Middle School

Selfie Scavenger Hunt (Write Up)

South Carolina Aquarium

Overview

Focus Questions

- What habitats and organisms can be found in South Carolina?
- How do plants and animals adapt to survive in their environment?
- How do humans affect the biotic and abiotic components in an ecosystem?
- How does the downhill flow of water affect the land and organisms of South Carolina?
- Why is learning about local plants and animals important?

Activity Synopsis

Students will participate in an activity in which they explore the South Carolina Aquarium. They will:

- Closely observe organisms found in South Carolina
- Investigate different ecosystems within the state's regions
- Witness how watersheds affect ecosystems within South Carolina
- Inquire about adaptations that help organisms to survive
- Demonstrate their knowledge by successfully completing the Selfie Scavenger Hunt

Time Frame

This activity will take 60 – 90 minutes to complete.
The time frame can be shortened by providing the students with fewer clues. Please see Procedure for further details.

Objectives

The student will be able to:

- Observe and study ecosystems found in South Carolina
- Recognize how humans affect the health of an ecosystem
- Provide pictorial evidence while investigating the adaptations of local plants and animals
- Construct explanation to the effects of the downhill flow of water on land
- Communicate why learning about local ecosystems leads to conservation

Key Terms

- Abiotic
- Biotic
- Brackish
- Camouflage
- DDT
- Ecosystem
- Ectothermic
- Evergreen
- Invasive
- Invertebrate
- Endangered species
- Food web
- Nocturnal
- Opportunistic Predator/feeder
- Organism
- Scutes
- Tannins
- Watershed

Middle School

Selfie Scavenger Hunt (Write Up)

South Carolina Aquarium

Standards

2014 Academic Standards and Performance Indicators for Science

6th Grade: 6.L.4A.1, 6.L.4B.1, **6.L.4B.2,** 6.L.4B.3, 6.E.2A.3
7th Grade: 7.EC.5, 7.EC.5A, 7.EC.5B, **7.EC.5B.4,** 7.EC.5B.3
8th Grade: 8.E.6B.1, **8.E.6B.2**

*** Bold standards are the main standards addressed in this activity**

2014 Sixth Grade Performance Indicators
6.L.4A.1 Obtain and communicate information to support claims that living organisms (1) obtain and use resources for energy, (2) respond to stimuli, (3) reproduce, and (4) grow and develop.
6.L.4B.1 Analyze and interpret data related to the diversity of animals to support claims that all animals (vertebrates and invertebrates) share common characteristics.
6.L.4B.2 Obtain and communicate information to explain how the structural adaptations and processes of animals allow for defense, movement, or resource obtainment.
6.L.4B.3 Construct explanations of how animal responses (including hibernation, migration, grouping, and courtship) to environmental stimuli allow them to survive and reproduce.
6.E.2A.3 Construct explanations of the processes involved in the cycling of water through Earth's systems (including transpiration, evaporation, condensation and crystallization, precipitation, and downhill flow of water on land).

2014 Seventh Grade Performance Indicators
7.EC.5 The student will demonstrate an understanding of how organisms interact with and respond to the biotic and abiotic components of their environments.
7.EC.5A. In all ecosystems, organisms and populations of organisms depend on their environmental interactions with other living things (biotic factors) and with physical (abiotic) factors (such as light, temperature, water, or soil quality). Disruptions to any component of an ecosystem can lead to shifts in its diversity and abundance of populations.
7.EC.5B. Organisms in all ecosystems interact with and depend upon each other. Organisms with similar needs compete for limited resources. Food webs and energy pyramids are models that demonstrate how energy is transferred within an ecosystem.
7.EC.5B.4 Define problems caused by the introduction of a new species in an environment and design devices or solutions to minimize the impact(s) to the balance of an ecosystem.
7.EC.5B.3 Analyze and interpret data to predict how changes in the number of organisms of one species affects the balance of an ecosystem.

2014 Eighth Grade Performance Indicators
8.E.6B.1 Construct explanations for how biological adaptations and genetic variations of traits in a population enhance the probability of survival in a particular environment.
8.E.6B.2 Obtain and communicate information to support claims that natural and human-made factors can contribute to the extinction of species.

Middle School

Selfie Scavenger Hunt (Write Up)

South Carolina Aquarium

Procedure

Materials

- Scavenger Hunts
- Key Terms
- Camera, phone, or tablet
- Regions map of South Carolina (see resources)

Prior to Field Trip

Introductory Discussion:

1. Invite students to start a discussion about their field trip to the South Carolina Aquarium. Some discussion questions include: *Who has visited the South Carolina Aquarium before? What kinds of plants and animals do you think we will see? Why are these particular plants and animals cared for at the aquarium?*

2. Explain how the plants and animals they will see can be found in South Carolina. There are organisms at the aquarium from all of the regions in the state, from the mountains to the coast. Review the regions of South Carolina- Mountains, Piedmont, Sand Hills, Inner Coastal Plain, Outer Coastal Plain, Coastal Zone, and Ocean.

