

Selfie Scavenger Hunt (Write Up)

Overview

Focus Questions

- What ecosystems and biological communities can be found in South Carolina?
- How do the organisms within these ecosystems adapt to survive?
- How do humans affect the biotic and abiotic components in an ecosystem?
- How does learning about local plants and animals affect biodiversity and why is it important?

Activity Synopsis

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

- Closely observe biological communities found in South Carolina
- Study different ecosystems within the state's regions as they investigate the galleries
- Inquire about adaptations that help organisms survive
- Demonstrate their knowledge by successfully completing the Selfie Scavenger Hunt

Time Frame

This activity will take 1.5 – 2 hours at the Aquarium.

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 abiotic and biotic components of ecosystems in South Carolina
- Recognize how humans affect the health and biodiversity of an ecosystem
- Provide pictorial evidence by investigating the adaptations of local plants and animals
- Communicate why learning about local ecosystems can lead to conservation

Key Terms

- Abiotic/Biotic
- Biological community
- Brackish
- Conservation
- Cartilaginous
- DDT
- Ecosystem
- Ectothermic
- Endangered species
- Evergreen
- Food web
- Herbivore
- Invasive
- Invertebrate
- Opportunistic predator/feeder
- Organism
- Nocturnal
- Scutes
- Tannins

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Standards

2014 Academic Standards and Performance Indicators for Science

H.B.6: The student will demonstrate an understanding that ecosystems are complex, interactive systems that include both biological communities and physical components of the environment.

H.B.6C. A complex set of interactions within an ecosystem can keep its numbers and types of organisms relatively stable over long periods of time. Fluctuations in conditions can challenge the functioning of ecosystems in terms of resource and habitat availability.

H.B.6C.1 Construct scientific arguments to support claims that the changes in the biotic and abiotic components of various ecosystems over time affect the ability of an ecosystem to maintain homeostasis. Sustaining biodiversity maintains ecosystem functioning and productivity which are essential to supporting and enhancing life on Earth. Humans depend on the living world for the resources and other benefits provided by biodiversity. Human activity can impact biodiversity.

Procedure

Materials

- Scavenger hunt document
- Writing utensil
- Camera, phone or tablet

Prior to Field Trip:

Introductory Discussion:

1. Invite students to have a discussion about their upcoming field trip to the South Carolina Aquarium. Ask: *What is an ecosystem? Will we find ecosystems at the South Carolina Aquarium? Explain.* Define that an **ecosystem** is a complex, interactive system that includes both biological communities and physical components of the environment. Break up the definition and discuss. If this is not the initial introduction to ecosystems, the students can lead the discussion.

ABIOTIC- PHYSICAL COMPONENTS	BIOTIC- BIOLOGICAL COMMUNITIES
<i>Sunlight</i> <i>Temperature</i> <i>Precipitation</i> <i>Water/Moisture</i> <i>Soil</i>	<i>Producers</i> <i>Consumers</i> <i>Apex Consumers</i> <i>Decomposers</i> <i>*Energy is exchanged between these communities*</i>

2. Guide the discussion towards the ecosystems they will see at the Aquarium. Ask: *Can the physical components of an ecosystem be man-made? Give them the example of using a heating lamp instead of sunlight. Ask: How are the fabricated abiotic components for the biological communities necessary to support and sustain life at the Aquarium?*
3. Explain how all of the plants and animals they will see at the Aquarium can be found in South Carolina. There are organisms represented from all of the regions of the state, from the mountains to the sea. Describe some ecosystems that will be showcased (*Examples: Mountain Forest, Piedmont, Reservoir, Blackwater Swamp, Pond, Sandy Plain, Carolina Bay, Longleaf Pine Forest, Saltmarsh, Tide Pool, Shallow Ocean and the Great Ocean*).

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4. Discuss how the animals at the Aquarium reside there because they sustained an injury or they were born in captivity (with the exception of fish species). Explain how these animals would not be able to care for themselves in the wild. Ask: *Do you think humans affected these animals? If so, how? How else can humans affect an ecosystem?*
5. Last, ask the students if they think learning about local plants and animals is important.
6. Go over key terms from the above list. These key terms will aid the students during their exploration at the Aquarium.

Activity – Selfie Scavenger Hunt Instructions:

Students can be paired up or put into groups while they explore the Aquarium to complete the selfie scavenger hunt. There are thirty clues listed – if needing to decrease the activity time, some clues may be removed. On the [Answer Key](#), note that some of the clues have asterisks to note they are observation-based. The remaining clues can be answered by reading the species information plaques posted throughout each exhibit.

The clues are listed sequentially with the typical walking flow of the Aquarium. The first two clues start outside, on the *Harbor Overlook* and then moving into *The Shallows*. Students will then move inside the Aquarium and the clues will direct them to the following: *Carolina Seas, Mountain Forest, Piedmont, Coastal Plain, Saltmarsh Aviary, Coast, Ocean and Zucker Family Sea Turtle Recovery*. You may choose to explain this flow to the students or eliminate this feedback to increase the difficulty level of the activity. If you plan to use all thirty clues, it is recommended that you explain the sequential flow to the students so groups can start at different exhibits to prevent clumping.

The students will read the clues and locate the plant, animal, or ecosystem/exhibit being described. They will take a picture of themselves and the answer (a selfie) to document their findings. 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 teacher assessment or checked directly from the device. The [Grading Rubric](#) can be used to aid in assessment as well. Students may also use the Grading Rubric to help peer-evaluate their fellow team member's work.

Follow Up Questions:

- What was your favorite animal? Why?
- After visiting the South Carolina Aquarium, do 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 does learning about the local ecosystems lead to conservation?
- Do you feel inspired to help an animal species you saw today? What can you do to help this animal species?

Resources

Reference Websites

- <http://www.scaquarium.org/our-animals>
- <https://www.brainpop.com/science/ecologyandbehavior/ecosystems/>
- http://www.phschool.com/science/biology_place/glossary/index.html
- <http://www.ecosystem.org/components-of-the-ecosystem>

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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. **24 out of 30 **20 out of 25 **16 out of 20	Completed 70% of the clues accurately. **21 out of 30 **17 out of 25 **14 out of 20	Completed less than half of the clues accurately. **15 or less of 30 **12 or less of 25 **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