

Sharing Our Planet

by Margie O'Hern



Vocabulary

endangered
flippers
hatchling
loggerhead sea turtle
magnetic field
marine biologist
predators
threatened
turtle track

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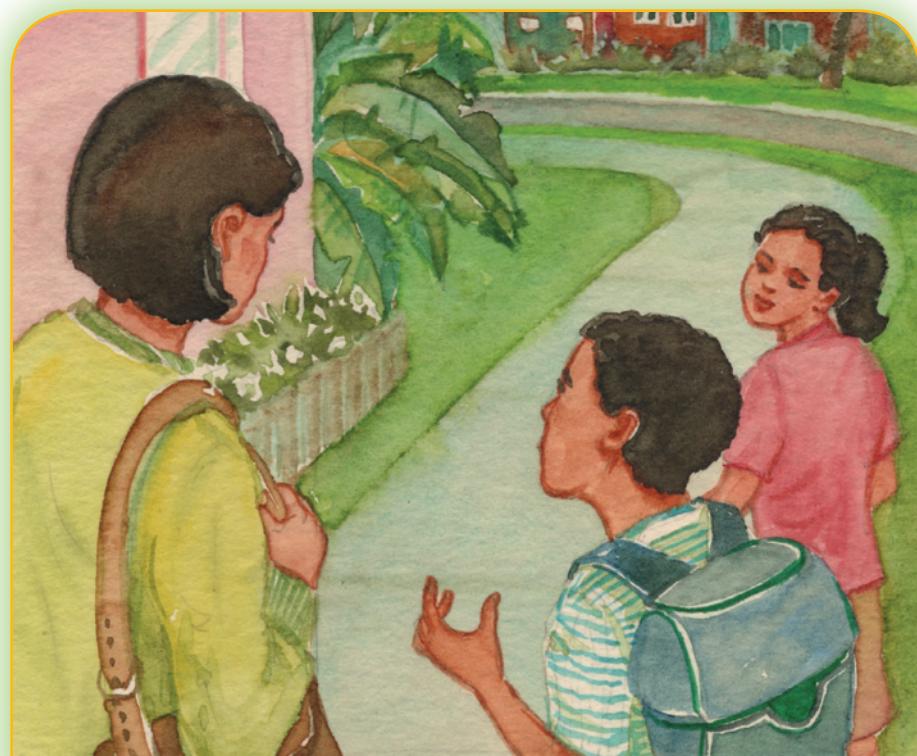
Chapter 1

The Best Time of the Year

"Everything we need is in the backpack, Mom. Are you ready to go?" Daniel asked.

"As soon as your sister gets her flip-flops on," replied Mom.

It was May, Daniel's favorite time of year. Daniel, his sister Sofia, and their mom were on their way to the beach to look for turtle tracks. Mom was a marine biologist who worked at the sea turtle hospital in Juno Beach, Florida. She understood the importance of sharing our planet with wildlife. Mom also volunteered to help protect the sea turtle nests. For Daniel and Sofia, May was the best time of year because they got to help their mother find the nests.



The sun was just peeking above the horizon as they walked along the path to the beach. The nesting season for the loggerhead sea turtles begins in May every year. The female sea turtles usually lay their eggs on the beach at night. Nighttime is often quiet, and there are not a lot of people on the beach. If the turtles hear loud noises, it is possible that they will not lay their eggs.

The early morning is the best time to look for the nests without disturbing the turtles. By that time, the turtles are usually in the water resting.

"There's a turtle track!" cried Sofia as she raced onto the beach. Sure enough, there was a track in the sand that went from the ocean far up onto the beach.

Daniel ran to the end of the turtle track and said, "Here's the nest, Mom. I can tell because the sand is packed down."

Loggerhead turtle track



"Look at the marks in the track! You can see where the turtle's front flippers pulled at the sand to move her forward," observed Mom as she pointed to the various markings.

"Awesome!" gushed Daniel.

"The nest is beyond the high tide line, so the water won't reach the eggs," said Mom. "This turtle found the perfect place for her nest."

