



Sea Turtle Savvy

Summary:

Through an art project, a dramatic reenactment, an active game, and a collaborative writing project, students will learn about Sea Turtles, their lives and their habitats. They will understand a baby sea turtle's perilous journey as it travels to the sea.

Background Information:

With their relatives, the sea snakes, sea turtles are the only true ocean-dwelling reptiles that still exist. In fact, they just might be the oldest creatures on earth! They are cold-blooded, have scales, a backbone, and they breathe through their lungs. Sea turtles are certainly adapted to their environment: they have streamlines shells, great hearing, powerful front flippers, and special glands that help them excrete salt. In addition, they can travel long distances with just one breath for over an hour! For this reason, they may travel over a thousand miles in a single year. (Some can swim up to 35 miles per hour).

Sea turtles live in the ocean and only come to land to lay their eggs. Female turtles migrate to their birthplace every two to three years as her nesting grounds. There she uses her front flippers to travel onto the sand at night. Using her back flippers, she digs a several-foot-deep hole and lays 100-150 inch-round eggs. It takes 45-70 days for them to hatch, during which time they must watch out for raccoons, wild pigs, jaguars, dogs, ghost crabs, foxes, and sea birds. The temperature of the sand determines the sex of the eggs as it incubates them. Once their time has come, the baby sea turtles dig themselves out of the sandy pit and follow the shining reflective light of the ocean.

Grade Level: 3/4 grade

Goal: Students learn about sea turtles, and how they are adapted to and reliant on their environment. Students learn how predation (especially human interference) affects their life cycle.

Key Concepts:

Habitat, Adaptation, Endangered Species, Predator, Prey, Life Cycle, Nesting

Objectives: Upon completion of this lesson, students will:

- 1) Be able to detail and explain specific events in the life cycle of a sea turtle.
- 2) Be able to classify and describe a sea turtle as an animal, and explain how it is well-suited for its environment.
- 3) Note the role predators play in a sea turtle's life, and reflect on our role as humans to preserve sea turtle populations.

Teaching Location: classroom & in an open area inside or outside

Lesson Time: three sessions of 50 minutes or an hour each: Intro and art on Day 1, drama and game on Day 2, and book creation and conclusion on Day 3.

Subject Areas for Infusion: Environ. Ed., Science, Language Arts, Reading, Art, Drama, P.E.

Their favorite foods are sea plants, crabs, clams, oysters, shrimp, jellyfish, and sponges. Aside from humans, their predators in the ocean are sharks and other large fish. Most turtles (the loggerhead, hawksbill, green turtle, Indo-Pacific Ridley, and leatherback) inhabit tropical and subtropical seas all over the world. The other two species are the flatback, which lives off the coast of Australia, and the Atlantic Ridley, which lives in the Gulf of Mexico.

Sea turtles can live up to 100 in the wild. However, they are endangered because they are hunted for their eggs, shells, hides, and oil. Scientists believe only out hatchling out of 1000 grows to be an adult.

Materials:

- Book *Into the Sea* by Brenda Guiberson
- Student copies of turtle appendages cut-outs
- Large white heavy duty construction paper
- One paper plate per student
- Bucket of water per group of four students
- Green and brown spray paint
- Scissors, glue, tape
- Markers or crayons
- Overhead projector and transparency of sea turtle fact strips

Standards:

Science:

- F.4.1
- F.4.3
- F.8.7
- F.8.8
- F.8.10
- H.4.2

Environ. Ed.

- A.4.4
- B.4.6
- B.8.3.
- B.8.5
- B.8.8
- C.4.1
- C.4.3

Set-Up:

1. Gather art supplies at each group's table. Spread newspaper to avoid major messes.
2. Clear a bulletin board or part of a wall for the display of the sea turtle habitat
3. Empty an area of the classroom or gain access to a multi-purpose room for the dramatization activity.
4. For the Sea Turtle Mad Dash, find a large open area outdoors. With cones or chalk, designate one section of this area as the beach and another as ocean.

Procedure:

Introduction

Tell the students that today they are going to learn about a creature that is very connected to its habitat—it has an incredible sense of home. It is the oldest creature on earth, and it spends its life in the

Vocabulary

Reptile: cold-blooded, air-breathing vertebrates that usually lay eggs and have skin covered with scales

Clutch: the complete set of eggs produced or incubated at one time

Hatchlings: a newly hatched bird, amphibian, fish, or reptile

Adapted: changed in order to improve or make more fit for a particular purpose

Predation: the capturing of prey (food) as means of maintaining life

oceans, traveling great distances. It's a special reptile called a Sea Turtle. Ask the students what they already know about turtles. Mention a few other facts that are particular to the sea turtle that the students may find interesting.

Introduce the book *Into the Sea* by Brenda Z. Guiberson. It is a children's book describing the life of a female sea turtle. After reading and discussing the story, ask the students to come up and write something they learned about sea turtles on the board.

Activity 1: Sea Turtle Features: An Artistic Interpretation

1. Set out all art materials required for this project. It may help for students to be arranged in groups of four to share supplies.
2. Provide each student with a paper plate to serve as the turtle's body.
3. Students will dip their plate bottom into a bucket of water that has been sprayed with green and brown spray paint. This will give a marbled, textured effect, imitating the sea turtle's hard shell.
4. Set plates aside to dry. Give students a copy of sea turtle appendages (flippers, head, tail) to color and cut out. These will be glued to the painted body when dry, as modeled by the teacher. The students should try to imitate the authentic color and pattern of the turtles as much as possible.
5. When finished, gather the class and talk about the features of the sea turtle that make it so adapted to its environment. Point to each body part (or region, for internal attribute) as you explain how those qualities allow the sea turtle to survive successfully in the ocean environment.
6. Brainstorm what other organisms live in the sea turtle's habitat. How might the sea turtle interact with those plants and animals? You may decide to make a class bulletin board where students design and cut out other features of the sea turtle's habitat and affix them to the board. Interspersed could be placed the students' marbled sea turtle creations.

