

# The Race



**Focus:** Endangered marine turtles

**Grade Level:** 2-8

**Connection to other Subjects:** Reading; Language Arts

**Correlation to National Standards:**

*National Science Education Standards (NSES):*

Grades 2-4: Life Science: Characteristics of Organisms  
Science in Personal and Social Perspectives: Changes in  
Environments

Grades 5-8: Life Science: Populations and Ecosystems

*American Association for the Advancement of Science (AAAS):*

Grades 3-5: The Scientific Enterprise  
Interdependence of Life

Grades 6-8: Interdependence of Life

**Focus Question:** What are the threats to hatchlings? How do they affect the survival of the species?

**Learning objectives:** To be able to describe the threats hatchling turtles face and how this affects the marine turtle population.

**Materials:**

- The Kid's Times pages for the Loggerhead, Kemp's Ridley, Leatherback, Olive Ridley, Green and Hawksbill turtles
- Trade books for marine turtles (see suggested list)
- Large die made from cube-shaped cardboard boxes (4 for a class of 24-28)
- Game spaces printed onto 8.5x11" paper or larger and laminated (4 sets for a class of 24-28)
- Adult volunteers to help run the games
- School field or gym to lay out the game board
- Counters

**Teaching Time:** several classes of 45 minutes

**Key Words:**

Threatened      Endangered      Species  
Threat            Predator



### **Background:**

**About Marine Turtles:** Marine turtles, air-breathing reptiles with streamlined bodies and large flippers, are well adapted to life in the marine environment. They inhabit tropical and subtropical ocean waters throughout the world. Of the seven species of sea turtles, six are found in U.S. waters: loggerhead, leatherback, green hawksbill, Kemp's ridley, and olive ridley. Although sea turtles live most of their lives in the ocean, adult females must return to beaches on land to lay their eggs. They migrate long distances between foraging grounds and nesting beaches. Ensuring their return and keeping the beaches free of hazards are very important steps to the recovery of sea turtle species.

Female sea turtles can lay well over 100 eggs in one clutch (nest), but only a few survive for a variety of reasons. The embryos in some of the eggs in the clutch never develop and therefore, never hatch. Scientists do not know the cause of this. Those that hatch climb over each other to reach the surface, and in the process some turtles suffocate under their siblings. When the surviving hatchlings reach the surface of the beach, they are faced with a number of impediments to reach the ocean, including natural predators and human-caused factors.

**Major Threats to Sea Turtles:** Major threats include, but are not limited to: destruction and alteration of nesting and foraging habitats; incidental capture in commercial and recreational fisheries; entanglement in marine debris; and vessel strikes. The game board spaces list the common threats encountered by hatchlings on their way to the sea.

To reduce the incidental capture of sea turtles in commercial fisheries, NMFS has enacted regulations to restrict certain U.S. commercial fishing gears (gillnets, longlines, pound nets, and trawls) that have a known, significant bycatch of sea turtles. Management measures include time/area closures, required fishing gear modifications, and safe sea turtle handling practices. Examples of required fishing gear modifications include: the use of Turtle Excluder Devices (TEDs) in shrimp and summer flounder trawl fisheries; the use of specific hook and bait types in longline fisheries; mesh size requirements in gillnet fisheries; and pound net leader mesh size requirements. To effectively address all threats to marine turtles, NMFS and the USFWS have developed recovery plans to direct research and management effort for each sea turtle species.

**Marine Turtle Conservation and Management:** All six species of sea turtles occurring in the U.S. are protected under the Endangered Species Act of 1973. The National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) recovery of sea turtles in the marine environment and USFWS on nesting beaches.



### **Introduction:**

Have the kids think about what it is like to be a baby. They can then draw, list or chart what a baby needs to survive and what would happen if the baby was left alone to survive (the threats it would face). The class can share these. Then explain that many animals face similar threats and that this is particularly a problem for threatened and endangered species, specifically marine turtles. They will experience what it is like to be a hatchling marine turtle.