3. Ask the students how water from the mountains makes it way to the ocean and how this affects the topography of the state. Display the South Carolina Regions and Rivers Map to illustrate rivers flowing down towards the coast into the ocean. Define that **watershed**, also known as drainage basins, is an area of land where all of the water that collects in the area from precipitation will eventually drain into the same river, lake, wetland or other body of water.

4. Explain how their exploration through the Aquarium will be a mini-trip through each region. They will get to see the journey a water droplet takes, starting in the mountains and flowing down into the ocean.

5. Ask the students to list some of the animals and plants they might find in each region/exhibit as they explore and discuss why those organisms live in that specific habitat.

6. Lastly, discuss why the students think learning about local plants and animals is important.

7. Go over the key terms listed above before their trip. The key terms will aid the students during their exploration at the aquarium.

Field Trip Activity

Selfie Scavenger Hunt Instructions:

Students can be paired or put into groups while they explore the Aquarium to complete the scavenger hunt. There are 20 clues listed, however some can be eliminated to condense the activity.

The clues are listed sequentially with the typical walking flow of the Aquarium. The first clue is outside on the *Harbor Overlook*. Students will then move inside the Aquarium and the clues will direct them to the following: *Mountain Forest, Piedmont, Coastal Plain, Saltmarsh Aviary, Coast, Ocean* and *Zucker Family Sea Turtle Recovery.* The sequence can be

explained so the students explore the Aquarium as a water droplet beginning in the mountains and making its way through each region of the state until it eventually flows into the ocean.

The students will read the clues and locate the plant, animal, or habitat/exhibit being described. They will then take a picture of themselves and the answer (a selfie) to record their finding. Pictures can be taken by the students or a chaperone. Answers can also be written, if the option to take pictures is not available.

Pictures can be emailed for assessment or checked directly from the phone/tablet. The following Grading Rubric can be used for assessment. Students may also use the rubric to help peer-evaluate teamwork.

Follow Up Questions:

- What was your favorite animal? Why?
- After visiting the South Carolina Aquarium, do you think the physical components of an ecosystem can be man-made? How are the fabricated abiotic components for the biological communities able to support and sustain life in each exhibit?
- How can natural and human-made factors impact the balance of an ecosystem?
- How do watersheds affect the animals of South Carolina?
- Do you feel inspired to help an animal species you saw today? What can you do to help this animal species?

Resources

Reference Websites

Regions and Rivers Maps:
http://curriculum.scaquarium.org/wp-content/uploads/2016/07/South-Carolina-Regions-Map.pdf
http://artsandsciences.sc.edu/cege/resources/scmaps/scmaps.html

Ecosystem Review for Students:
https://www.brainpop.com/science/ecologyandbehavior/ecosystems/

Glossary:
http://www.webquest.hawaii.edu/kahihi/sciencedictionary/A/

Watersheds:
http://www.scdhec.gov/HomeAndEnvironment/Water/Watersheds/
https://www.epa.gov/students

Middle School

Selfie Scavenger Hunt (Write Up)

South Carolina Aquarium

Grading Rubric

CATEGORY	20	15	10	5
Time-management	Used time well during the scavenger hunt.	For the most part, used time well during the scavenger hunt.	Used time well for half of the scavenger hunt.	Did NOT use time well during the scavenger hunt.
Problem-solving	Actively looked for answers and had suggestions.	Refined answers suggested by others.	Did not have suggestions, but was willing to try out solutions suggested by others.	Did not try to solve problems or help others solve problems.
Accuracy	Completed all of the clues accurately.	Completed 80% of the clues accurately. **16 out of 20	Completed 70% of the clues accurately. **14 out of 20	Completed less than half of the clues accurately. **10 or less of 20
Preparedness	Defined key terms prior to trip and brought necessary materials.	Defined most of key terms prior to trip and brought necessary materials.	Defined at least half of key terms and brought materials.	Didn't define key terms and was not prepared.
Conclusion Discussion	Participated in conclusion discussion. Answered questions prior to discussion.	Somewhat participated in conclusion discussion. Answered questions prior to discussion.	Didn't participate in conclusion discussion, but answered questions prior to discussion.	Didn't participate in conclusion discussion and didn't answer follow-up questions.

Total _____/100 points