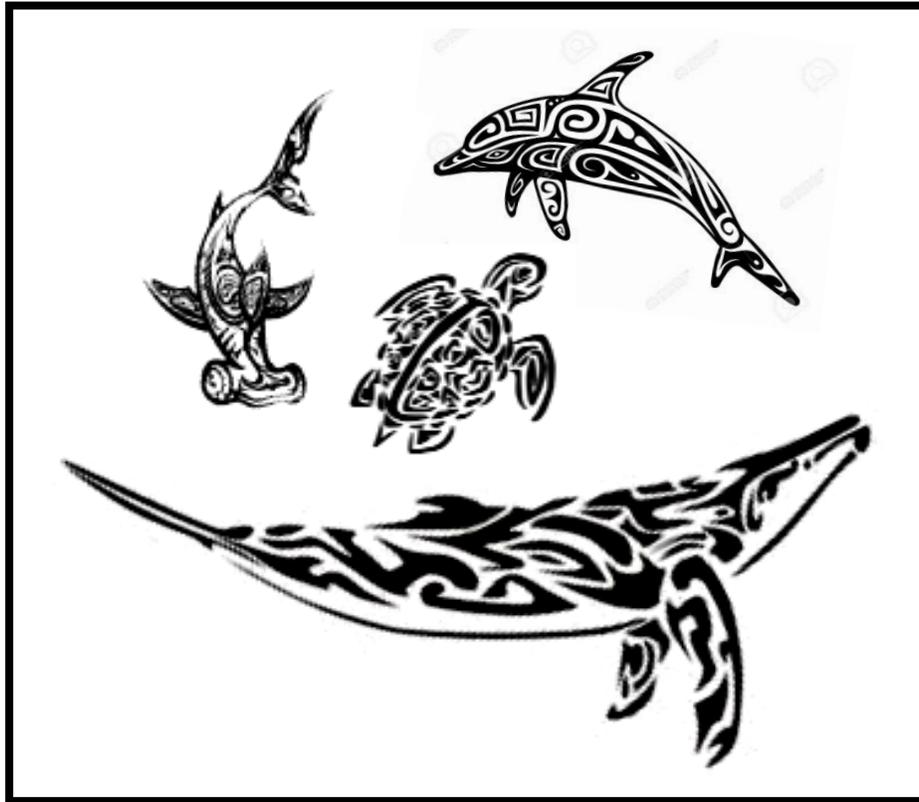




# Giants of the Sea

2020 - Driftwood Education Center



**Class Description:** Sharks, dolphins, and turtles, oh my! Marine megafauna are all the ocean animals that people tend to love the most - who doesn't? In this class, students will learn about the adaptations that allow sharks, marine mammals, and sea turtles to thrive in a marine ecosystem. Play games, touch biofacts, and understand why these animals are some of the most endangered species in the world. Students will also fill out a scientific data sheet that simulates what field scientists do to gather important data.

**Appropriate for all grade levels**  
**Can tailor most classes to High School Students**

**Driftwood Education Center**  
Po Box 20712 St. Simons Island, GA 31522  
Phone: 912.638.3849 Fax: 912.634.0642  
[www.driftwoodee.org](http://www.driftwoodee.org)

## Giants of the Sea

### Table of contents and outline:

#### I. Pre-class set-up – 10-15 mins

#### II. Introduction, overview, and assessment – 20 mins

1. Powerpoint Video and narration – 5 mins
2. Venn Diagram – 15 mins

#### III. Sharks - 20 mins

1. Intro and Biofacts – 5 mins
2. Shark Puzzle Activity – 15 mins

#### IV. Marine mammals and reptiles – 30 mins

1. Intro and Biofacts for both – 10 mins
2. Turtle and whale threats game – 20 mins

#### V. Data Collection – 20 mins

#### VI. Conclusions and Wrap-up

#### VII. Clean Up

#### VIII. Additional Information and help

### Georgia Performance Standards met:

**4<sup>th</sup> Grade:** S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.

**5<sup>th</sup> Grade:** S5L2. Obtain, evaluate, and communicate information showing that some characteristics of organisms are inherited and other characteristics are acquired.

**7<sup>th</sup> Grade:** S7L1. Obtain, evaluate, and communicate information to investigate the diversity of living organisms and how they can be compared scientifically.

**7<sup>th</sup> Grade:** S7L4. Obtain, evaluate, and communicate information to examine the interdependence of organisms with one another and their environments.

**7<sup>th</sup> Grade:** S7L5. Obtain, evaluate, and communicate information from multiple sources to explain the theory of evolution of living organisms through inherited characteristics.

### S. Carolina Performance Standards met:

**4<sup>th</sup> Grade:** 4.L5. 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> Grade:** 5.L4. The student will demonstrate an understanding of relationships among biotic and abiotic factors within terrestrial and aquatic ecosystems.

**6<sup>th</sup> Grade:** 6.L4. 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.

**7<sup>th</sup> Grade:** 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.

**8<sup>th</sup> Grade:** 8.E.6. The student will demonstrate an understanding of Earth's geologic history and its diversity of life over time.

**9<sup>th</sup>-12<sup>th</sup> Grade:** 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.

### Concepts:

Focal points of this class are:

1. Discussing similarities and differences between marine and terrestrial animals, especially focusing on adaptations.
2. Learn what niche marine megafauna fill within the marine ecosystem.
3. Understand why most marine megafauna populations are threatened by extinction.

### Outcomes:

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

1. Identify adaptations marine megafauna have that are similar or different to their vertebrate relatives.
2. Describe what niche, or role, in the marine ecosystem each megafauna group fills (sea turtles, sharks, and marine mammals). They should be able to give examples of this niche each group fulfills.
3. Give examples of natural and human threats that affect the populations of sea turtles, marine mammals, and sharks.

### Next Generation Standards met:

LS4.C For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.

4-LS1-1. Construct an argument that animals have external structures that function to support survival, growth, and behavior.

5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

### Florida Performance Standards met:

**SC.4.L.17.1:** Compare the seasonal changes in Florida plants and animals to those in other regions of the country.

**SC.4.L.17.4:** Recognize ways plants and animals, including humans, can impact the environment.

**SC.5.L.14.2:** Compare and contrast the function of organs and 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.7.L.17.3:** Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.

**SC.7.E.6.6:** Identify the impact that humans have had on Earth, such as deforestation, urbanization, desertification, erosion, air and water quality, changing the flow of water.

**SC.8.N.4.2:** Explain how political, social, and economic concerns can affect science, and vice versa.