Sea Turtles Are Reptiles

Created by the NC Aquarium at Fort Fisher Education Section

Essential Question:

How do we know that sea turtles are reptiles?

Lesson Overview:

Students will learn about the reptilian characteristics of sea turtles by creating a sea turtle, highlighting the characteristics of reptiles, such as a backbone and lungs.

Learning Objectives:

Students understand what makes a sea turtle a reptile. Students will be able to:

- Describe the characteristics of a reptile.
- Create a sea turtle.

North Carolina Standards:

Kindergarten:

Art:

- **K.V.2** Apply creative and critical thinking skills to artistic expression.
  - **K.V.2.3** Create original art that does not rely on copying or tracing.
- **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).

Science:

- **K.L.1** Compare characteristics of animals that make them alike and different from other animals and nonliving things
  - **K.L.1.1** Compare different types of the same animal (i.e. different types of dogs, different types of cats, etc.) to determine individual differences within a particular type of animal.

First Grade:

Art:

- **1.V.2** Apply creative and critical thinking skills to artistic expression.
  - **1.V.2.1** Recognize that artistic problems have multiple solutions.
  - **1.V.2.3** Create art from imaginary sources of inspiration.
- **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.

Science:

- **1.L.1** Understand characteristics of various environments and behaviors of humans that enable plants and animals to survive
    - **1.L.1.1** Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment
    - **1.L.1.2** Give examples of how the needs of different plants and animals can be met by their environments in North Carolina or different places throughout the world

Second Grade:

Art:

- **2.V.2** Apply creative and critical thinking skills to artistic expression.
    - **2.V.2.1** Understand that artistic problems have multiple solutions.
    - **2.V.2.3** Create art from real and imaginary sources of inspiration.
- **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.V.2** Apply creative and critical thinking skills to artistic expression.
    - **3.V.2.3** Create art from realistic sources of inspiration.
- **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.V.2** Apply creative and critical thinking skills to artistic expression.
    - **4.V.2.1** Identify different successful solutions to artistic problems.
    - **4.V.2.2** Use ideas and imagery from North Carolina as sources for creating 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.

Fifth Grade:

Art:

- **5.V.2** Apply creative and critical thinking skills to artistic expression.
    - **5.V.2.2** Use ideas and imagery from the global environment as sources for creating art.
    - **5.V.2.3** Create realistic, imaginative, abstract, and non-objective art.

Time Frame:

Preparation: 30 minutes
Activity: 30 minutes

Materials (per student):

- Paper bowl
- Snack sized paper plate
- Two balloons
- Five paper clips
- Three popsicle sticks
- One egg carton cup
- Green or brown sequins
- Glue
- Markers
- Scissors
- Tail and flipper templates
- Six paper fasteners
- Single hole punch (optional)

Supplemental Background Information for Teachers:

Reptiles are a group of animals known for having scaly skin, being cold blooded (ectothermic), and laying eggs. Most reptiles also have claws. All reptiles also breathe using lungs. Since their skin is covered in scales, all reptiles must periodically shed their skin as they grow. This also helps to remove parasites. Since reptiles are ectothermic, they spend much of their time lying in the sun to warm their body temperature. That is why many of our reptiles do not frequently move. Reptiles must bring their body temperature up to properly digest their food. Because of this, our reptiles get fed less frequently in the winter than the summer. Reptiles can be carnivores, omnivores, or herbivores depending on the group. Reptile eggs are soft and leathery to protect them from breakage. Some reptiles are ovoviviparous and hold the eggs within their body rather than laying them in a nest. Some reptiles, such as alligators, guard their nests, whereas others simply lay their eggs and move on. Some turtles even lay their eggs in alligator nests so that the alligator will guard their eggs.

Sea turtles are marine reptiles. Like all reptiles, they have lungs so they must come to the surface to breathe. In the spring and summer, they come to shore to lay their eggs, as they cannot be laid in the water like an amphibian's eggs. Sea turtles have scales that protect them from drying out. They shed their skin like other reptiles. They can even shed parts of their shell, called scutes. Since they are cold blooded, many sea turtles spend time at the surface basking in the sun. Turtles are different from other groups of reptiles, as they have a beak (instead of teeth) and a shell. Unlike other turtles, sea turtles cannot hide in their shell and they have flippers instead of feet.

