



Sea Turtle Promises

Created by the NC Aquarium at Fort Fisher Education Section

Essential Question:

How are sea turtles threatened by humans and how can we help?

Lesson Overview:

Students will brainstorm ways to help sea turtles and write promises on the shells of paper turtle hatchlings, which they will put in a paper nest.

Learning Objectives:

By the end of this lesson students will be able to:

- Identify human threats to sea turtles
- List ways they can help sea turtles

North Carolina Standards:

Kindergarten:

Art:

- **K.CX.2** Understand the interdisciplinary connections and life applications of the visual arts.
 - **K.CX.2.2** Identify relationships between art and concepts from other disciplines, such as math, science, language arts, social studies, and other arts.
 - **K.CX.2.3** Understand that artists sometimes share materials and ideas(collaboration).

First Grade:

Art:

- **1.CX.2** Understand the interdisciplinary connections and life applications of the visual arts.
 - **1.CX.2.2** Identify connections between art and concepts from other disciplines, such as math, science, language arts, social studies, and other arts.
 - **1.CX.2.3** Differentiate between sharing ideas and copying.

Second Grade:

Art:

- **2.CX.2** Understand the interdisciplinary connections and life applications of the visual arts.
 - **2.CX.2.2** Understand relationships between art and concepts from other disciplines, such as math, science, language arts, social studies, and other arts



Third Grade:

Art:

- **3.CX.2** Understand the interdisciplinary connections and life applications of the visual arts.
 - **3.CX.2.2** Understand how to use information learned in other disciplines, such as math, science, language arts, social studies, and other arts in visual arts.

Fourth Grade:

Art:

- **4 CX.2** Understand the interdisciplinary connections and life applications of the visual arts.
 - **4.CX.2.2** Apply skills and concepts learned in other disciplines, such as math, science, language arts, social studies, and other arts, in the visual arts

Science:

- **4.L.1** Understand the effects of environmental changes, adaptations and behaviors that enable animals (including humans) to survive in changing habitats
 - **4.L.1.1** Give examples of changes in an organism’s environment that are beneficial to it and some that are harmful.
 - **4.L.1.3** Explain how humans can adapt their behavior to live in changing habitats (e.g., recycling wastes, establishing rain gardens, planting trees and shrubs to prevent flooding and erosion).

Time Frame:

Preparation: 10 minutes

Discussion: 15 minutes

Activity: 10 minutes

Supplemental Background Information for Teachers:

All seven species of sea turtle are protected worldwide - some are threatened, endangered or even critically endangered. Since we live, work and play in their environment, it is our responsibility to take care of them. Some threats to sea turtles are:

- Natural predators, such as birds, raccoons, ants, foxes and fish.
- Human impacts include:
 - **Consumption**- Some cultures ignore the status of sea turtles and kill them for their meat and their eggs.
 - **Sea Turtle Shell trade**- Some cultures kill sea turtles for their shells to make jewelry and accessories. It is illegal in the US to possess any of these products.
 - **Marine Debris - Garbage**, like plastic, often ends up in the ocean. It is estimated that there are over 100 million tons of plastic in the ocean today. Many sea turtles cannot tell the difference between their own food, like jellies, and plastic bags or popped balloons. So instead of eating something nutritious, they might swallow plastic. This causes turtles to starve or feel ill. Plastic bags aren’t the only problem. Sea turtles can get entangled in other trash such as fishing line, buoys and other plastics.