Activity 2: A Baby Sea Turtle's Perilous Journey, Illustrated

1. Read aloud the following non-fiction account of a mother sea turtle laying her eggs and the babies hatching and struggling to make it to the ocean.
2. Have the student begin by standing up. After reading about a certain action in the story, pause so that you and the students can act it out. Model this for the students, and encourage them to imagine they have entered the mind and body of a sea turtle. The kinesthetic accompaniment will help foment and authenticate this new, fact-based knowledge.

3. The following “script” is adapted from an activity entitled *Turtle Talk*, by Stacie Davis and Linda Dyer:

On summer nights when the tide is in, female turtles swim ashore to find a suitable location for their nests. Once the perfect spot is found, the mother turtle uses her flippers to dig a shallow pit in the sand. Then she uses her hind flippers to carve a round hole in the sand. Moving her body from side to side, and cupping her flippers one at a time, she neatly removes the sand. When the hole is as deep as she can reach (about 2 ft. deep and 10 in. wide), she begins to lay her eggs. Once this begins, large “tears” stream down her face—this keeps loose sand out of her eyes. In 20 minutes, she will lay 100-150 golf ball-sized eggs.

Afterward, the female covers the hole with sand, hides the nest, and returns to the ocean...very tired! In about 60 days the baby turtles hatch. They dig and wiggle up through the sand, but wait until night falls to dash into the ocean (sensing its light). They hope to escape predators like raccoons and other predators that would like to eat them. Even in the ocean, a large fish might eat it. Unfortunately, few baby sea turtles make it to adulthood.

4. Use this fact as a segue into the next action-packed activity. Remind students of the many dangers that exist before hatching (human and animal predators of sea turtle eggs) and after hatching (raccoons, wild dogs, birds, etc.) In fact, as they make their way to the ocean after being born, the sea turtles must move quickly and exactly to avoid being attacked.

Activity 3: Sea Turtle Mad Dash

1. Take the students outside to the large, set-up area.
2. Ask about $\frac{3}{4}$ of the group to role play baby sea turtles. The rest of the students will be the predators that will try to capture and eat the young turtles.
3. When the teacher blows a whistle, the turtles will scramble from the beach to the ocean. If they are tagged (eaten) by a predator while on the beach, they must sit aside for that round. Play a few rounds, stopping after most of the sea turtles have either been eaten or have made it “home” to the sea.
4. Conduct a debriefing session where students discuss their observations and strategies.

Activity 4: Creating a Sea Turtle Children’s Book

1. Each group of four students receives 8 sentence strips (out of order) with some words missing. Their first task is to use the information gained from this lesson to complete the story with accurate information.

A sea turtle lives in the warm _____ almost all its life. It can glide through the water very slowly or _____ very fast.

When the mother turtle is ready to _____, she leaves the sea. She finds a _____ where her eggs will be safe.

With her _____, she digs a nest called a _____. She lays more than _____ soft white eggs, which look like _____.

After _____, the mother is very tired and crawls back to the _____. She does / does not stay to take care of her eggs.

_____ days later the eggs begin to hatch. The baby turtles use a _____ on their beak to break the shells open.

When most of the eggs have hatched, the babies _____ out of the nest. They wait until _____ when _____ can't find them so easily. Together they hurry to the sea.

Life in the _____ is still dangerous for baby sea turtles. They are often hunted by _____, _____, _____, and people.

The young turtles live on rafts of weeds. They travel with the _____ of the sea until they are _____.

2. After the students spend 5-10 minutes of working to complete the phrases in groups, place a transparency of the phrases on an overhead projector to complete them as a class, ensuring all students understanding.
3. The group splits up the sentences amongst the members so each person has two. They will transcribe these phrases separately onto pieces of paper and include a drawing to illustrate what is going on at that stage in the sea turtle's life.
4. The group will compile their drawings and put them in sequential order so that it creates a fully illustrated, informative children's booklet on the life of a sea turtle.
5. Finish publication by binding the book with an artistic cover created by each group.

Conclusion:

1. Have each group share something interesting they learned about sea turtles today.
2. Ask questions to summarize how a sea turtle fits well into her environment, and uses her environment strategically (especially to reproduce).
3. Discuss the dangers of human predation on sea turtle eggs. How do humans play a role in helping or harming this endangered species?

Assessment:

- Informally gauge student understanding during the discussion of the book *Into the Sea*.
- Note each student's level of participation during the dramatization activity.
 - Observe and record note about group interactions and discussions during and after the Creating and Children's Book activity. Note how well each group recalled information to fill in the blanks.
 - Assess understanding of predation and survival skills during and after the Mad Dash game in the debriefing activity.
 - Assess groups on the quality, accuracy, and creativity of their writing and art work in the children's book.
 - An optional homework assessment could be that the students write a paragraph of the diary of a baby or adult sea turtle. The students would write from a turtle's perspective about its habitat, friend, enemies, emotions, etc.

Adaptations:

This activity could be adapted for older grade levels by increasing the sophistication of vocabulary terms. There could be an increased emphasis on adaptations and evolution. For gifted and talented students during the children's book activity, the teacher could supply a list of key words to include and ask students to write and design their own children's book. For younger students, sentence strips could be already filled-out with the correct information—their only task would be to draw a picture to match. This could be an individual activity, depending on the class size and compatibility.

References:

Davis, Stacie Stone and Linda Dyer. **"Turtle Talk." *Ocean odyssey: K-3 activities, plans, & patterns for exploring the ocean.* Copycat Press, Racine, WI: 1998.**

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