

Zander Srodes'

"Turtle Talks" Activity Book




Linda Soderquist

About the Author

Zander is a student in Florida. He wrote the activity book when he was fourteen years old. He lives on Palm Island, a bridgeless barrier island. He has been giving "Turtle Talks," a conservation presentation, for eight years. He speaks at schools, libraries, and nature events. Zander received the Mote Marine Lab Sea Turtle Conservationist of the Year Award in 2002 and the Dream It Do It Award from Youth Venture in Washington D.C. The International Eco-Hero Award and the Brower Youth Award in 2005. He received the Presidential Environmental Youth Award and the Prudential Spirit of Community Award in 2007. In 2008 Zander was a finalist in the Volvo For Life Awards and was acknowledged with the Sea World Environmental Excellence Award. Zander is a Do Something Award winner! In 2009 he was honored with the Peter Benchley Youth Award, at the Blue Vision Summit. He can be contacted at turtletalks.zander@gmail.com.

About the Illustrator

Linda Soderquist is an elementary teacher in Venice, Florida. She is also a watercolor artist, who regularly shows her work in galleries and exhibits. She resides on Little Gasparilla Island, a bridgeless, barrier island off southwest Florida. Over the years, Linda has been active in many areas of environmental conservation, and is presently a volunteer water quality monitor with CHEVWQMN. She is the primary permit holder for all sea turtle activities on Little Gasparilla Island, and is responsible for turtle nest data collection, investigating disorientations, and gathering information on strandings. You can reach Linda at linist@hotmail.com.

 Turtle Truth... sea turtles remain some of the most mysterious and time-honored creatures on earth. Do all you can to help ensure the gentle sea turtle remains a part of the ocean environment.

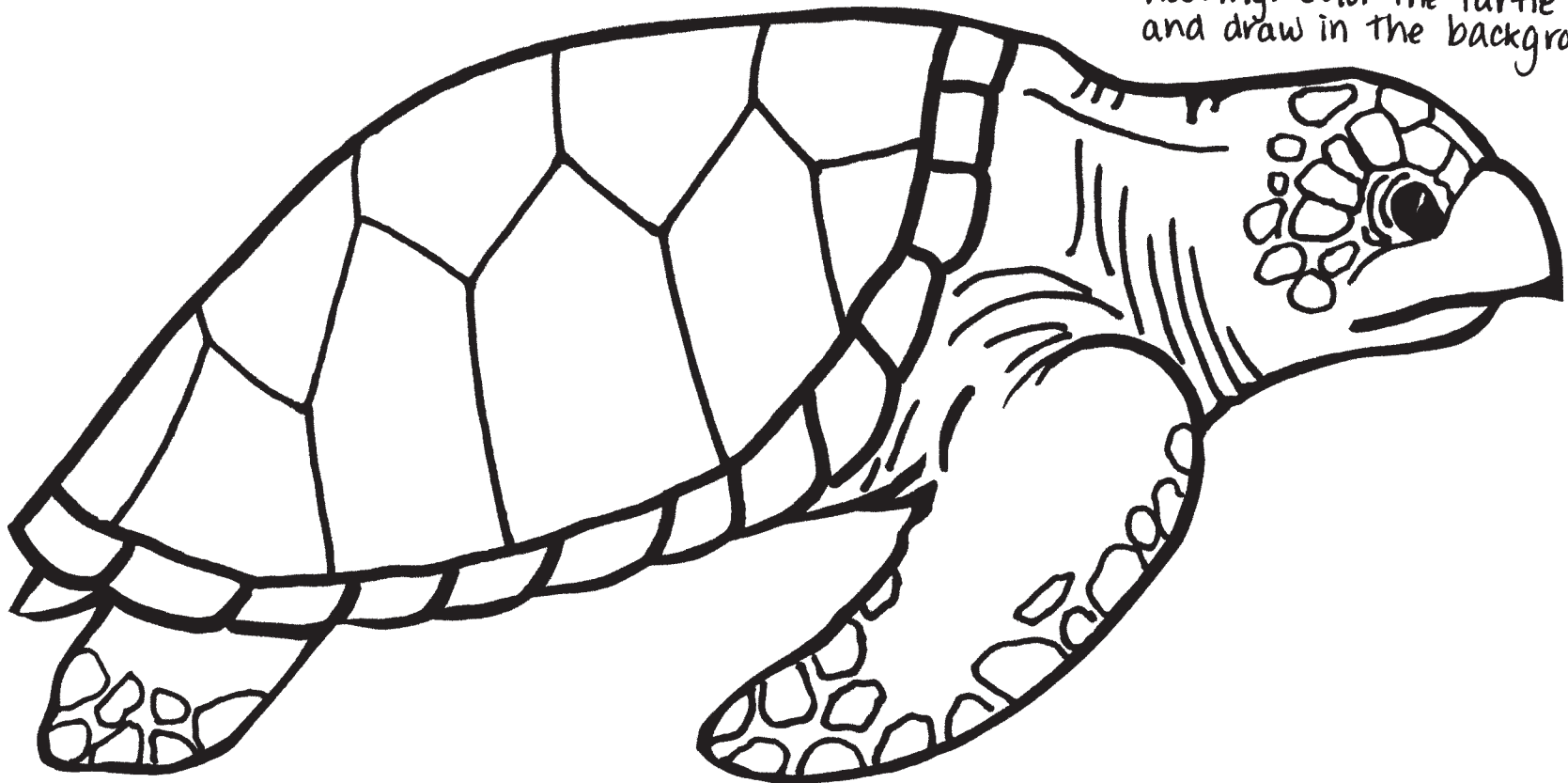
Turtle Truth... Sea turtles have been on earth for 150 million years... since before the time of the dinosaurs!



