ECOSYSTEM SEARCH

Investigating Illinois' Nature

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Teacher's Guide

Fall Program: Ecosystem Search

Grade Level: Third and Fourth Grade

Field Trip Length: 1.5 hours

INTRODUCTION

Autumn is a time of many changes in central Illinois. It is the time of slowing down and preparing for winter for all plants and animals. With changes everyday, fall is such an exciting season to explore nature! How many distinct ecosystems can be found at Lincoln Memorial Garden? We have three distinct ecosystems that hiking our trails will reveal. We'll visit woodland, wetland, and grassland (prairie) biomes at the Garden, comparing and contrasting them based on the diversity of plants and animals in each, as well as, noting differences in soils and terrain. By noting similarities and differences in each native natural community, students will find an **Ecosystem Search** field trip is a fun way to learn more about the relationships between plants and animals in their homes and habitats.

OBJECTIVES

1. To recognize the basic components of all ecological systems in the world. An ecosystem is made up of plants, animals, microorganisms, soil, rocks, and minerals, water sources and atmosphere interacting with one another. An ecosystem can be as small as a puddle or as large as the Pacific Ocean. It includes the abiotic and biotic factors functioning together as energy moves in and out of the system.
2. To differentiate between three native Illinois ecosystems – woodland, wetland, and grassland (prairie) – found at Lincoln Memorial Garden.
3. To describe similarities and differences between the food webs in each ecosystem visited.
4. To explore and observe animal homes and habitats and the variety of plants specific to Illinois woodland, wetland and prairie communities.

5. To deepen appreciation of central Illinois natural areas during the season of autumn, as well as, to gain a general appreciation of the beauty and wonder and intricate design of nature.

THIS PROGRAM HAS THE POTENTIAL TO MEET THE FOLLOWING STANDARDS.

Learning Area	Goal	Standard	Benchmark
Language Arts	4	A	1a, 1b, 2a, 2b
Language Arts	4	B	1b, 2b
Mathematics	6	D	1, 2
Science	11	A	1a, 1b, 2a, 2b
Science	12	A	1a, 1b, 2a, 2b
Science	12	B	1a, 1b, 2a, 2b
Science	12	E	1a, 1b, 2a, 2b
Social Sciences	16	E	1, 2a

SUGGESTIONS FOR PRETRIP ACTIVITIES

1. Introduce students to ecological systems throughout the world in a general way that helps them to see that all ecosystems have the same major components and the differences in those components is what gives us different ecosystems.
2. Research Illinois history and vegetation maps to find out how ecosystems in Illinois have changed over the years due to human impact. Ask students to write about the early days of Native Americans and European settlers and how they affected changes in our ecosystems.
3. Read and share any of the books in the Resource List at the end of this teacher's guide.
4. Ask students to draw a poster of the food web for one of the native Illinois ecosystems that the students will visit on the field trip. Remember to include plants for the foundation of the food web.

DESCRIPTION OF LINCOLN MEMORIAL GARDEN FIELD TRIP

The field trip will begin with a brief introduction to Lincoln Memorial Garden in one of the Council Rings in the Garden. A naturalist will lead

a discussion about the history of the Garden, the expectations of visitors to the Garden, and an overview of the ecosystems to be visited during the hike.

The students will be divided into small groups of 10 – 12 children. During the naturalist-led hike, the students will travel through the Garden searching for the differences of plant and animal life in our three ecosystems of woodland, wetland, and prairie. We'll listen for bird calls and other native animal sounds, feel the rough leaves of prairie plants, smell the scents of fall from ripe fruits to blooming asters to muddy streams, and look for the beauty each ecosystem offers. The field trip concludes in the Discovery Room of the Nature Center where students will be able to explore exhibits and hands-on activities to learn more about the natural world of central Illinois.

SUGGESTIONS FOR POST TRIP ACTIVITIES

1. Ask each student to choose her/his favorite native ecosystem visited at the Garden. Have each child bring in a shoebox or other small box to create a diorama of the favorite ecosystem. Create a gallery of native ecosystems in the classroom by grouping all like dioramas together – prairie in one corner, woodland and wetland scenes in other places in the room.
2. Play the webbing game developed by Joseph Cornell in *Sharing Nature with Children*. Create cards with a picture of each component of the ecosystem from soil, sun and water to the plants and animals that would be found in the ecological system. Each child wears the picture with a clothespin clipping the picture to the front of the child. The children stand in a circle. Starting with the sun, pass a ball of twine or string to each child connecting him/her with whatever they need or whatever needs them. (Example – sun to plant to insect to bird to mammal to water to….) Be certain all the children are joined with string at the end of the webbing activity.
3. Make charts to compare the plant and animal diversity of each ecosystem. Create Venn diagrams to show overlapping of some animals and plants in ecotones or edges of ecosystems.
4. Take a walk around the schoolyard or neighborhood to look for signs of plants and animals from the three ecosystems studied on the field trip. Lead a discussion of how humans choose to

alter the landscape to meet their needs and preferences when considering their homes.

5. Read and share any of the books listed in the Resource List the end of this teacher's guide.

RESOURCE LIST FOR ECOSYSTEM SEARCH: Investigating Illinois' Nature

Bannatyne – Cugnet, Jo. *A Prairie Alphabet.* University of Saskatchewan Press. 2009

Chapin III, F. Stuart. *Principles of Terrestial Ecosystem Ecology.* Springer Science Business Media. 2002

Davis, Barbara J. *Biomes and Ecosystems.* Gareth Stevens Vital Science Publishers. 2008

Dutton, Michael. *Exploring Ecosystems: An Environmentally Friendly Coloring Book.* Dover Publishing Co. 2009

George, Jean Craighead. *One Day in the Prairie.* Harper Trophy. 1986

Huter, Anne. *What's in a Pond?* Houghton Mifflin Co. 1999

Kalman, Bobbie. *What is a Biome?* Crabtree Publications. 1998

Kalman, Bobbie. *What are Food Chains and Webs?* Crabtree Publications. 1998

Lauber, Patricia. *Who Eats What?* Harper Collins. 1995

MacMillan, Dianne M. *Life in a Deciduous Forest.* Lerner Publishing Co. 2003

McGehee, Claudia. *A Tallgrass Prairie Alphabet.* Bur Oak Books. 2004

McKinney, Barbara Shaw. *Pass the Energy, Please!* Dawn Publications. 1999

Pipe, Jim. *Earth's Ecosystems.* Planet Earth Publishers. 2008

Pratt – Serafini, Kristin Joy. *SalamanderRain: A Pond Journal.* Dawn Publications. 2000

Stille, Darlene R. *Grasslands.* Groliers Publishers. 1999

Stille, Darlene R. *Wetlands.* Groliers Publishers. 1999

Van Cleave, Janice. *Ecology for Every Kid.* John Wiley and Sons, Inc. 1996

Wagner, Angela. *Ecosystems: Ecology and Environment.* Classroom Complete Press. 2007

Wallace, Marianne. *America's Forests: Guide to Plants and Animals (America's Ecosystems).* Fulcrum Publishers. 2009