### **Lesson:**

1. Divide the class into groups of no more than five or six and pair with an adult facilitator with each group. The game board pieces should be laid out in a curving manner because the hatchlings in this game take a circuitous route from the clutch to the ocean. In the absence of threats or barriers, hatchlings actually take a direct route to the ocean. Students can cut out, color, and assign their hatchling to a species. They can carry this with them during the game. The children will have an opportunity to read and learn and learn about the various marine turtle species after the game. Each student should also carry 25 counters to represent the clutch for their species.
2. Have each student roll the die to determine the first person to play and proceed through the game following the directions on each space.
3. Once all the games have been completed, debrief the activity. Discuss how many hatchlings survived and why many did not. Chart the threats encountered during the game. Highlight the most common problems the turtles encountered and how humans can reduce those threats.
4. Explain to the students that they will be participating in expert groups, where they will teach their team members about their species, based on the species they chose for their turtle game piece. If your students are not familiar with expert groups, you may want to take some time to model the process. Have all the kids with the same species group together to read and discuss (you can use guided questions) *The Kid's Times* and other information about their species. They can answer the questions, make notes, or create drawings as age-appropriate to help them remember what they are going to tell their group.
5. Regroup children with one of each species represented. Have each student teach the other members of the group about their species, highlighting the threats to the turtles and what they can do to help. The children can formulate their own ideas about how they can help the turtles or use those suggested in *The Kid's Times*.

### **Adaptation:**

1. Older students can research the threat to marine turtle hatchlings on their own and create the games.
2. If space is limited, this game can be adapted into a board game.

**Closure:** Revisit the activity and the expert groups. Have students reiterate what threats hatchlings face and what can be done to help them reach the ocean.



### **Evaluation:**

- The students can each create a poster directed toward other students informing about their species of turtle and the threats hatchlings face.
- Each student can create a page for a class marine turtle conservation book giving information about and illustrations of their species. These can be copied for each child and/or placed in the school media center.

### **Resources:**

- The Kid's Times by NOAA Fisheries Office of Protected Resources
- The Office of Protected Resources website: [www.nmfs.noaa.gov/pr/](http://www.nmfs.noaa.gov/pr/)
- [www.seaturtle.org](http://www.seaturtle.org)
- [www.cccturtle.org](http://www.cccturtle.org)

### **Related Children's Literature and Video:**

Turtle in the Sea (Jim Arnosky)

One Tiny Turtle (Nicola Davies)

Sea Turtles (Martha E.H. Rustad)

Into the Sea (Brenda Z. Guiberson)

Sea Turtles: A Watcher's Guide (M. Timothy O'Keefe)

Interrupted Journey: Saving Sea Turtles (Kathryn Lasky)

Sea Turtle: An Ecological Guide (David Gulko and Karen Eckert)

Video: "Sea Turtles: Ancient Nomads" by Robert Nixon



NOAA's National Marine Fisheries Service  
Office of Protected Resources

[www.nmfs.noaa.gov/pr/](http://www.nmfs.noaa.gov/pr/)

Molly Harrison 2005



## Game Board Spaces

Dog dug up nest - lose 5 hatchlings  
Start digging out of nest  
Dark and cool outside—move ahead 1  
Keep going  
Raccoons got into nest—lose 10 hatchlings  
Bright lights up ahead  
Turtle picture  
Confused by bright lights—move back 2  
Going in circles—miss one turn  
Bright lights cause you to go wrong way—10 hatchlings hit by car  
Stuck in vegetation—lose 5 hatchlings  
Laws passed that keep lights off the beach—move ahead 2  
Turtle picture  
Back on track  
Pause to rest—miss a turn  
Smooth sailing  
Uh-oh! Crabs on beach  
Turtle picture  
Nearly caught by a crab—miss a turn  
Crabs attack—lose 7 hatchlings  
Watch out!  
Beach cleaning machine disturbs nest - lose 10 hatchlings  
Turtle picture  
Almost in the clear  
Got away from crabs—move ahead 3 spaces  
Out of danger—Whew!  
Turtle picture  
Uh-oh! People on the nesting beach with flashlights  
Picked up by beachcomber as souvenirs—lose 5 hatchlings  
Getting closer  
Rock pile in the way—miss a turn  
Caught in rocks—lose 2 hatchlings  
Turtle picture  
Rocks moved out of the way by scientist—move ahead 3  
More people on beach  
Hurry up!  
Turtle picture  
Making progress  
Moon is out  
You are on your way!  
Beach chairs in the way—move back 2 spaces



Coast is clear  
Ocean up ahead  
Turtle picture  
Uh-oh! Vehicles on the beach  
Almost hit by a car driving on the beach—move back 3 spaces  
Safe for now  
Caught in a tire rut—lose 5 hatchlings  
Back on course  
Turtle picture  
Getting there  
Uh-oh! Another crab wants to make a meal of you—lose 2 hatchlings  
Turtle picture  
Laws passed to keep vehicles off beach—move ahead 1 space  
You are really close now!  
Turtle picture  
Out to sea!

(57 spaces)