Daniel pulled three wooden stakes, a roll of yellow tape, a bright yellow sign, and a hammer out of the backpack. Mom chose three spots around the outer edges of the turtle nest. Daniel held each stake as Mom hammered it into the sand. Sofia held the roll of yellow tape. Mom wrapped the tape around each stake to mark the nest.

Daniel handed his mother the sign. The sign said "Sea Turtle Nest" and noted that

disturbing the nest is against the law. Mom tacked the sign to one stake to finish marking the first nest.

"Now people will know there's a turtle nest in this spot," said Mom. "Hopefully, they'll stay away from it."

The sun rose higher in the sky. Daniel and Sofia could see more turtle tracks. "A lot of turtles came here to nest last night!" exclaimed Sofia.

"You're right, Sofia," confirmed her mother. "Did you know that a female loggerhead might lay as many as six nests of eggs between May and August? Each nest contains 80 to 150 eggs."

"That's a lot of eggs!" exclaimed Daniel.

"You're right, it is a lot," Mom agreed. "Did you also know that the adult female turtles usually lay their eggs on the same beach where they themselves hatched from eggs? These turtles often swim thousands of miles to find food. They might be gone for 15 years or longer. Somehow they find their way back to this beach to lay their own eggs," she continued to explain.

"There are thousands of beaches in the world," Daniel said thoughtfully. "How can a turtle find her way back to the beach where she hatched?"

"No one knows for sure," answered his mother, "but they might use Earth's magnetic field to guide them. Scientists know that sea turtles can detect and react to magnetic fields."



Chapter 2

The Nesting Season

Daniel was so excited to tell his friends at school all about the sea turtles. No one else he knew had ever seen one up close. During lunch, they grilled him with questions.

His friend Richard asked, "Sea turtles swim in the sea, right?"

"That's right," replied Daniel. "They have four flippers instead of feet."

"So, how do the turtle eggs get buried in the sand so far from the water?"

"They use their front flippers to pull themselves across the sand."

"But how do the turtles breathe when they're out of the water?" Richard retorted quickly.

"Sea turtles are reptiles. They breathe air through their lungs. They live in the ocean, and they can hold their breath for several hours, but they must come to the surface to breathe," answered Daniel patiently.

"Oh..." responded the whole group, impressed with their friend's knowledge of the sea creatures.

That night at dinner, Daniel asked his mother if he could watch the sea turtles build their nests.

"That's not allowed any more. Now you must go on a group tour accompanied by a ranger. There have been too many occasions when people frightened off the turtles that were ready to lay eggs."