Preparation:

Cut up egg cartons into individual cups. Leave a little extra cardboard on one corner of the cups so that the students can attach it to the paper plate. You will need one egg cup per student. Most cafeterias have industrial egg cartons with many cups. Print one set of tail and flipper templates per student.

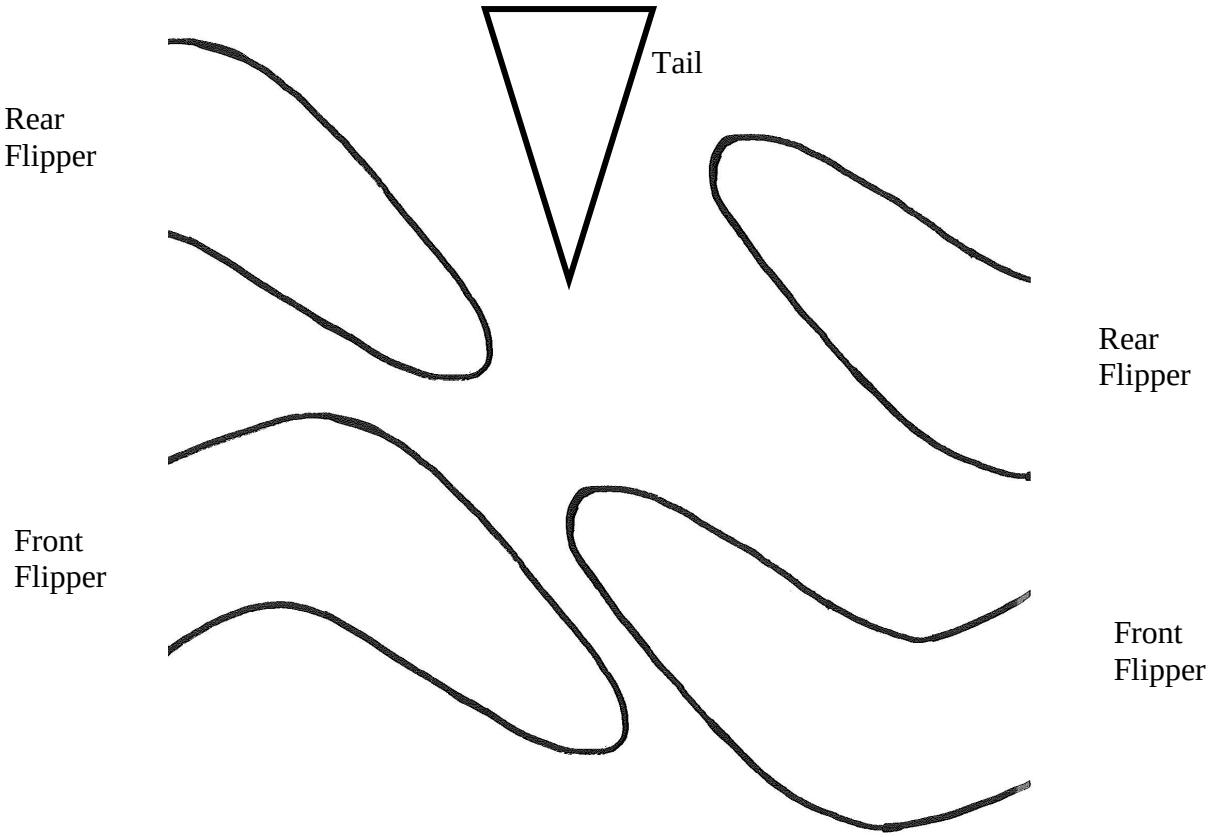
Procedure:

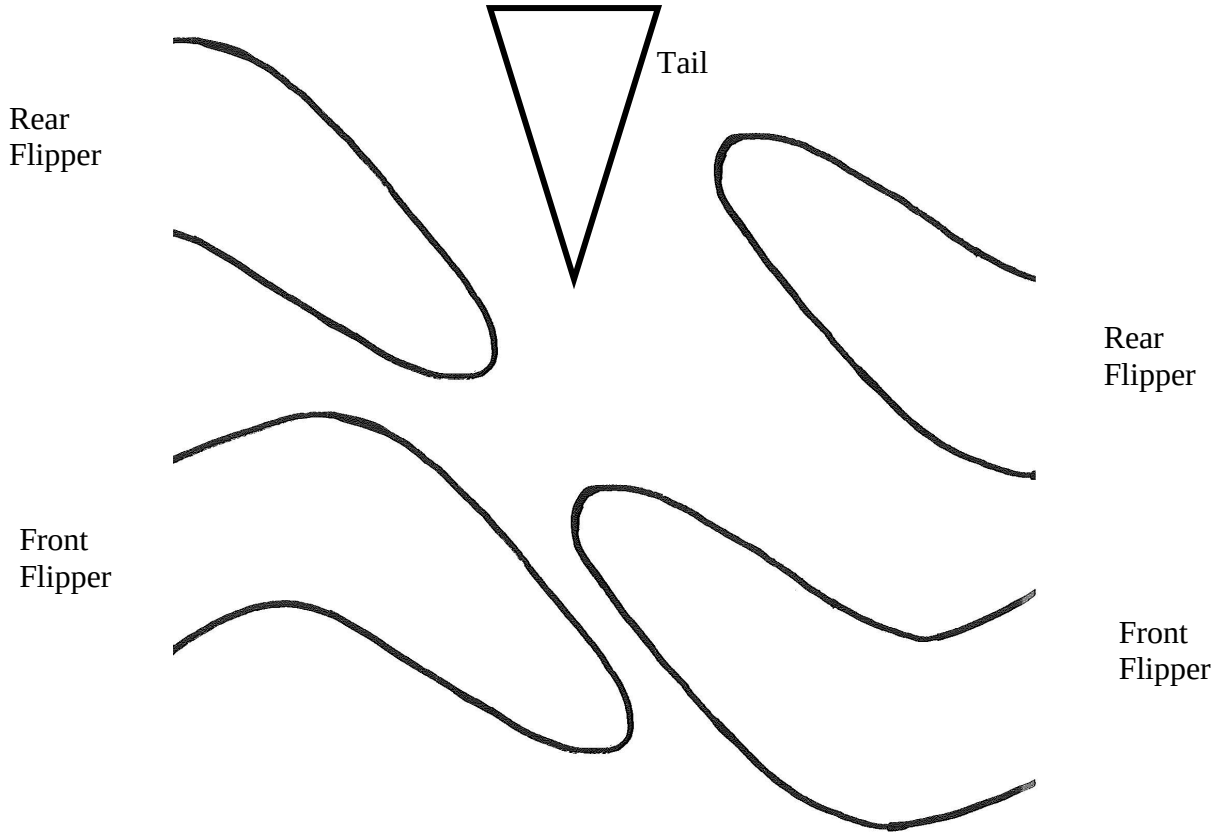
1. Ask the students to review what makes an animal a reptile. We suggest using the lesson "Reptilian Requirements" (http://seaturtleexploration.com/wp-content/uploads/2014/05/Reptilian-Requirements.pdf).
2. Explain to the students that they will be creating a sea turtle.
3. Pass out the paper bowls and markers. Have the students use markers to decorate the bowl to represent a turtle shell. You can either give examples of sea turtle patterns (attached) or let the students create their own.
4. Next, pass out the paper clips and popsicle sticks. The students should make a chain with the five paper clips.
5. Have the students turn over their bowl and glue the paper clips along the middle of the bowl from front to back, based on their design. This will represent the sea turtle's spine. Reptiles are vertebrates, which is a very important characteristic.
6. As the glue is drying, have the students break their popsicle sticks in half. They will glue the sticks on either side of the paper clips to represent the turtle's ribs. They should be perpendicular to the paper clips.
7. Have the students set aside the bowl to dry. Pass out the paper plates and balloons.
8. Instruct the students to turn the paper plates upside down. They should glue the two balloons onto the bottom of the paper plate. These represent the sea turtle's lungs. The students can put a little air in the balloon and tie them if they want.
9. Next, pass out the egg carton cup. The students will turn the egg carton cup upside down.
10. Turning the cup so that one corner is facing the student, they will draw a face on the cup. The corner of the cup will represent the turtle's beak.
11. Have the students draw sunglasses on their turtle to help them remember that turtles are cold blooded and spend a lot of time basking in the sun to stay warm.
12. Pass out the paper fasteners.
13. The students will use one paper fastener to attach the head to the paper plate and bowl. Put the edge of the egg cup in between the paper plate and bowl. Use the fastener to attach all three. It may be easier to use a hole punch to insert the paper fastener.
14. Next, pass out the flippers and tail.
15. If they are not already cut out, have the students cut out their flippers and tail.
16. They should attach the flippers and tail to the paper plate with the paper fasteners. If the students want to look at their ribs, backbone and lungs, they should only fasten the limbs to the plate, not the bowl (the "head"). If they want to remember that sea