Loggerhead

The loggerhead gets its name from its enormous head that is very oversized compared to the rest of his body. The loggerhead uses this oversized head to crush the shells of clams, snails, and crabs. Loggerheads will also eat sea grasses. This turtle is very well adapted to any environment. The loggerhead is the third largest sea turtle at 300 pounds. This turtle is very wide spread, yet declining in numbers worldwide. They are the least endangered and seem to be everywhere from the oceans around Australia and off the coast of California to the Gulf of Mexico. They can be found in inland bays and as far as 500 miles off shore.

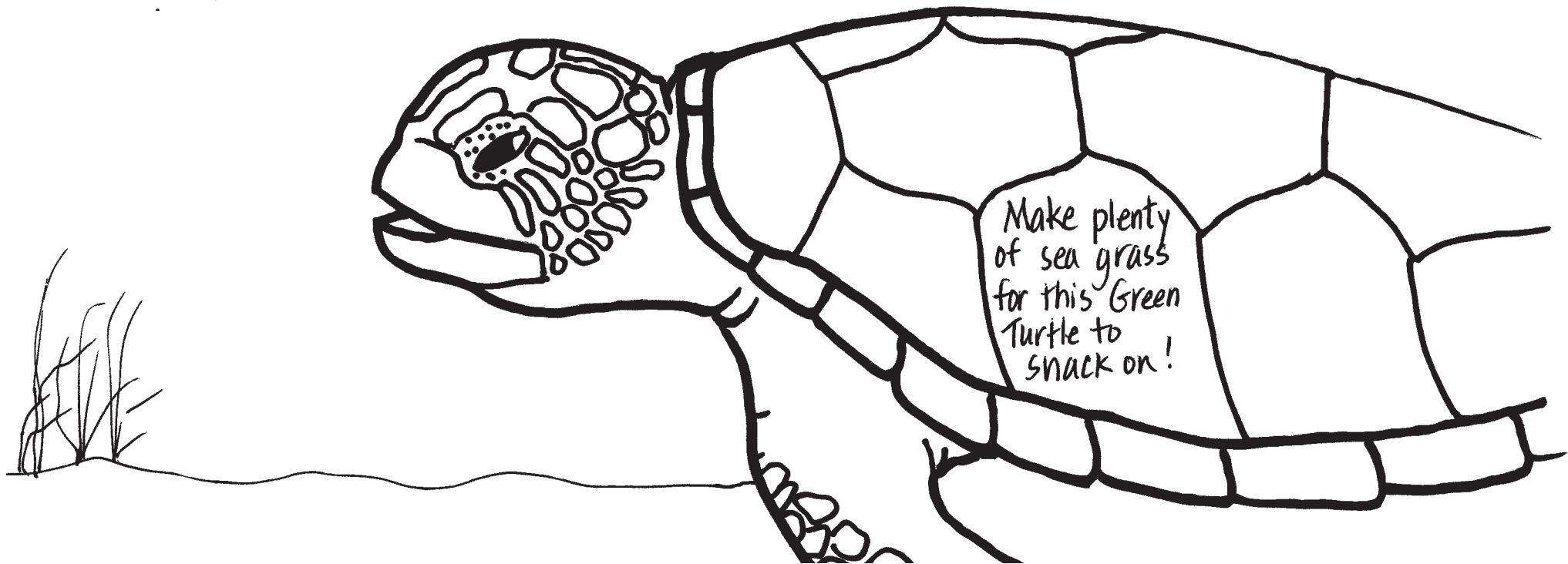
This loggerhead is just returning to the sea after nesting. Color the turtle and draw in the background.