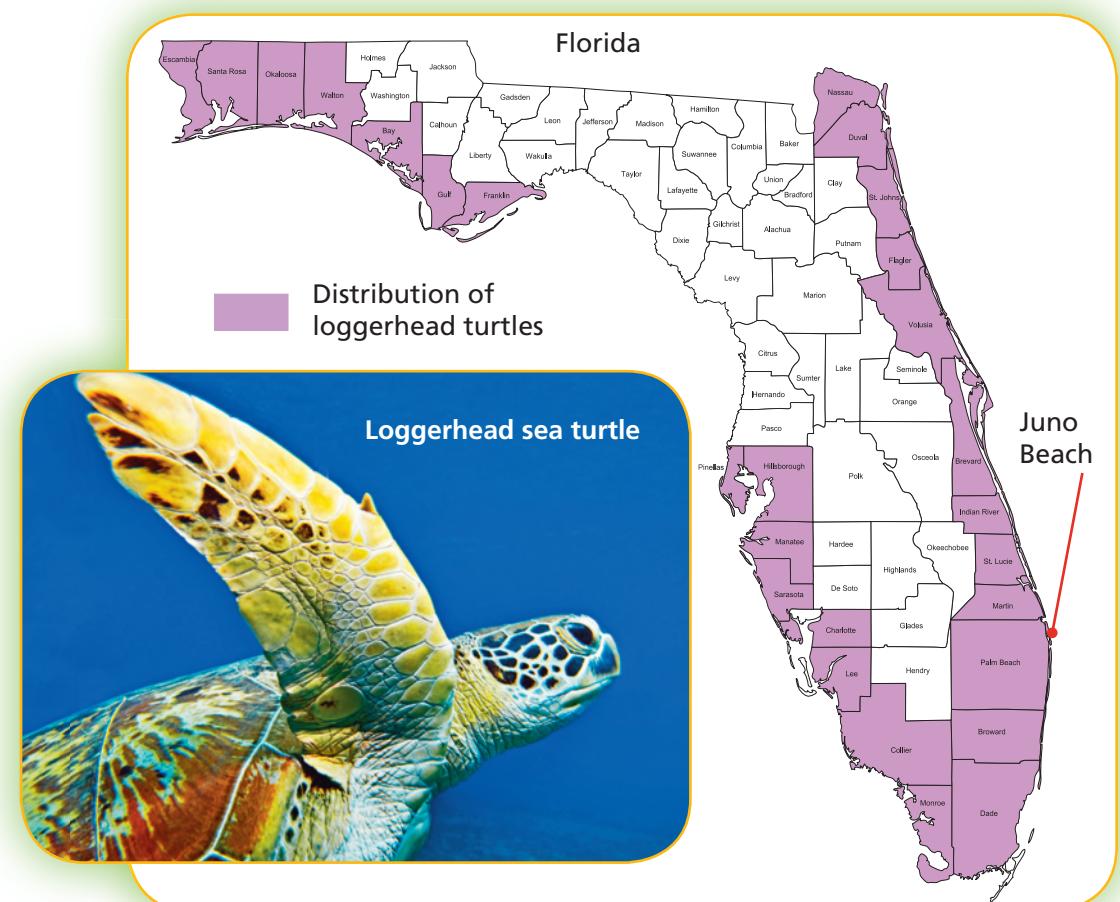
Daniel and Sofia were very disappointed.

"However . . . , " their mom continued.

"Yes?" both children said eagerly.

"I happen to know about a ranger group that's going out tonight. We can go, but the three of us need to be almost invisible. I'll write down the rules so you can remember them."

After talking about how to respect the nesting turtles, Mom showed her children a map of Florida. "The purple areas indicate the beaches in Florida where the loggerhead turtles nest. There are also other places in the world where these turtles nest."



Later that evening, Daniel, Sofia, and their mother followed behind the ranger's group at the beach, taking care to be very, very quiet. The sky was clear, and the moon was bright. The ranger chose a location where all viewers could watch the sea turtles without any concern of disruption.

Sofia was the first to spot a female loggerhead emerging from the ocean onto the beach. She yanked Daniel's sleeve excitedly and pointed toward the lapping waves, but she was very intentional in not making even a whisper of a sound.

The sea turtle began to inch slowly up the beach, heaving her body upward with her front flippers, and then propelling herself forward with her back flippers. She rested every few minutes, but she persevered until she had crawled her way to the dry sand beyond the high tide line.

Female loggerhead moving up the beach



The children were amazed at what they saw. They watched the turtle make a body pit by sweeping sand aside with her flippers and then rotating her body until she faced the opposite direction. From there she repeated the motions until she was facing her original direction. The body pit was important because it made it more difficult for other animals to see the mother turtle.

Daniel desperately wanted to get a closer look, but Mom warned him against disturbing the turtle. Instead, she gave him the pair of binoculars she had brought. They made it much easier to see things from a long distance.

When the body pit was complete, the turtle turned to face the ocean. She cupped her rear flippers and began to hurl sand out from under her in order to dig a nest. When the nest was nearly two feet deep, she began to lay her eggs. The turtle squeezed the eggs out of her body a few at a time, resting often between pushes.

Now Sofia used the binoculars, and as she watched, her mouth dropped open in wonder as she mumbled softly, "The eggs look like ping pong balls, Mom. But why don't they break when they land on each other?"

Her mother whispered in reply, "The eggs are soft and flexible, so they can't break when they drop into the nest. This way they can lay one on top of the other and be covered with a lot of sand without breaking."