- **Marine Pollution** - “All drains lead to the ocean,” so any fertilizer, pesticide, or other chemical has the potential to get into the ocean and has the ability to harm our ocean vegetation or animals. When it rains, the water from the street and our farms have to go somewhere, and most likely it goes to the local streams that lead to the ocean. Carpool or ride your bike whenever you can. It’s healthier for the ocean and for us. Use more organic food and products to take care of yourself and your home.
- **Artificial Lighting** - An estimated 1/3 of all the lighting in the US is wasted (<http://www.conserveturtles.org/seaturtleinformation.php?page=lighting>). Lights from hotels, beach houses, and other coastal attractions affect both nesting turtles and hatchlings. Artificial lighting can discourage females from nesting. After many false crawls (the mom comes on the beach but doesn’t lay her eggs), she may drop her eggs in the ocean or lay them some place unsuitable. When the hatchlings emerge from the nest they are drawn to the brightest light, which usually is the moon. However, with artificial lights, they can become disoriented and end up on land with risks of being run over, eaten or starving.
- **Beach Erosion** - Many factors contribute to the loss of beach. As beaches become smaller, the area sea turtles have to nest becomes smaller. Then turtles are forced to lay their eggs below the high tide line, running the risk of being covered by water or being washed away by the waves. When coastal property owners along beaches are threatened with erosion, they often build sea walls along the coast which can block sea turtles from nesting at all.
- **Beach Renourishment** - One way to address beach erosion is by depositing sand on our beaches. This can affect sea turtles in many negative ways. The sand that was deposited could be different from the other sand the beach originally had. It could be too compacted and harder for the mother turtles to dig in or the hatchlings to get out of; it could have too much moisture, among other factors. This could result in a decrease of sea turtle nests and the number of sea turtles in the future.
- **Beach Activities** - Nesting females come on the beach to lay their eggs from May until August - prime tourism time. Nighttime human activities can cause females to stop nesting and return to the ocean, sometimes even dropping her eggs in the ocean. Beach furniture left behind can also pose a threat to nesting females, as they can get entrapped or tangled in them. Nesting females can also fall into big holes on the beach and get trapped, therefore not being able to or being too scared to lay her eggs. Always pack in what you pack out when going to the beach, fill in holes from sandcastles and moats as you leave the beach, and be aware about walking on the beach at night because there might be a female sea turtle nearby. If you ever do see a mother sea turtle on the beach, please do not approach her or you might frighten her and cause her to return to the ocean



- **Invasive Species Predation** - Many people that leave trash and food scraps on the beach unknowingly attract other wild animals, non-native animals and even domestic animals, like dogs, to the beach. These animals can dig up nests that were laid by the female and eat the eggs. With very few sea turtles making it to adulthood, this can have a devastating effect on sea turtle populations. Make sure that you don't feed wild animals or leave trash or food scraps on the beach so other animals won't be tempted to congregate on the beach. Also be a responsible pet owner by keeping track of your pets.
- **Climate Change** - When we burn fossil fuels like coal, oil and natural gas to power our homes and drive our cars, we release excess carbon dioxide in the air. This carbon dioxide creates a blanket affect around the earth, causing it to warm. Our warming oceans make it harder for animals to survive such as coral and fishes, which disrupt the food webs for many sea animals, especially sea turtles, which rely on many animals that live in coral reefs for food. The warming of the ocean also increases the sea level rise, which means fewer places for females to lay their eggs. The warming of the planet can also affect the genetic diversity of the sea turtles which have their gender determined on the temperature they incubate at. The warmer the sea turtle eggs incubate, the more females there are. The cooler the nest incubates, the more males will emerge. This can pose a problem for future generations of sea turtles, when there are not enough males around for the female to mate with. Some ways you can help with this is by recycling, turning off lights when you are not in the room, carpooling, riding the bus more, organizing community efforts such as the whole school riding the bus to school for a week, or by writing to your friends, family, and politicians about how it's so important that we stop this threat before it gets even worse.

Materials:

- Sea turtle body and shell copies
- Brown butcher paper
- Scissors
- Tape
- Pencils
- Crayons, colored pencils or markers

Preparation:

Print sea turtle body and shell copies for each student to cut out. Also include scissors, pencils and coloring materials. Staple the brown butcher paper to the bulletin board. This will be your sea turtle nest. You can decorate this however you'd like. Another option is to draw an upside down light bulb shape to represent a turtle's nest.



Activity:

1. Explain that sea turtles are a protected species. Ask the students to brainstorm why sea turtles are important and why they need to be protected, as well as threats against them.
2. Hand out the sea turtle body and shell to each student.
3. Have them color the turtle shell.
4. As a class, brainstorm ways to protect sea turtles. Have the students write one thing they can do to help sea turtles on the body of their turtle.
5. Have each student tape the top of the shell to the body so they are able to flip up the shell and see each promise.
6. Have each student share their promise to help sea turtles with the class and then tape their turtle on the sea turtle nest boil picture. The students should start by sticking them all together in the middle and then moving out as more of the class adds their turtle. This will look like a sea turtle nest boil. If you chose to make the light bulb shape, the students should place their turtle somewhere in the nest.