“Turtle truth... Sea turtle nesting
Season on our Florida beaches
is May 1st through Oct. 31st.”

Green Sea Turtles

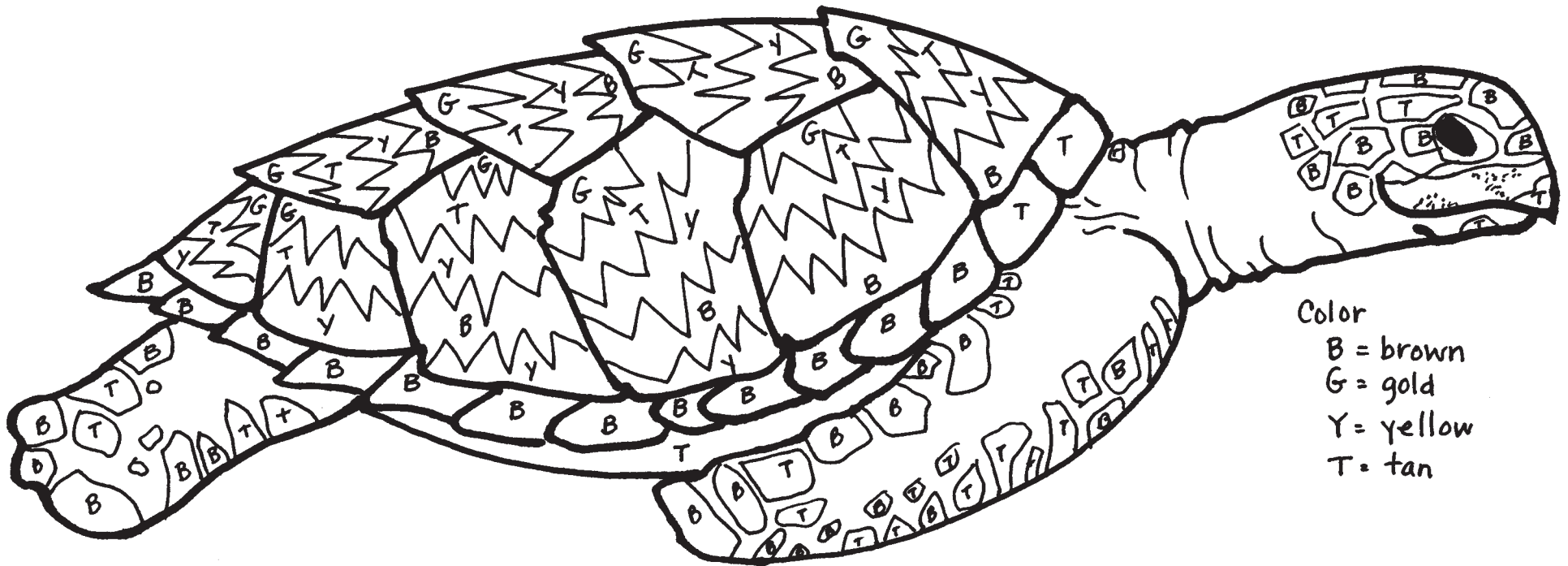
When traders first began traveling, they found that green sea turtles had especially tasty meat. Early sailors would capture green turtles, haul them into their ships, and turn them over. The sea turtle would stay alive a long time, and the sailors would have a fresh supply of meat. The green turtle lives in coastal waters and feeds on the sea grasses. The green is about 3 feet in length and weighs about 350 pounds. They have a heart shaped carapace and are the second largest sea turtle. The largest concentration of green turtles is off the coast of Australia. The green gets its name from the color of its fat, because of its strict dieting habit, eating only sea grasses. This makes the fat an olive green color. One of the odd characteristics of the green turtle is its use of an underwater sleeping shelter that it often returns to each night. The greens have picked up the name “sun bather” because they will sit on the ocean's surface, just basking in



