walk (e..g., from classroom to schoolyard to park).

Overview

Students will be introduced to their urban forest. They will learn that it encompasses all of the green space, including street trees, parks, schoolyards, landscaped private yards, nature preserves, etc. of their urban area. Students will discuss their favorite things in the urban forest and create a journal entry about their urban forest.

Objectives

Students will be able to:
- Observe and describe characteristics of an urban forest, focusing on their local urban forest
- Define a forest and an urban forest
- Explore their local urban forest and use a nature journal to write and/or draw about their experience

Background Information

In Arizona, when we think about forests, what usually comes to mind are the rugged tree covered mountainous areas south of the Mogollon Rim and the expansive pine forests on the Colorado Plateau. We rarely think of trees along city streets as part of a forest. However, these trees together with those in urban parks, schoolyards, private gardens and backyards, and all other greenspaces and related biotic and abiotic components extending from the urban core to the urban-rural fringe make up our urban forests (Konijnendijk et al. 2006). Urban forests benefit us socially, environmentally, and economically. Social benefits include improved mental and physical well-being, increased social interaction and sense of community, and more beautiful cities. Environmentally, urban forests improve air quality and

provide oxygen. They reduce stormwater runoff, improve water quality, and contribute to water storage. Urban forests provide habitat for wildlife and increase local biodiversity. In Phoenix, the urban forest provides ecosystem services evaluated at $40.25 million/year, a huge economic benefit. The trees help reduce energy consumption and mitigate the urban heat island effect (Project Desert Canopy).

Preparation

Vocabulary

- **Forest:** An ecosystem that is characterized by a dominance of tree cover and contains a variety of other organisms (e.g., other plants, animals).
- **Urban forest:** includes all the trees and other vegetation in and around a town, village, or city. Plants, people, and animals are part of an urban forest.

Materials

- Book: *The Forest Where Ashley Lives*.
  - This illustrated book is written from the perspective of a seven-year-old. It describes urban forests and contains lots of “Did you know?” facts about trees and forests.
- Nature journal or paper for students to write and draw
- Writing and drawing utensils

Set-Up

- Select an outdoor space to visit with students.
- Ensure students have gathered their nature journaling materials, or bring materials for each student to use outdoors.

Lesson Procedure

Engagement

- Decide to begin in the classroom or the outdoor space with students. If you are going outdoors, review any relevant safety instructions or outdoor learning procedures.
- Share that you will be reading a book as a class about forests and learning about a type of forest called an urban forest.
- Start reading the book “The Forest Where Ashley Lives” to your students. As you make your way through the book, take frequent breaks and relate the information in the book to your location and to students’ experiences. Discuss:

- Are there trees with different leaf shapes?
- Are there birds or insects using the trees as habitats?
- Is there evidence of trees that were cut down?
- Is it cooler under a tree than in the sun?
- How do the trees in your neighborhood compare to the trees in the book?
- What kind of trees does Arizona have that makes this urban forest special?

Exploration

- After reading the book, continue to discuss forests with students:
  - Have any students visited a forest? In Arizona? In another place?
  - What makes a forest? (Trees!)
  - Can forests exist anywhere else? What about in cities?

Explanation

- Introduce students to the term **urban forest**. An urban forest includes all the trees and other vegetation in and around a town, village, or city. Plants, people, and animals are part of an urban forest.
- The large urban areas in Arizona rely on urban forestry for a variety of reasons, such as keeping cities cool and providing spaces for people to spend time outdoors. Ask students what they like best about their urban forest, and why they like it.

Elaboration/ Evaluation

- If you have not already transitioned outdoors, transition to an outdoor setting with trees.
- Using nature journaling materials, students can write about and draw their urban forest. Consider these prompts:
  - What do you think of when you hear “urban forest.”
  - Who and what might live in an urban forest?
  - What do you notice and observe in your urban forest?
  - What do you wonder about in your urban forest?

Additional Resources

Educator Resources and References

- Vitosh, M. A. and A. L. Vitosh. 2000. The Forest Where Ashley Lives. Iowa State University Extension, Ames IA. Download available from: https://www.uwsp.edu/cnr-ap/leaf/Documents/ForestWhereAshl

eyLives.pdf
- Neighborhood Forests Southwest Learning Guide https://dffm.az.gov/sites/default/files/media/NeighbForestsLearningGuide_0.pdf
- Wisconsin Center for Environmental Education. 2007. Conceptual Guide to K-12 Urban Forest Education in Wisconsin. College of Natural Resources, University of Wisconsin-Stevens Point, Stevens Point, WI. https://www.uwsp.edu/cnr-ap/leaf/SiteAssets/Pages/Urban-Forest-K-4-Unit/UrbanConceptdownload.pdf
- Wisconsin Center for Environmental Education. 2007. LEAF Urban Forest Lesson Guide. Lesson 1. What is an Urban Forest? College of Natural Resources, University of Wisconsin-Stevens Point, Stevens Point, WI. https://www.uwsp.edu/cnr-ap/leaf/SiteAssets/Pages/Urban-Forest-K-4-Unit/UFK4L1.pdf
- Bardekjian, A. (2018). Compendium of best urban forest management practices. Second Edition. Originally commissioned to Tree Canada by Natural Resources Canada. Retrieved from: https://treecanada.ca/resources/canadian-urban-forest-compendium/
- Konijnendijk, C. C., Ricard, R. M., Kenney, A. and T. B. Randrup. 2006. Defining urban forestry – A comparative perspective of North America and Europe. Urban Forestry & Urban Greening 4(3-4), 93-103.
- Project Desert Canopy. City of Phoenix, AZ. Factsheet. https://dffm.az.gov/sites/default/files/files/forestry/ucf/Desert-Canopy-PHX-fact-sheet.pdf

Field Trip Sites and Career Exploration

- Urban Forester, arborist, or other tree care professional who manages and takes care of trees in your urban forest.
- **Central Arizona:** City of Tempe Urban Forester, Richard Adkins
- **Southern Arizona**: City of Tucson Urban Forestry Program Manager, Nicole Gillett

Arizona State Science Standards

Disciplinary Core Ideas	Crosscutting Concepts	Science and Engineering Practices
E1: The composition of the Earth and its atmosphere and the natural and human processes occurring within them shape the Earth's surface and its climate L1: Organisms are organized on a cellular basis and have a finite life span U1: Scientists explain phenomena using evidence obtained from observations and or scientific investigations. Evidence may lead to developing models and or theories to make sense of phenomena. As new evidence is discovered, models and theories can be revised.	• Patterns • Cause and Effect • Systems and System Models • Structure and Function • Stability and Change	• Ask questions and define problems • Plan and carry out investigations

Standard Codes	• 1.E1U1.5 • 1.L1U1.6

Next Generation Science Standards

Disciplinary Core Ideas	Crosscutting Concepts	Science and Engineering Practices
Text	Text	Text

Standard Codes	• Here

Arizona English and Language Arts Standards

Reading: Literature	Reading: Informational Text	Writing	Speaking & Listening	Language
Text	Text	Text	Text	Text

Standard Codes	• Here

Arizona History and Social Science Standards

Civics	Economics	Geography	History
Text	Text	Text	Text

Standard Codes	• Here

Arizona Mathematics Standards

Operations & Algebraic Thinking (OA)	Number & Operations in Base Ten (NBT)	Number & Operations —Fractions (NF)	Measure-ment & Data (MD)	Geometry (G)	Standards for Math-ematical Practices (MP)
Text	Text	Text	Text	Text	Text

Standard Codes	• Here