turtles cannot hide in their shell, they may want to put the limbs between the bowl and plate and the fastener through both.
17. Once the limbs are attached, pass out the glue and sequins.
18. The students should glue the sequins on the flippers and tail to represent scales.
19. Allow the turtle to dry.

Extensions:

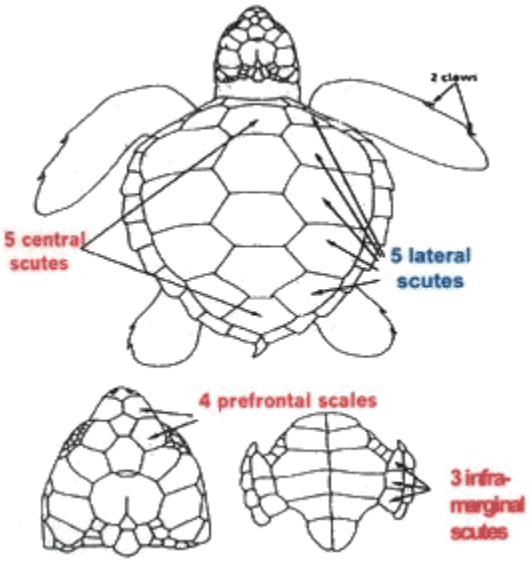
1. Create different limbs for land turtles and aquatic turtles. See Turtles Times Three (http://seaturtleexploration.com/explore-and-learn/sea-turtle-web-lessons/turtles-times-three/) for examples of how these turtles are different.


