



web of water

Web of Water Webisode 4: In the Coastal Plain Discussion Questions and Answers

South Carolina Science Standards Grades 1-12

These standards correlate to discussion questions and answers for Webisode 4 of the Web of Water Series at <http://www.webofwater.org>.

QUESTIONS:

1. We saw a number of different types of trees as we paddled through the Congaree. One of those trees was the Red Maple. Can you describe the life cycle of a Red Maple tree?
2. As we pass the Fall line and head toward the coast we can see the effects of erosion and deposition. What are erosion and deposition and how do they shape the waterways?
3. Limestone was formed by the skeletons of ancient sea creatures. Why can limestone be found in the coastal plains?
4. Fossils of Sharks Mastadon teeth and Trilobites can be found through out the coastal plain. What are trace, cast, mold, petrified, and preserved fossils?
5. What is the difference between a park and a wildlife refuge?
6. Who was Francis Beidler and why is he important in our history?

ANSWERS:

1. The life cycle of Red Maple Tree:



After pollination (the spreading of pollen from flower to flower) occurs, seeds are produced and may be stored in fruits. The Red Maple then becomes a seedling. Seedlings produce the parts of the plant that will be needed for the adult plant to survive in its habitat. The Red maple then becomes a mature plant. Mature plants have the same structures (for example roots, stems, and leaves) as seedlings, but in addition they develop flowers or cones, which produce seeds.

2. Erosion is the movement of sediments and soil by wind, water, ice, and gravity. Deposition is the dropping, or depositing, of sediments by water, wind, or ice.

3. Limestone can be found in the coastal plains because many years ago the coastal plains were under the ocean. This led to huge deposits of marine creatures and the limestone deposits they have become today.

4. Trace fossils form when the mud or sand hardens to stone where a footprint, trail, or burrow of an organism was left behind. Cast fossils form when a mold is filled with sand or mud that hardens into the shape of the organism. Mold fossils form when sediments bury an organism and the sediments change into rock; the organism decays leaving a cavity in the shape of the organism. Petrified fossils form when minerals soak into the buried remains, replacing the remains, and changing them into rock. Preserved fossils form when entire organisms or parts of organisms are prevented from decaying by being trapped in rock, ice, tar, or amber.

5. A park is a bounded area of land, usually in its natural or semi-natural (landscaped) state and set aside for some purpose, usually to do with recreation. A wildlife refuge may be a naturally-occurring sanctuary, such as an island, that provides protection for species from hunting, predation or competition. "Wildlife refuge" is also one of the many titles given to very protected areas and refers to a geographic territory within which wildlife is protected which is also commonly known as a "wildlife sanctuary." Such wildlife refuges are generally officially designated territories, created by the government though the land itself may be publicly or privately owned.

6. Francis Beidler was a champion of conservation practices, who purchased part of the Four Holes Swamp in the 1890s. After his death in 1924, family members maintained his conservation values by preserving the property until the 1960s. At that time, The Nature Conservancy and the National Audubon Society combined their resources to purchase what is now Francis Beidler Forest.

GRADE 1

Plants



Standard 1-2: The student will demonstrate an understanding of the special characteristics and needs of plants that allow them to survive in their own distinct environments. (Life Science)

Indicators

- 1-2.2 Illustrate the major structures of plants (including stems, roots, leaves, flowers, fruits, and seeds).
- 1-2.4 Summarize the life cycle of plants (including germination, growth, and the production of flowers and seeds).

GRADE 3

Habitats and Adaptations

Standard 3-2: The student will demonstrate an understanding of the structures, characteristics, and adaptations of organisms that allow them to function and survive within their habitats. (Life Science)

Indicators

- 3-2.1 Illustrate the life cycles of seed plants and various animals and summarize how they grow and are adapted to conditions within their habitats.
- 3-2.4 Explain how changes in the habitats of plants and animals affect their survival.

