



Barrier Island Dynamics

Driftwood Education Center



Class Description:

Study beach geology, barrier island dynamics, and tides right where it all happens: the beach! Students will gain a better appreciation for the plants and animals that call the coast their home.

Appropriate for all grade levels including High School Students.

NOTE: As of 2006-2007, you must take at least 3 hours of consecutive Beach classes.

There will be no 1.5 hour classes offered at the beach.

Please review and choose 2 of 3 beach classes that Driftwood offers.

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Beach Geology

Table of contents and outline:

I. Introduction, overview, and assessment

II. The Big Picture

Concepts 1, 2 & Outcomes 1, 2, 3

1. Discuss continental shelf and plate tectonics.
2. Compare wave size in Georgia and California through activities.

III. Take a Bite out of Georgia

Concepts 1, 2, 3 & Outcomes 3, 4

1. Tides. Why are the tides so high in Georgia.
2. What causes the tides.

IV. Longshore Current

Concepts 1, 2, 3 & Outcomes 3, 4, 5

1. Discuss how longshore currents form islands.
2. Students create own barrier island out of sand.

V. Blowing in the Wind

Concepts 1, 2, 3 & Outcomes 3, 4, 5

1. Play Sea Oat game to explain how sand dunes are formed.

VI. Role of Dunes

Concepts 2, 3 & Outcomes 3, 4

1. Discuss how sand dunes are important to communities.

VII. Conclusion & Wrap Up

IX. Additional Activity

- Ghost shrimp pump.

Concepts:

Focal points of this class are:

1. Land is formed and changed over a long period of time.
2. Water and wind change and form landscapes.
3. People, plants, and animals are affected by barrier island dynamics.
4. Exploration can lead to an appreciation of our environment.

Outcomes:

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

1. Understand that plate tectonics help to form landscapes, such as mountains, beaches, earthquakes, and islands.
2. Give examples of how water and wind change barrier islands.
3. Explain how barrier island dynamics can affect people, plants, and animals.
4. Give examples of plants and animals found on the beach.

Georgia Performance Standards met or exceeded:

5th Grade:

1. **S5CS8.a** Scientific investigations may take many different forms, including observing what things are like or what is happening somewhere, collecting specimens for analysis, and doing experiments.
2. **S5E1. a. b.** Students will identify surface features of the Earth caused by constructive or destructive processes.

6th Grade:

1. **S6E3.d.** Explain the causes of waves, currents, and tides.
2. **S6E5.e.** Explain the effects of physical processes on geological features including oceans.

7th Grade:

1. **S7CS5. a.** Observe and explain how parts can be related to other parts in a system such as predator/prey relationships in community/ecosystem.
2. **S7L4.c.** Recognize that changes in environmental conditions can affect the survival of both individuals and entire species.