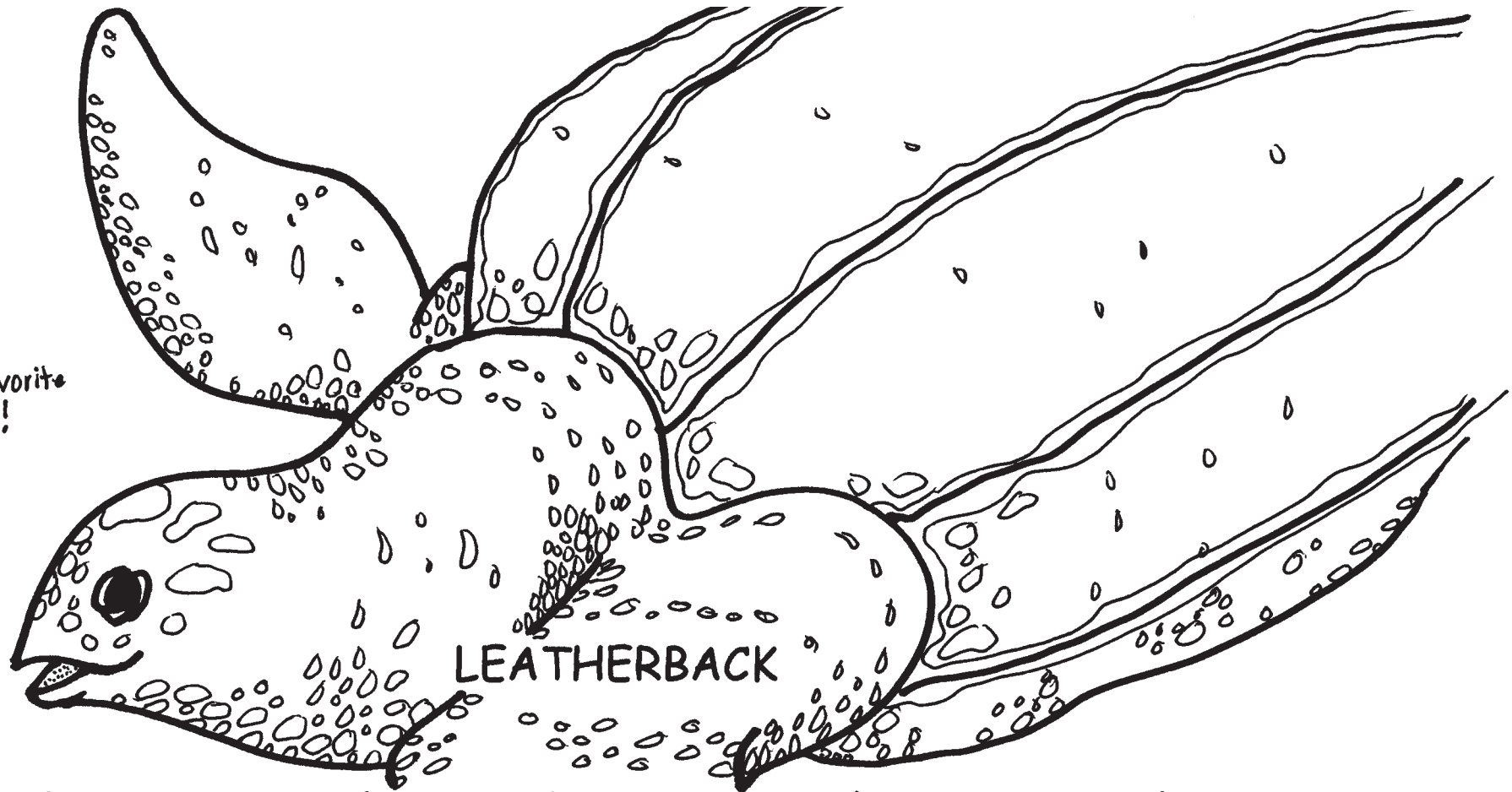
Turtle truth... hatchlings will be boys if the eggs have a cooler temperature surrounding them...
and hatchlings will be girls if there are warmer temperatures in the nest.

