

LESSON 4: THE PLACE OF CITIES IN ECOSYSTEMS

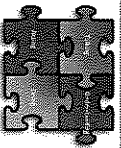
OVERVIEW:

This lesson serves as an introduction to the history and development of cities and how they developed within the context of ecosystems. In this lesson, students will explore the ways that human systems interact with environmental systems.

SUB-QUESTION:

How do cities impact the ecosystem? How are cities impacted by the ecosystem?

Ways of Knowing Urban Ecology:



Students will...

- Understand**
- Understand the relationships between human and natural systems with reference to services, impacts, and limits (*human impact, ecosystem services, ecosystem state and structure*).
 - Recognize the historical aspects and patterns of urbanization (*ecosystem change, human impact, ecosystem state and structure*).
- Talk**
- Discuss reasons for living in urban areas.

Do *No specific goals connected with doing urban ecology in this lesson.*

Act *No specific goals connected with acting on urban ecology in this lesson.*

PREPARATION:

Time:

1 class period

Materials:

Activity 4.1

- Chalk or white board

Activity 4.2

- Computer and projector
- PowerPoint on Urban Growth

Activity 4.3

- Student worksheets
- Computer and projector (optional)
- Chalk or white board

INSTRUCTIONAL SEQUENCE

Activity 4.1: Thinking About the History of Cities

1. In preparation for the lesson, write the following terms on the board: Ecosystem Services, Human Impacts, and Limits.
2. Tell your students they will be thinking about the place of cities in ecosystems.
3. Ask your students to do a free-association brainstorm for each term. That is, ask your students to give you words, concepts, synonyms, or ideas that they think of when they think of each term. Right now, what they provide does not necessarily have to deal with the scientific or environmental aspects of the terms. For example, it is fine to think of things like banks, utility companies, hotels, the city government, or even religious institutions that provide services (or where services are held).

Activity 4.2:

1. Begin the power point on Urban Growth. This presentation will introduce students to the concept of studying the urban environment from a scientific perspective. A teacher version of the PowerPoint is included with potential questions and key ideas for the slides.
 - As you are sharing these slides with the students, try to elicit their ideas about urban growth. These are concepts we will revisit multiple times over the course of the year.

Activity 4.3:

1. Project the image of the United States at Night (found in the student worksheet). Ask the students to identify patterns that they see.
 - Some possible responses include: empty areas, populated areas near water, coast lines, deserts, and mountains.
2. Students should then complete the lesson 4.3 worksheet answering the analysis questions.

Concluding the Lesson:

1. Lead a discussion reflecting on the question: Why do people live in cities? (opposed to why do you live in a city?). Reinforce the ideas of ecosystem services, human impacts, and ecological limits in your discussion.