Finally, the nest was filled with eggs. The turtle used her rear flippers to brush the sand back over the top of the eggs and gently pack it down.

Next, she used her front flippers to refill the body pit and make it level with the rest of the sand. The level sand would make it harder for other animals to find the eggs. Then the exhausted loggerhead mother crawled slowly back to the ocean to find food and regain her strength.

Daniel and Sofia watched her steady retreat to the water. Mom told them, "After a female turtle leaves her nest, she never returns to it. Not even once to check on it. The eggs develop on their own with the sand and the sun keeping them warm."

On the way home from the beach, Daniel and Sofia talked so enthusiastically that it was hard to believe they were up hours past their bedtime.

"That was so cool!" Daniel exclaimed. "I wish we could've taken pictures!"

"Yes, pictures would have been nice. Unfortunately, the flash from our camera would have also scared the turtles," Mom reminded them. "Scientists must use special camera equipment to get the pictures we see in books. Their cameras don't have a flash, and they have a special lens that allows them to see in the dark."

"I know, Mom. I was just saying—" but his sentence was cut short by a huge yawn.



Chapter 3

Danger: Predators!

At dinner a couple evenings later, it was obvious that Mom was very distracted. When the children pressed her, she finally admitted that there was a problem on the nesting beach.

"What's wrong?" asked Daniel.

"Something or someone has been digging up some of the loggerhead nests and either taking or destroying all the eggs. Tonight after dark, I will go to the beach to find out what's going on."

"Can we go, too, Mom? Please?" begged Sofia.

"Okay, but remember the rules: be very quiet, walk slowly, put a red filter on your flashlight, and stay a safe distance from the nesting turtles," Mom reminded them. "Sea turtles are listed as a threatened species in the United States. If they don't produce a lot of babies, sea turtles might not exist on Earth in the future."

When it was completely dark outside, Daniel and Sofia walked with their mother down the path to the beach. Moving carefully and quietly, they felt a mixture of excitement and fear. *Who or what has been digging up the turtle eggs?* they wondered.

At first, everything seemed normal. But just as they began to relax, Daniel heard a sharp noise—slurp, slurp, slurp. He tapped his mother's arm and pointed in the direction of the sound. Sofia couldn't figure out what it sounded like.

They picked their way slowly around the sand dune until they ran into a family of raccoons, feasting happily on sea turtle eggs in the moonlight! Mom removed the red filter from her flashlight. She took a few aggressive steps forward while shining her flashlight directly at the predators. Startled by the movement and the light, the raccoons stopped munching and scampered off.

"They'll be back," stated Mom. "Let's cover this nest back up with sand for now. Then we'll go home and get a metal cage to put on top of this nest to protect its eggs from the raccoons. I'll also call the other volunteers to help put cages on the other turtle nests across this beach."

"But if you put a cage on top of the nest, how will the baby turtles get out?" asked Sofia, who was upset by the whole incident.

A wire cage like this one can protect turtle eggs from predators while still allowing baby turtles to climb out of the nest and scurry to the sea.



"The holes in the cage are big enough for the tiny turtles to get out after they hatch, but small enough that predators can't get in," replied Mom.

Mom and the children went home to get a cage. They placed it over the nest and checked to make sure it was secure.

Sophia still seemed concerned.

"Are you sure nothing can get in there?" she repeated. Mom assured Sophia that scientists had been using these cages for a long time and that she was certain it would keep the raccoons out.

Chapter 4

The Hatchlings Emerge

Summer arrived in Juno Beach, and it was time for the baby turtles, or hatchlings, to emerge from the nests on the beach.

"How do you know when the baby turtles in a nest are ready to hatch?" asked Daniel.

"It takes about two months for the eggs to incubate, or develop into baby turtles," replied his mother. "The eggs that were laid in May will hatch first. When the babies are developed, they begin to break out of their eggshells and dig their way to the surface of the nest. We know they're moving around in the nest when we see a circular bulge in the sand."

"Let's go to the beach and try to find the nests with bulges," suggested Sofia.