Hawksbill

The hawksbill is often sought after by poachers because of its beautiful carapace, or top shell. The carapace itself is yellow and brown. The scales overlap like roof shingles to make a very ornate pattern. This sea turtle measures in a little less than 3 feet long and usually weighs around 100 pounds at adulthood. Their diet consists of poisonous sponges that scientists have not figured out how hawksbills eat without any ill side effects. When a hawksbill chooses a nesting site, it tends to select a very isolated spot where there are lots of roots and shrubs. They do this to make it more difficult for predators to get their nest.




Draw the
Leatherback's favorite
food right here!



The leatherback is the largest in the sea turtle family, growing to be almost eight feet long and weighing 1000 pounds. This sea turtle's overall color is black, and it is the only sea turtle that does not have a hard carapace. The leatherback is a great traveler going for thousands of miles, and a deep diver. A female may nest on the beaches in South America, and then follow the Gulf Stream all the way up into Nova Scotia, Canada. Some leatherbacks do nest in Florida on the east coast. The leatherback's diet consists of jellyfish, and one of its favorites is the poisonous Portuguese Man-o-war.

Turtle truth... sea turtles may live to be 100 years old. That makes them among the oldest living vertebrate animals!

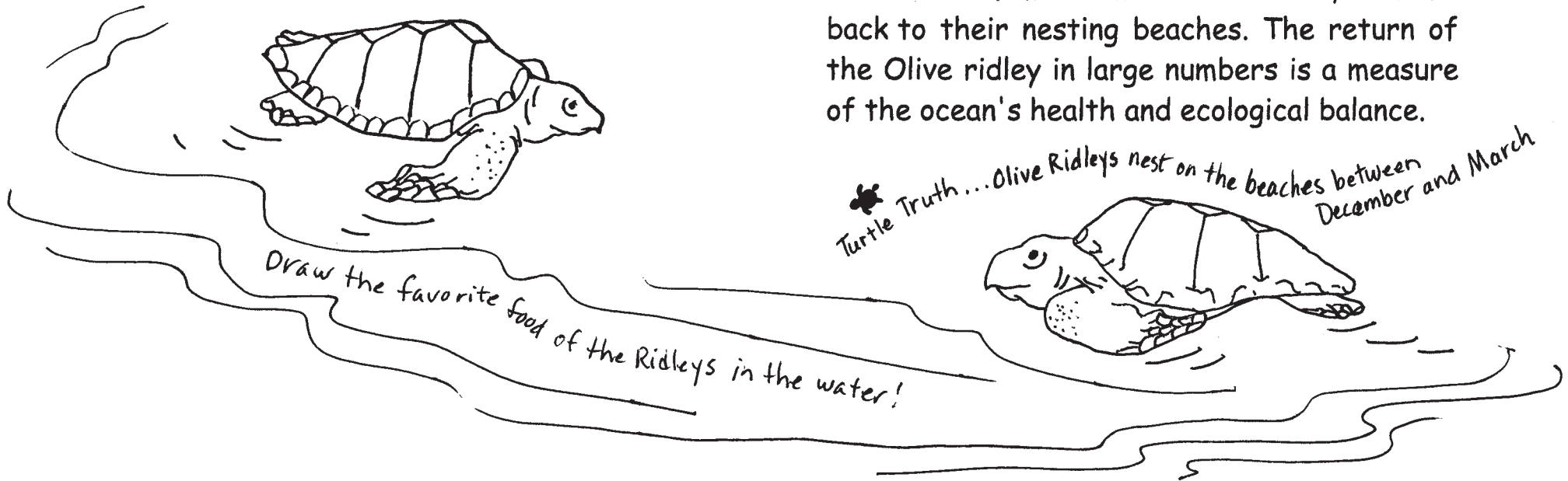
 Turtle Truth... Birds, crabs, raccoons, armadillos, foxes, ants, bobcats, coyotes, and humans are possible predators hatchlings must avoid.


Kemp's Ridley

The Kemp's ridley is the smallest sea turtle, at about 28 inches in length. The hatchlings are only about 2 inches and dark in color. When they become adults, their color changes to an olive green. The Kemp's ridley has only been identified as its own species since 1963. Unlike most other turtles, the Kemp's ridley nesting event takes place in a large group, called an "arribada", mostly in Central America. The Kemp's ridley feeds on small crustaceans. The Kemp's ridley is on the verge of extinction and is the most endangered of the sea turtles.

