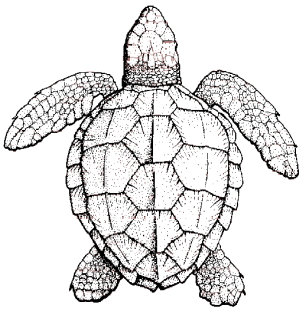

Image from USFWS

Comparing Two Turtles

5Es Lesson by Sandie Nichols

National Science Standards

Content Standard: Level 5-8

Unifying Concepts and Processes

> Evolution and equilibrium
> Form and function

Life Science

> Regulation and behavior
> Populations and ecosystems
> Diversity and adaptations of organisms

Background

Sea turtles, freshwater turtles, the Diamondback terrapin (a turtle that prefers brackish water) and tortoises are often generically called 'turtles.' Students may know the difference, but still misuse the terminology. In elementary school, students learn the difference between types of animals, such as reptiles versus amphibians, and the differences among groups of the same kinds of animals, such as turtles and tortoises.

Loggerhead Sea Turtle:

The Loggerhead Sea Turtle lives in tropical and subtropical oceans around the world. They migrate 1,000s of miles throughout the world's oceans, using their strong flippers to swim between foraging and mating areas. Loggerheads can live up to 100 years and maybe longer, and can reach 350 pounds in size. Turtles must surface for air but can hold their breath for long periods of time. They rest on the bottom while other creatures clean their carapace.

Female loggerheads reach sexual maturity at about 20-50 years of age. The females return to their natal beach (the beach they hatched from) to nest every few years. They usually lay 3-5 clutches over a two-week period and each nest contains about 100-120 eggs. After incubating (a 60-day period in South Carolina), turtles that hatch from the Southeastern United States most likely spend their lost

years in the Sargasso Sea. These small turtles face numerous predators in the sea and many eggs do not even hatch. The natural predators of adult loggerheads are sharks and humans. Sea turtles cannot pull their heads or legs into their shells for protection. Hatchlings eat small animals found among the sargassum and when they're older they eat jellyfish and invertebrates such as crabs, mussels, clams, and lobsters.

Eastern Box Turtle:

Tortoises are land dwellers that live in forests, fields, and wetland areas. An Eastern Box Turtle can have a range of 5-12 acres. The box turtle can live up to 40 years and grow to be the size of a small dinner plate. Tortoises do not tolerate heat well and bury themselves in the soil to keep cool, sometimes very deep. They do not actually hibernate, but they do slow down and bury themselves.

Box turtles reach sexual maturity at around 5 years of age. A female tortoise will lay several clutches every year and each nest contains three to eight eggs. The incubation period is 75-90 days, depending on temperature and rainfall. Tortoises can pull their head and legs inside their shell for protection and they have some camouflaging on their carapace and often hide in the grass. Adults have few natural predators except humans. Box turtles eat a multitude of invertebrates such as crickets, worms, beetles, and some vegetation, and also berries, snails, leaves and sometimes lizards and fish.

Activity

ENGAGE Begin the lesson by having each student begin a KWL chart on sea turtles. List the information that the students already know under the K portion of the chart. Add what the students want to know about turtles and tortoises on the W portion.

EXPLORE Give groups of students plastic models of a sea turtle and a tortoise. Allow them to compare and contract the observable features.

EXPLICATE Discuss the reasons for the observable differences. Discuss form versus function (i.e. the claws on the tortoise are for foraging on land and the flippers on the sea turtle are for swimming).

ELABORATE Revisit the KWL chart and fill in new knowledge or discoveries under the L portion. Revisit the W portion and see if any questions have been answered. Allow students to access field guides, encyclopedias, and Internet resources for more in depth information.

EVALUATE Students will create a Venn diagram to compare and contrast the sea turtle and tortoise. Information should include habitat and range, lifespan, body form and function, adult size, reproduction, predators, and prey.