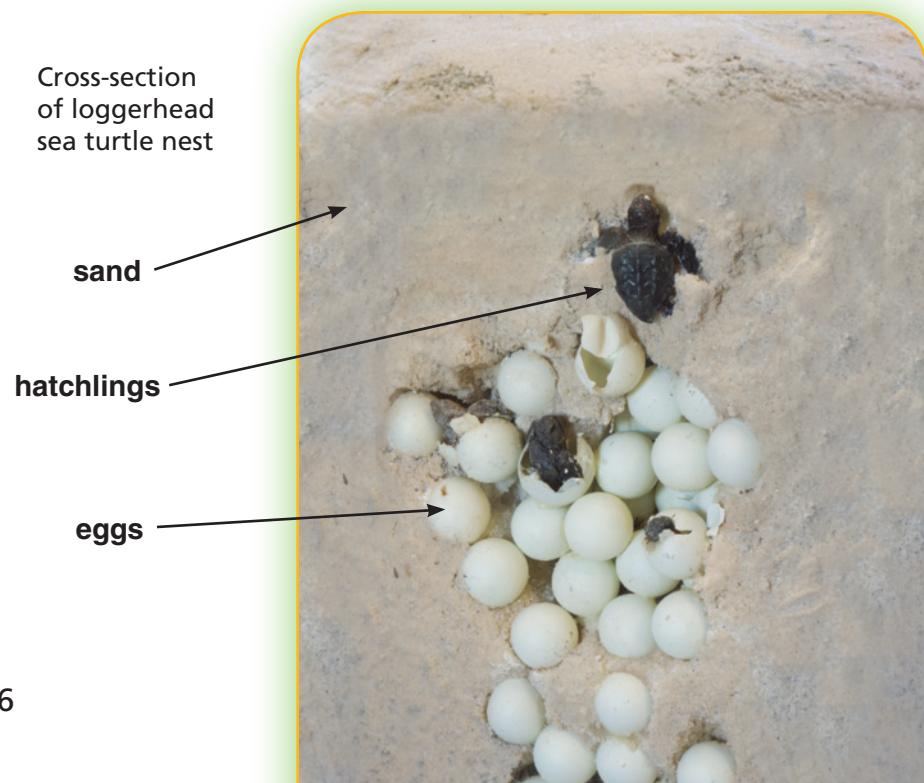
Knowing that the hatchlings usually emerged from their nests at night when the sand was cool, Sofia, Daniel, and Mom headed toward the beach as the sun was setting. They found a spot where they could see the hatchlings but not disrupt their movement.

"Sometimes the hatchlings come out of the nest slowly over a couple of nights," Mom told the children. "Other times they seem to burst out all at once. We call that bursting out a *boil* because it looks like a pot boiling over."

Just then, Daniel noticed movement nearby. A few tiny heads and flippers poked through the sand. Then, all of a sudden, there were hundreds of baby turtles emerging from the nest.

"We have a boil!" exclaimed Daniel.

Hatchlings emerging from their nest



The baby turtles turned toward the sea and made their way across the sand with abrupt jerking movements. "How do they know which way to crawl?" asked Sofia.

"Scientists think they move toward the brightest light they see when they reach the surface," answered her mother. "On a nesting beach at night, the moon and stars shining over the ocean give off the brightest light."

"What about the beaches that have houses and hotels right next to them? Don't the lights from those buildings confuse the baby turtles?" asked Daniel.



"Yes, Daniel," said Mom. "If there are bright lights on land, the hatchlings sometimes crawl in the wrong direction. That's a real problem for the baby turtles."

"There are other dangers too. Many hatchlings never get to the ocean and are eaten by birds, raccoons, or crabs. We know that they will die if they don't reach the ocean," continued Mom.

"That's so sad!" exclaimed Sofia. "I wouldn't want to be a baby turtle."

"You know, sometimes people interfere too. You should never pick up a turtle hatchling," warned her mother. "They need to find their way to the ocean to imprint on this beach. That means they learn to recognize the beach so they can find their way back to lay their own eggs."