GRADE 3

Earth's Materials and Changes

Standard 3-3: The student will demonstrate an understanding of Earth's composition and the changes that occur to the features of Earth's surface. (Earth Science)

Indicators

- 3-3.3 Recognize types of fossils (including molds, casts, and preserved parts of plants and animals).
- 3-3.4 Infer ideas about Earth's early environments from fossils of plants and animals that lived long ago.
- 3-3.5 Illustrate Earth's saltwater and freshwater features (including oceans, seas, rivers, lakes, ponds, streams, and glaciers).
- 3-3.8 Illustrate changes in Earth's surface that are due to slow processes (including weathering, erosion, and deposition) and changes that are due to rapid processes (including landslides, volcanic eruptions, floods, and earthquakes).



GRADE 4

Organisms and Their Environments

Standard 4-2: The student will demonstrate an understanding of the characteristics and patterns of behavior that allow organisms to survive in their own distinct environments. (Life Science)

Indicators

- 4-2.5 Explain how an organism's patterns of behavior are related to its environment (including the kinds and the number of other organisms present, the availability of food and other resources, and the physical characteristics of the environment).
- 4-2.6 Explain how organisms cause changes in their environment.

GRADE 5

Ecosystems: Terrestrial and Aquatic

Standard 5-2: The student will demonstrate an understanding of relationships among biotic and abiotic factors within terrestrial and aquatic ecosystems. (Life Science)

Indicators

- 5-2.4 Identify the roles of organisms as they interact and depend on one another through food chains and food webs in an ecosystem, considering producers and consumers (herbivores, carnivores, and omnivores), decomposers (microorganisms, termites, worms, and fungi), predators and prey, and parasites and hosts.
- 5-2.5 Explain how limiting factors (including food, water, space, and shelter) affect populations in ecosystems.

GRADE 5

Landforms and Oceans

Standard 5-3: The student will demonstrate an understanding of features, processes, and changes in Earth's land and oceans. (Earth Science)

Indicators



- 5-3.1 Explain how natural processes (including weathering, erosion, deposition, landslides, volcanic eruptions, earthquakes, and floods) affect Earth's oceans and land in constructive and destructive ways.
- 5-3.6 Explain how human activity (including conservation efforts and pollution) has affected the land and the oceans of Earth.

GRADE 6

Structures, Processes, and Responses of Plants

Standard 6-2: The student will demonstrate an understanding of structures, processes, and responses of plants that allow them to survive and reproduce. (Life Science)

Indicators

- 6-2.1 Summarize the characteristics that all organisms share (including the obtainment and use of resources for energy, the response to stimuli, the ability to reproduce, and process of physical growth and development).
- 6-2.5 Summarize each process in the life cycle of flowering plants (including germination, plant development, fertilization, and seed production).

GRADE 7

Ecology: The Biotic and Abiotic Environment

Standard 7-4: The student will demonstrate an understanding of how organisms interact with and respond to the biotic and abiotic components of their environment. (Earth Science, Life Science)

Indicators

- 7-4.3 Explain the interaction among changes in the environment due to natural hazards (including landslides, wildfires, and floods), changes in populations, and limiting factors (including climate and the availability of food and water, space, and shelter).
- 7-4.5 Summarize how the location and movement of water on Earth's surface through groundwater zones and surface-water drainage basins, called watersheds, are important to ecosystems and to human activities.
- 7-4.6 Classify resources as renewable or nonrenewable and explain the implications of their depletion and the importance of conservation.



GRADE 8

Earth's Biological History

Standard 8-2: The student will demonstrate an understanding of Earth's biological diversity over time. (Life Science, Earth Science)

Indicators

- 8-2.2 Summarize how scientists study Earth's past environment and diverse life-forms by examining different types of fossils (including molds, casts, petrified fossils, preserved and carbonized remains of plants and animals, and trace fossils).
- 8-2.3 Summarize the factors, both natural and man-made, that can contribute to the extinction of a species.

9-12 BIOLOGY

Standard B-6: The student will demonstrate an understanding of the interrelationships among organisms and the biotic and abiotic components of their environments.

Indicators

- B-6.2 Explain how populations are affected by limiting factors (including density-dependent, density-independent, abiotic, and biotic factors).
- B-6.6 Explain how human activities (including population growth, technology, and consumption of resources) affect the physical and chemical cycles and processes of Earth.