Summary:

Sea turtles are protected because they are disappearing around the world from natural predators and human impacts. They have many threats facing them that decrease their chances of survival in the wild. However, many of the threats facing sea turtles are things that we can help with. If we change some of our habits and help others change theirs, sea turtles would be in much better hands. Sea turtles need our help so that they will be around for years to come.

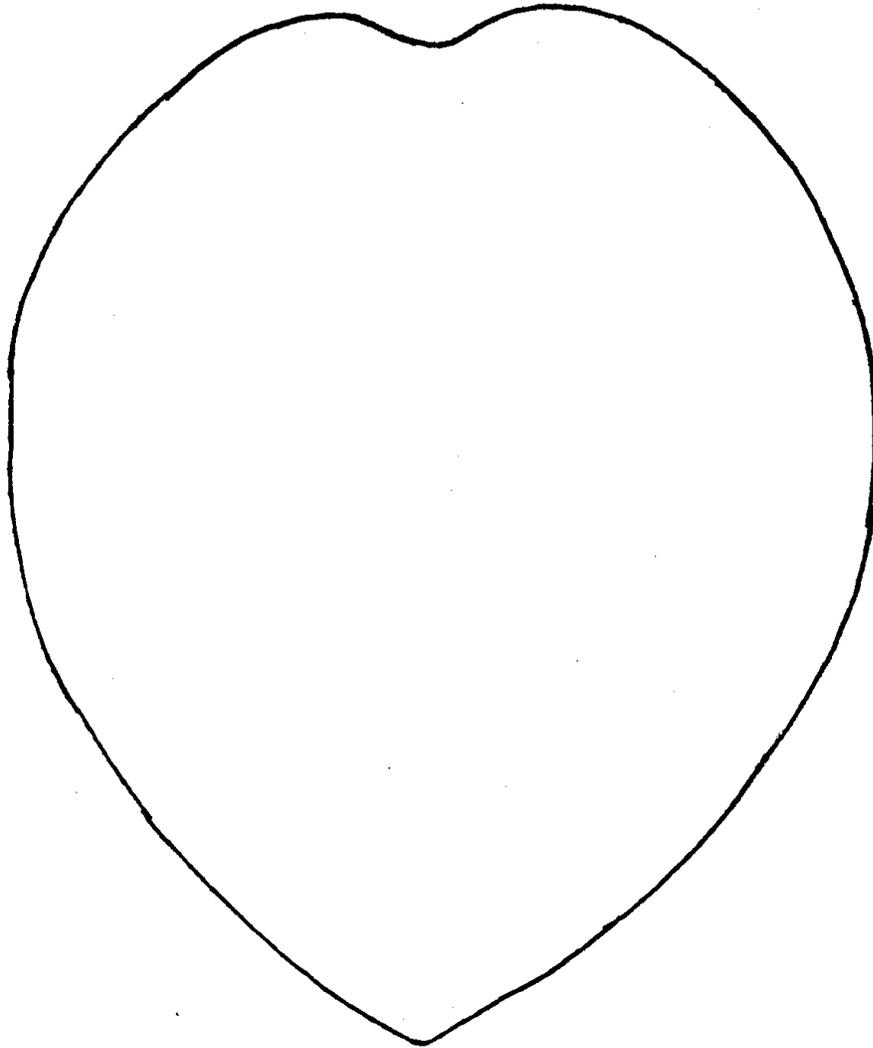


Extensions

1. Review the activity a couple days later to see how the students are doing with their promises.
2. Read a book, such as Sea Turtles Race to the Sea- A Cause and Effect Investigation by Kathy Allen, that addresses threats to sea turtles.
3. Visit <http://www.conserveturtles.org/seaturtleinformation.php?page=threats> to find more information and animations about each human threat.
4. Have pictures and objects as examples of the human and natural threats to sea turtles.



Turtle Shell





Turtle Body