"So we can't even help them?" Daniel asked. "What if we're trying to protect them from the animals that might eat them?"

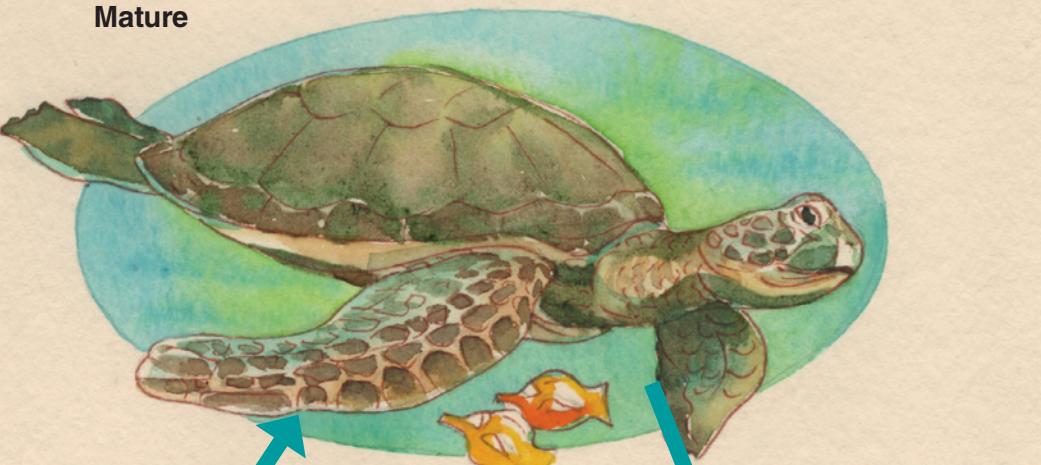
"Nope," Mom said. "Not even then. We must make sure they can find their way on their own."

"Will they ever be safe?" Daniel asked.

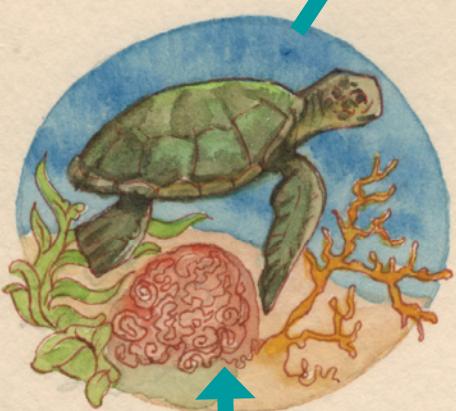
"Sure," Mom said. "Those hatchlings that do get to the water spend their first year swimming in floating beds of seaweed. There, they find food and protection from larger predators. Their only hope to survive is to be in the ocean."