Tail
Rear Flipper
Rear Flipper
Front Flipper
Front Flipper


Tail
Rear Flipper
Rear Flipper
Front Flipper
Front Flipper

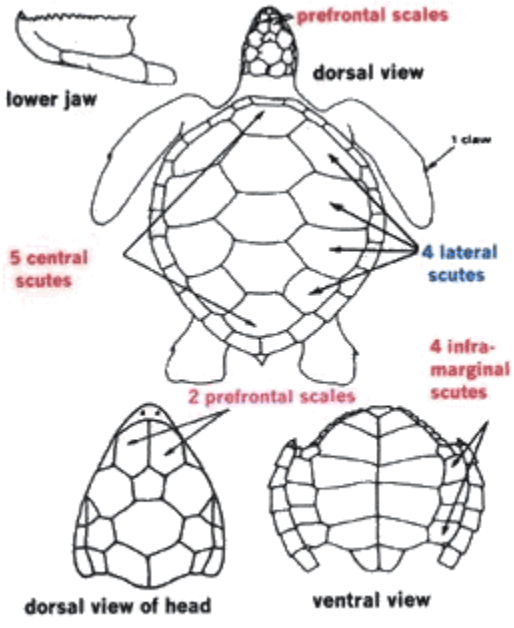
Sea Turtle Shell Patterns

Loggerhead Turtle Shell



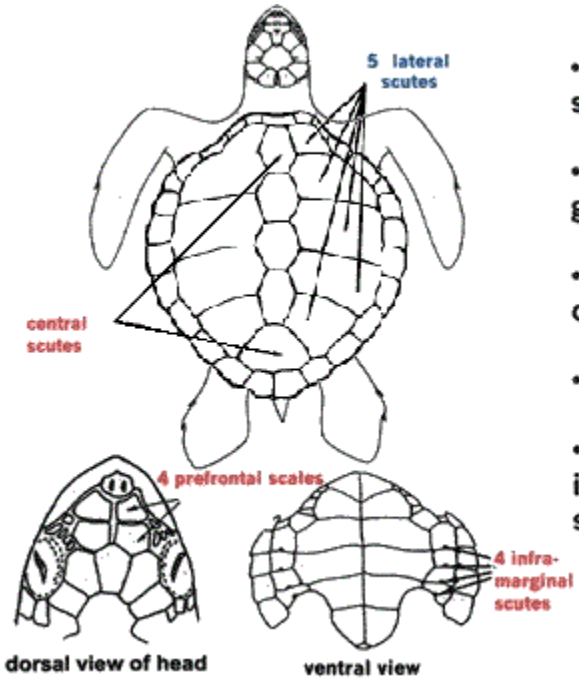
- Heart shaped shell
- Reddish/orange color
- 5 pairs of lateral scutes
- 5 central scutes
- 4 prefrontal scales
- 3 inframarginal scutes

Green Turtle Shell



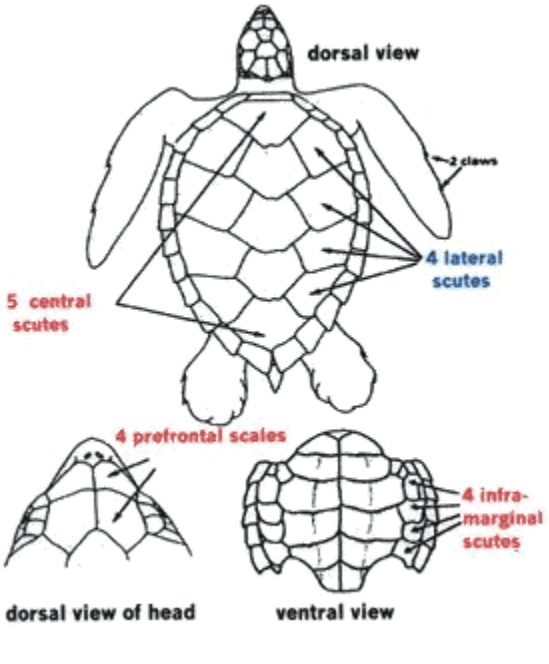
- Smooth oval shell
- Brown/yellow greenish color
- 4 pairs of lateral scutes
- 5 central scutes
- 2 prefrontal scales
- Serrated lower jaw

Kemps Ridley Turtle Shell



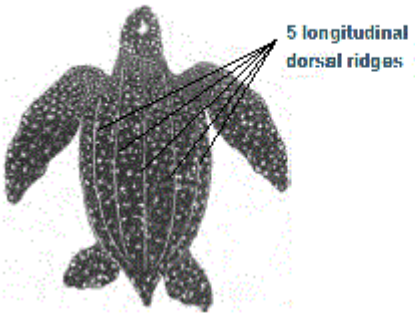
- Almost round-shaped shell
- Olive/grayish green color
- 5 pairs of lateral scutes
- 4 prefrontal scales
- 4 pairs inframarginal scutes

Hawksbill Turtle Shell



- Overlapping scutes
- Narrow shell
- Hawk-like beak
- 4 pairs of lateral scutes
- 5 central scutes
- 4 prefrontal scales

Leatherback Turtle Shell



- **Leathery, no scutes;**
- **Longitudinal dorsal ridges**
- **Dark gray / black with white spots**
- **Plastron white with dark blotches**

lateral view of head

ventral view

Turtle shell images from the NOAA National Marine Fisheries Galveston Laboratory: http://www.galvestonlab.sefsc.noaa.gov/seaturtles/