

Sea Turtle Survivor



**NOAA Office of Education
Oil Spill Workshop
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Sea Turtle Survivor

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Sea Turtle Survivor

Grade level: K- 12(can be adapted for all ages)

Time Required: 50 min.

I. Course of Study Alabama Course of Study (ALCOS):

1st Grade, Life Science, Content Standard 4

Describe survival traits of living things, including color, shape, size, texture, and covering.

2nd Grade, Life Science, Content Standard 6

Identify characteristics of animals, including behavior, size, and body covering.

5th Grade, Life Science, Content Standard 9

Describe the relationship of populations within a habitat to various communities and ecosystems

7th Grade, Life Science, Content Standard 1

Describe characteristics common to living things, including growth and development, reproduction, cellular organization, use of energy, exchange of gases, and response to the environment.

9th – 12th Grade, Biology Core, Content Standard 5

Identify cells, tissues, organs, organ systems, organisms, populations, communities, and ecosystems as levels of organization in the biosphere.

9th – 12th Grade, Biology Core, Content Standard 12

Describe protective adaptations of animals, including mimicry, camouflage, beak type, migration, and hibernation

9th – 12th Grade, Biology Core, Content Standard 16

Identify density-dependent and density-independent limiting factors that affect populations in an ecosystem.

9th – 12th Grade, Environmental Science Elective Core, Content Standard 1

Identify the influence of human population, technology, and cultural and industrial changes on the environment

9th – 12th Grade, Environmental Science Elective Core, Content Standard 4

Identify the impact of pollutants on the atmosphere.

9th – 12th Grade, Environmental Science Elective Core, Content Standard 12

Identify positive and negative effects of human activities on biodiversity.

9th – 12th Grade, Marine Science Elective Core, Content Standard 7

Identify patterns and interrelationships among producers, consumers, scavengers, and decomposers in a marine ecosystem.

9th – 12th Grade, Marine Science Elective Core, Content Standard 11

Describe positive and negative effects of human influence on marine environments.

9th – 12th Grade, Zoology Elective Core, Content Standard 6

Identify factors used to distinguish species, including behavioral differences and reproductive isolation.

9th – 12th Grade, Zoology Elective Core, Content Standard 7

Explain how species adapt to changing environments to enhance survival and reproductive success, including changes in structure, behavior, or physiology.

9th – 12th Grade, Zoology Elective Core, Content Standard 8

Differentiate among organisms that are threatened, endangered, and extinct.





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National Science Education Standards:

Life Science E.C.1 Characteristics of Organisms
Life Science E.C.2 Life Cycles of Organisms
Life Science M.C.2 Reproduction and Heredity
Life Science M.C.5 Diversity and adaptations of organisms
Life Science H.C.6 Behavior of organisms

Ocean Literacy Standards

Essential Principle 5 *The ocean supports a great diversity of life and ecosystems.*

II. Concepts There are seven species of Sea Turtles in the world and most are either endangered or threatened. Only one percent of all hatchlings survive to maturity. The dangers that sea turtles encounter on a daily basis are both naturally occurring encounters and man-made. The human induced obstacles need to be known and understood in order to help the sea turtles survive.

The loggerhead sea turtles are the most common sea turtle to nest along the coastline of Alabama. Loggerheads mature around 30 years of age. The average weight of this animal at maturity is 300 pounds but can reach 900 pounds. The loggerhead is named so because its large head resembles a log. The animal has large, strong jaws used for crushing its prey. Its diet, when fully grown, consists of arthropods and mollusks. However, when the animal is small it is an opportunistic feeder.

The life of a loggerhead is spent in the ocean except when crawling from its nest as a hatchling, or if the animal is female, when returning to her natal beach (beach where the turtle hatched) to lay her eggs. Males, however, do not come back onto the shore.

Nesting season for Alabama is from May 1- August 31 and hatchling season runs through October 31. An average clutch size is 90-110 eggs. Each female will lay 4-7 nests with an inter-nesting period of approximately 2 weeks. The turtles typically nest every other year.





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III. Behavioral Objectives:

TSWBAT:

- 1 Distinguish between natural and human caused obstacles throughout the life cycle of a sea turtle.
2. List human dangers to sea turtle survival.
3. Discuss alternatives to help eliminate or reduce human impacts on sea turtle survival.

IV. Materials

PowerPoint

SMART board

Computer

Game board

Game pieces

Turtle die

V. Teaching/Learning Procedures/Instructional Procedures

A discussion or lecture about sea turtles in general is a great way to start off this lesson. Detailed background knowledge is not needed. The table top game board or the life size game board should be ready before class. If playing the table top game board, students can be separated into groups with one turtle game piece representing a group of students. If playing the life sized game, only a small group of students can play at one time. The students will start at the nest and roll the turtle die. That student moves the indicated number of spaces and follows the directions listed on that spot. If no words are on that spot it is a safe space. The first student to the end of the game is the ***SURVIVOR***.

VI. References:

Dauphin Island Sea Lab, AL

Dr. Thane Wibbels, University of Alabama at Birmingham

Share The Beach, AL





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VII. Extension activity:

SEA TURTLE SURVIVOR OBSTACLE COURSE/TAG GAME

Purpose:

Sea turtle hatchlings have to make it across the beach (crawling on hands and knees) avoiding Ghost Crabs (who will crab walk – on hands and feet, body facing up) and Seagulls (who will ‘fly’ back and forth across the beach zone). While crossing the beach, hatchlings must crawl under a beach chair (actual chair or kid(s) posing as a chair) to get to the water.

Once in the water, Sea Turtle hatchlings may stand up. Their goal is to get across the “water” to the “beach” on the other side, without getting tagged by the Grouper, Mahi Mahi, or Tiger Sharks. Each fish type has a water area and must stay within the boundaries. Sargassum (who are stationary) are their SAFE ZONE for each water area. Turtles cannot stay at the Sargassum for more than 10 seconds. A sea turtle can get tagged 3 (three) times before being removed from the game. To make refereeing the game easier, leaders can choose to put sea turtle hatchlings in flag football belts with 3 flags.

Players: (numbers based on 25 players)

Sea turtle hatchlings (8)

Ghost Crabs (3)

Seagulls (2)

Beach chairs (have players act as chairs for turtles to crawl under, or have actual chairs) (3)

Groupers (2)

Mahi Mahi (2)

Tiger Sharks (2)

Sargassum (3)

Setting:

Large open space

Parameters:

See figure for set-up example. Use physical method such as cones, tape, jump ropes, etc. to show boundary lines.



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