

Illinois State Museum – MuseumLink Forest

Forest Activity: Forest Layers (Grades 7-12)

Objective: Students will be able to analyze the forest layers and environments of each type of forest shown in the panorama QTVRs in the Forest Module (one per group) after reading the content of the module on forest layers and examining the tree list information for each type of forest and come to some conclusions about the differences and effects of environmental conditions in these forest types.

Grade Levels: 7-12

Time Required: 15-20 minutes of introduction to the topic in whole class discussion; 30-45 minutes for each student to view web site and summarize characteristics of a forest type, make inferences about changes that may occur with changes in conditions, and present findings to his/her group for discussion.



Museumlink Web Sites:

Forest, Present Day:

<http://www.museum.state.il.us/muslink/forest/htmls/pr.html>

Guidelines for student research: Junior High

For each type of forest, students will find out and summarize (divide class into groups; each group responsible for one type or each member of group responsible for one type)

- type of trees that dominate
- relative amount of sunshine reaching the undergrowth
- presence and type of shrub layer vegetation
- presence and type of undergrowth layer
- contents of litter layer
- type of soil (wet, mesic, dry) (loamy, sandy, clay)

Research and Discussion: Read the forest Web site text, view the QTVRs of today's forests, and, if possible, look at some actual Illinois forest areas near you. Consider whether the structure of the forests you see coincides with the descriptions in the text and the QTVRs. Look at the amount of sunlight coming through the canopies in various forests. Do the layers of undergrowth in each forest correspond to the amount of light? What other factors may play a part? (soil, water) Is it possible to predict the changes that may occur in a forest because of climate change, absence of fire, clearing of land by logging and farming, or introduction of new species of plants? What changes occurred to forested areas from 1825 to the present? What were the causes? Write a summary of the characteristics of a forest type of your choice from your research and observations.

Assessment:

The written work of each student should reflect an understanding and analysis of the environmental conditions of a forest type as discussed in class and on the Web site, and the possible changes in the forest layers reflected in specified changes in environmental conditions in the forest, such as those seen during settlement of Illinois during the period from 1825 to 1900.

Illinois Goals and Standards addressed:

Goal 12: Understand the fundamental concepts, principles, and interconnections of the life, physical, and earth/space sciences.

Standard B: Know and apply concepts that describe how living things interact with each other and with their environment.

Middle/Junior High: 12.B.3a: Identify and classify biotic and abiotic factors in an environment that affect population density, habitat, and placement of organisms in an energy pyramid.

Early High School: 12.B.4b: Simulate and analyze factors that influence the size and stability of populations within ecosystems.

Late High school: 12.B.5b: Compare and predict how life forms can adapt to changes in the environment by applying concepts of change and constancy.

Goal 13: Understand the relationships among science, technology, and society in historical and contemporary contexts.

Standard B: Know and apply concepts that describe the interaction between science, technology, and society.

Middle/Junior High: 13.B.3d: Analyze the interaction of resource acquisition, technological development, and ecosystem impact.