Life cycle of a sea turtle

Mature



Grow

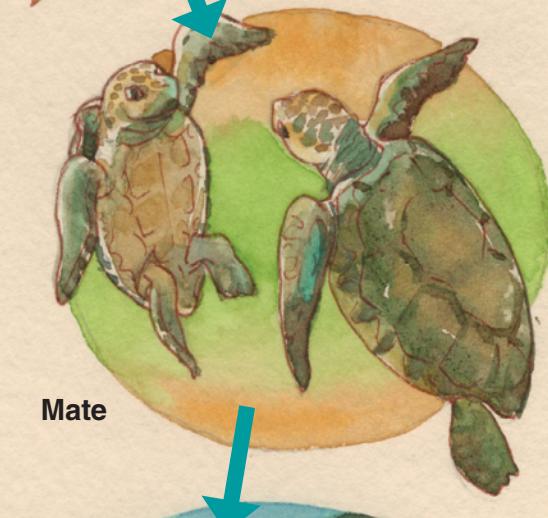


Hatch



Lay Eggs

Mate



Female Returning to
Hatching Beach

Chapter 5

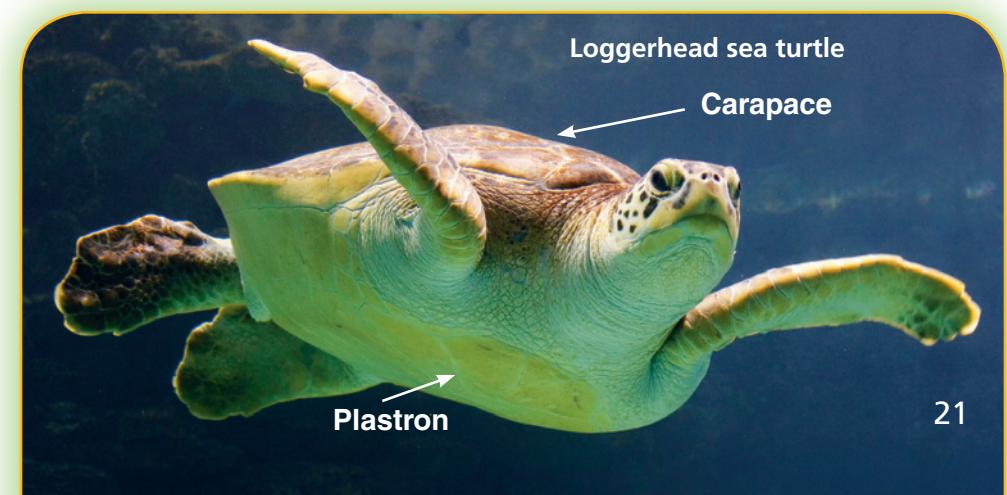
The Loggerhead Marinelife Center

Daniel and Sofia wanted to learn more about the sea turtles.

Mom took them to the Loggerhead Marinelife Center on Juno Beach. At the center, they learned that adult loggerheads are about 3 to 3½ feet long and weigh as much as 300 pounds. They are called loggerheads because of their massive heads.

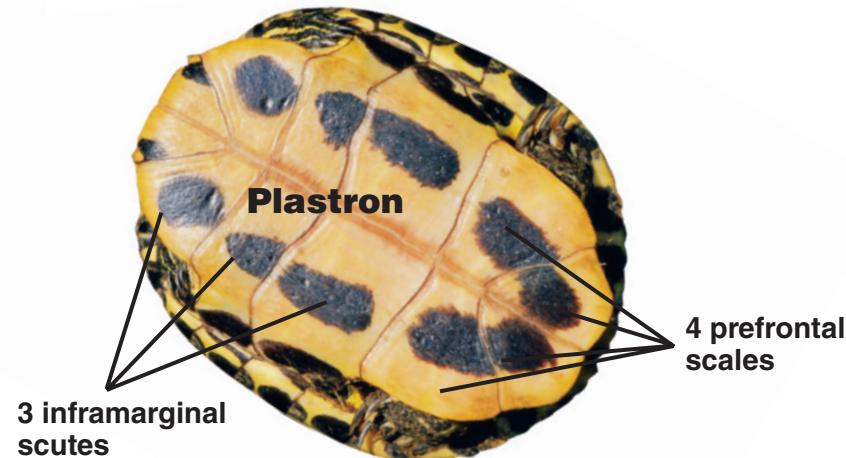
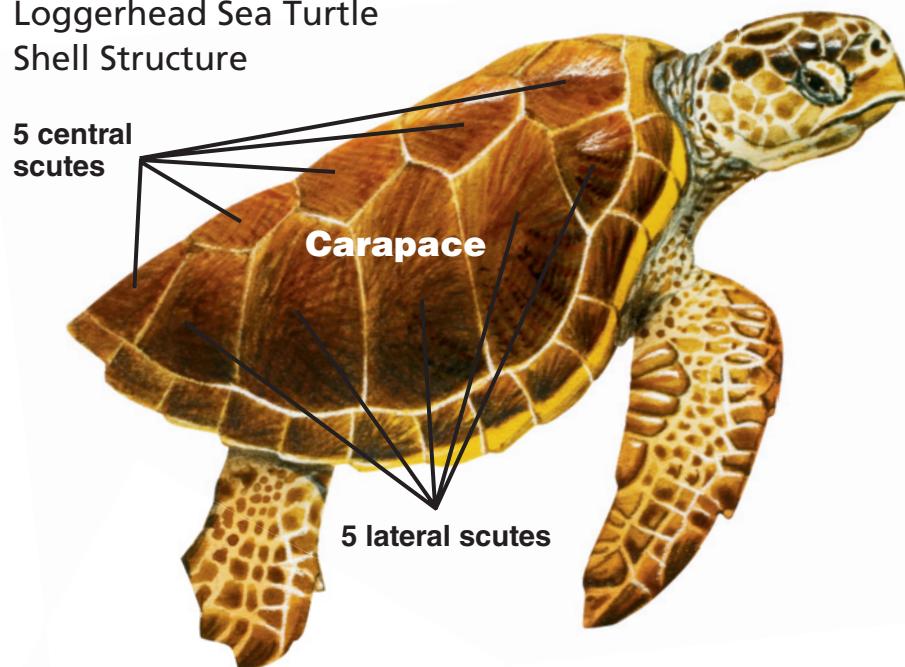
The children learned that the reddish-brown top shell is called a carapace, and the light bottom shell is called a plastron. The darkness of the carapace makes it hard for birds flying above the ocean to see the turtle. The lightness of the plastron hides the turtle from predators below them by blending them in with the light from the sky.

