



# Jekyll Island Day Trip

## 2020 - Driftwood Education Center



### **Class Description:**

*Study beach ecology, geology, and the marsh, right where it all happens as we explore Jekyll Island! Students will gain a better appreciation for the plants and animals that call these habitats their home.*

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## Table of contents and outline:

### I. Pre-class set-up

1. Be sure to grab seine nets, buckets, rescue tubes, and lunches.
2. Take backpack with: water, sunscreen, bug repellent, first aid kit and anything else you want.
3. Tell students to dress for weather on Jekyll.

### II. Introduction, overview, and assessment

1. Assess what students know about Jekyll Island.
2. Ask questions and encourage exploration.
3. Let students know what is going to happen.

### III. Option 1 – North End Hike

1. Driftwood Beach
2. Maritime Forest
3. Marsh Exploration
4. Horton House Historical Center

### IV. Option 2 – Visit to Sea Turtle Center or Boat Trawl and Driftwood Beach

#### V. Lunch

#### VI. Seining or Living Beach

1. Explanation of how to seine
2. Go seining and discuss organisms caught
3. OR Living Beach activities

#### VII. Barrier Island Dynamics at Great Dunes

1. Barrier Islands and Dunes
2. The Big Picture and Where Georgia Fits in
3. Tides

### VIII. Conclusion and Wrap Up

#### IX. Additional Information

1. Turtle Hurdles
2. Fish, Shark, Algae Tag

#### Florida Standards met

- 4<sup>th</sup>  
SC.4.L.17.4 Recognize ways plants and animals, including humans, can impact the environment.  
SC.4.E.5.2 Describe the changes in the observable shape of the moon over the course of about a month.
- 5<sup>th</sup>  
SC.5.L.14.2 Compare and contrast the function of organs and other physical structures of plants and animals, including humans, for example: some animals have skeletons for support -- some with internal skeletons others with exoskeletons -- while some plants have stems for support.  
SC.5.L.17.1 Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.  
SC.5.E.7.5 Recognize that some of the weather-related differences, such as temperature and humidity, are found among different environments, such as swamps, deserts, and mountains.
- 6<sup>th</sup>  
SC.6.E.7.2 Investigate and apply how the cycling of water between the atmosphere and hydrosphere has an effect on weather patterns and climate.  
SC.6.E.6.1 Describe and give examples of ways in which Earth's surface is built up and torn down by physical and chemical weathering, erosion, and deposition.
- 7<sup>th</sup>  
SC.7.E.6.5 Explore the scientific theory of plate tectonics by describing how the movement of Earth's crustal plates causes both slow and rapid changes in Earth's surface, including volcanic eruptions, earthquakes, and mountain building.

## Concepts:

Focal points of this class are:

1. Georgia's coasts have a large diversity of organisms that depend on the tidal activity for survival.
2. Water and wind change and form landscapes.
3. Human impact is a threat to the plant and animal species that inhabit tidal zones.

## Outcomes:

Upon completion of this class, students will be able to:

1. Give examples of how water and wind change barrier islands.
2. Give examples of plants and animals found on the beach.
3. Explain the importance of a marsh or wetland ecosystem.
4. Realize the impact that their daily lifestyle has on local beach ecosystems.

#### Georgia Performance Standards met:

- 5<sup>th</sup>:  
S5E1. Obtain, evaluate, and communicate information to identify surface features on the Earth caused by constructive and/or destructive processes.
- 6<sup>th</sup>  
S6E2. Obtain, evaluate, and communicate information about the effects of the relative positions of the sun, Earth, and moon.  
S6E3. Obtain, evaluate, and communicate information to recognize the significant role of water in Earth processes.  
S6E4. Obtain, evaluate, and communicate information about how the sun, land, and water affect climate and weather.
- 7<sup>th</sup>  
S7L1. Obtain, evaluate, and communicate information to investigate the diversity of living organisms and how they can be compared scientifically  
S7L4. Obtain, evaluate, and communicate information to examine the interdependence of organisms with one another and their environments.

#### South Carolina Standards met

- 4<sup>th</sup>  
4.E.3B.1 Analyze and interpret data from observations to describe patterns in the (1) location, (2) movement, and (3) appearance of the Moon throughout the year.  
4.E.3B.2 Construct explanations of how day and night result from Earth's rotation on its axis.  
4.L.5: The student will demonstrate an understanding of how the structural characteristics and traits of plants and animals allow them to survive, grow, and reproduce.
- 5<sup>th</sup>  
5.E.3A.1 Construct explanations of how different landforms and surface features result from the location and movement of water on Earth's surface through watersheds (drainage basins) and rivers.  
5.E.3: The student will demonstrate an understanding of how natural processes and human activities affect the features of Earth's landforms and oceans.  
5.E.3A.2 Develop and use models to describe and compare the characteristics and locations of the landforms on continents with those on the ocean floor (including the continental shelf and slope, the mid-ocean ridge, the rift zone, the trench, and the abyssal plain).  
5.L.4: The student will demonstrate an understanding of relationships among biotic and abiotic factors within terrestrial and aquatic ecosystems.  
5.L.4A.1 Analyze and interpret data to summarize the abiotic factors (including quantity of light and water, range of temperature, salinity, and soil composition) of different terrestrial ecosystems and aquatic ecosystems.  
5.L.4A.2 Obtain and communicate information to describe and compare the biotic factors (including individual organisms, populations, and communities) of different terrestrial and aquatic ecosystems.
- 6<sup>th</sup>  
6.E.2B.4 Construct explanations for how climate is determined in an area (including latitude, elevation, shape of the land, distance from water, global winds, and ocean currents).  
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.4: The student will demonstrate an understanding of how scientists classify organisms and how the structures, processes, behaviors, and adaptations of animals allow them to survive.  
6.L.5: The student will demonstrate an understanding of the structures, processes, and responses that allow protists, fungi, and plants to survive and reproduce.
- 7<sup>th</sup>  
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.

Next Generation Science Standards met:

4<sup>th</sup>: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

**4-ESS2-1.** Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.

5<sup>th</sup>:

**5-PS2-1.** Support an argument that the gravitational force exerted by Earth on objects is directed down.

Middle school:

**MS-PS2-4.** Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

**MS-LS1-4.** Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

**MS-ESS1-1.** Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.

**MS-ESS2-3.** Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.