



Children's Museum of Houston

Pre/Post Classroom Activities

Getting to Know the Ecosystems of Houston

Rationale

EcoStation is an active, outdoor/indoor environmental exhibit where visitors engage in ecological studies and explore environmental issues by visiting a native plant garden, a woodland area, the bayou table, the pond and a research pavilion. Through these and several other exhibit areas, visitors can participate in diverse hands-on activities such as stream bed creation, insect collecting, tree rubbings, footprint identification, and more!

TEKS Objectives (Science)

5.9A: Compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem.

5.9B: Analyze and describe adaptive characteristics that result in an organism's unique niche in an ecosystem.

5.9C: Predict some adaptive characteristics required for survival and reproduction by an organism in an ecosystem.

Background

In this lesson plan, children become familiar with Houston ecosystems and how the living organisms in that ecosystem depend on each other. Children will be able to identify, and describe the different ecosystems of the Houston area, and compare, analyze, describe, and predict how the living organisms in the Houston ecosystems use adaptive characteristics to survive. Children will later be able to further explore plants in their visit to the *EcoStation* exhibit.

Vocabulary

Biome – A large community of plants and animals that occupies a distinct region.

Habitat – The natural environment of an organism.

Ecosystem – A system formed by the interaction of a community of organisms with their environment,

Materials (per group of students)

- Computers
- Books from recommended reading list
- Research materials (reference books, index cards, highlighters, etc.)

Procedure

1. Introduce students to the difference between biomes, ecosystems, and habitats.
2. Discuss how living organisms have roles in their ecosystems (called niches).
3. Have students divide into groups of 2-4 and pick an ecosystem to research on. They can choose one of the following Houston ecosystems: Bayou Wilderness, Big Thicket, Coastal Marshes, Columbia Bottomlands, Estuary and Bay Systems, Gulf of Mexico, Piney Woods, Prairie Systems, Trinity Bottomlands, and Post Oak Savannah.
4. Students will produce a presentation to display their information about their ecosystem research. They can produce a 3-D model, PowerPoint, newscast/documentary, interactive map, web design, brochure, magazine, etc.
5. Have students include the following information in their presentation:
 - a. Location in Houston area
 - b. Description of ecosystem (climate, area size, rainfall, landforms, etc.)
 - c. Wildlife commonly found (animals, insects, plants, etc.)
 - d. Examples of Wildlife interdependencies and adaptations
 - e. National or State Parks
 - f. Environmental concerns or issues

Questions to ask

- What is an ecosystem? How is an ecosystem different from a habitat?
- How does your ecosystem compare to other ecosystems in Houston?
- Which ecosystem do you live in?
- Are there any environmental concerns or issues that you learned about in your ecosystem? How could you address or help solve them?

Extensions

Ask students to visit their chosen Houston ecosystem and report back with anecdotes and pictures of their visit.

Resources

Recommended Reading:

- Houston Atlas of Biodiversity by Rick Bass (Texas A&M University Press). Focuses on habitats, animal and plant communities, and broad multi-county ecoregions of Houston.
- What are Wetlands? by Bobbie Kalman and Amanda Bishop. Investigates some types of wetlands, the many plants and animals that live in wetlands; and the threats to these ecosystems.
- What is a Forest? by Bobbie Kalman and Kathryn Smithyman. Describes the various types of forests, elements that make up a forest ecosystem, the wide range of plant and animal species that live in different forests, and the importance of forests to the rest of the Earth.
- Marshes and Swamps by Gail Gibbons. Defines marshes and swamps, discusses how conditions in them may change, and examines the life found in and around them.

- Grasslands: Sweeping Savannahs by Jeri Freedman. Defines grasslands and savannahs, discusses how conditions in them may change, and examines the life found in and around them.
- Eyewitness Series Books including Ecology, Pond and River, Ocean and Seashore

Websites:

- BrainPop: Ecosystems (www.brainpop.com/science/ecologyandbehavior/ecosystems/)
Provides educational movies that help make learning fun. In this movie, Tim and Moby explain what an ecosystem is and what makes one up.
- Houston Wilderness (<http://www.houstonwilderness.org>)
Houston Wilderness provides an in depth look at the different ecosystems and wildlife of the Houston and surrounding areas including an interactive map and other resources.
- Ecosystems of the World (<http://library.thinkquest.org/11353/ecosystems.htm>)
Provides a description of a biome and an ecosystem and explains the difference between the two along with a list of biomes with links.
- Biomes and Ecosystems
(<http://www.windows.ucar.edu/tour/link=/earth/ecosystems.html&edu=elem>)
Provides a description of a biome and an ecosystem and explains the difference between the two along with a list of biomes with links.
- NatureWorks: Ecosystems (<http://www.nhptv.org/NatureWorks/nwepecosystems.htm>)
Provides information of what an ecosystems is and its components.
- Geology4kids: An Ecological System
(http://www.geography4kids.com/files/land_ecosystem.html)
Provides a description of a biome and an ecosystem and explains the difference between the two along with a list of biomes with links.