They also learned that unlike most turtles, a sea turtle cannot pull its head and flippers into its shell. This fascinated Daniel and Sofia, and they pulled their mother around the research center to read more.



They found a diagram that showed the parts of the loggerhead turtle's shell. Daniel and Sofia learned that a scute is a bony plate that is connected to other bony plates in order to form the shell. The loggerheads also have scales and two claws on each front flipper.

Loggerhead Sea Turtle
Shell Structure



The best part of their visit to the center was seeing the loggerhead turtles swimming in the aquarium.

"They swim much faster than they crawl across the beach," commented Daniel happily.

Smiling widely, Sofia said, "Just think! The turtles we saw last spring and summer are swimming somewhere in the ocean right now."

Her mother looked grave. "I hope so. Remember everything we talked about. Those turtles face many dangers that make it difficult for them to survive. We all must work very hard to make sure these turtles are protected, so that your children and grandchildren can see them too."

"We will!!!" the children promised loudly.



A loggerhead turtle at the Marineland Center in Juno Beach, FL

Endangered Sea Turtles

As of 2007, scientists have wanted loggerhead sea turtles to be listed as endangered. Because of their migration habits, the danger is worldwide, not just in the United States.

Shrimp fishing nets kill hundreds of thousands of sea turtles each year. The turtles swim into these nets and get trapped. They drown because they can't get to the surface to breathe. These fishing boats should have a Turtle Excluder Device (TED) on their nets to allow the turtles to escape. However, this law is not always obeyed.

Houses and hotels built on nesting beaches prevent sea turtles from laying eggs. Pollution of the ocean and beaches cause many sea turtles to die from eating trash.

If people want to continue to share the planet with sea turtles, they need to do everything they can to protect them from these dangers.

Turtle excluder device (TED) on a fishing net



Reader Response

1. Look at the illustrations on pages 21 and 22. Describe two adaptations the sea turtle has that help it survive.
2. Using a chart like the one below, list important ideas from the story and something you want to research about each of them. The first important idea is included for you to think about.

What I Learned	What I Want to Know
We can protect wild creatures by studying patterns in their life cycles.	

3. A *marine biologist* researches life in the ocean. List five other words, or compound words, that contain, or are derived from, the word *marine*.
4. Why do you think the author wrote this story? How did it make you feel differently about sharing the planet with other plant and animal life?

Suggested levels for Guided Reading, DRA™, Lexile®, and Reading Recovery™ are provided in the Pearson Scott Foresman Leveling Guide.

Genre	Comprehension Skills and Strategy
Realistic fiction	<ul style="list-style-type: none">Graphic SourcesLiterary Elements: ThemeImportant Ideas

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