Olive Ridley

The average adult Olive ridley weighs around 35 to 45 kg or 75 to 100 pounds. They have 6 to 7 scutes on the carapace that measures 62 to 70 cm or 2 to 2.5 feet. They can be found in the tropical and subtropical waters of the Pacific, Indian, and Atlantic Oceans. The Olive ridley gets its name from the olive green color of its carapace. Like its cousin the Kemp's ridley, Olive ridleys nest in large groups on the same night. They have their "arribada," on the beaches of Orissa, India. The Olive ridley's diet consists of crustaceans, squid, small fish, and sea grass. They swim great distances, thousands of miles across the ocean, to come back to their nesting beaches. The return of the Olive ridley in large numbers is a measure of the ocean's health and ecological balance.



 Turtle Truth... Olive Ridleys nest on the beaches between December and March



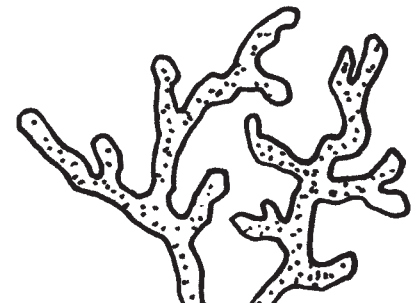
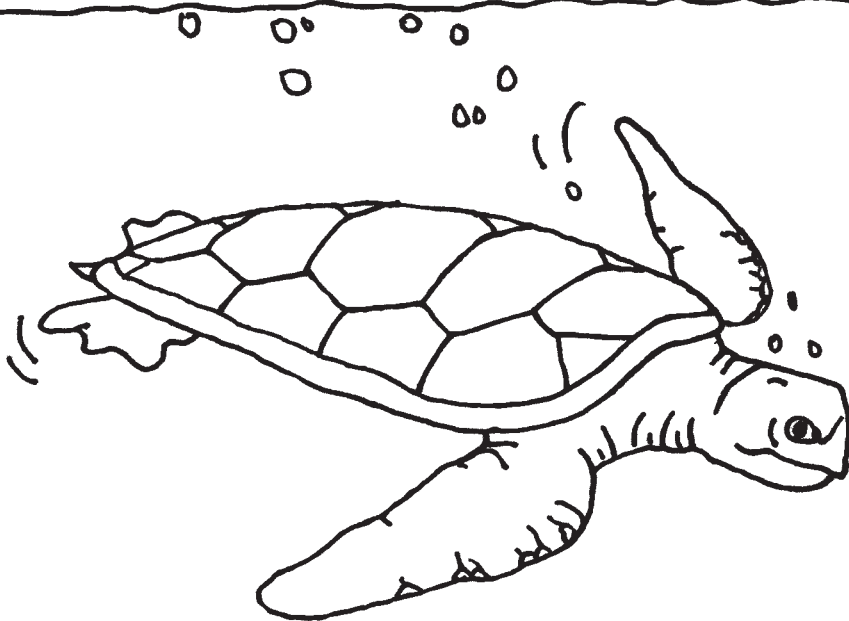
Turtle Truth...

Australian Flatbacks were once considered Green Sea Turtles.

Australian Flatback Sea Turtle

The elusive Australian Flatback sea turtle is only found in the waters off northern Australia. Their range is very limited; they never travel far from their nesting area. The Flatback is different from most sea turtles, which are oceanic and swim vast distances throughout their lives.

The adult Flatbacks are rarely seen. This is due to the fact that the aquatic surroundings they inhabit are very murky. The Flatbacks share their marine environment with a fierce predator, the saltwater crocodile. Flatbacks have a unique ability to stay submerged under water longer than most other species of sea turtles. This allows them more time to hunt for their favorite crustaceans. The Flatback is a very isolated species only being identified as a separate species in the last twenty years.



 Turtle truth... sea turtles migrate thousands of miles in a year!

WORDSEARCH


See if you can find the words listed below in the WORDSEARCH. The words go up, down, across, diagonally, or backwards. Once you find all the words, think about what each has to do with sea turtles and efforts to protect them. Use your glossary to help you!

LOGGERHEAD	HAWKSBILL
KEMPS RIDLEY	OLIVE RIDLEY
HATCHLINGS	SEAGRASS
ENDANGERED	JELLYFISH
BEACH	SEA TURTLES
LIGHTS	SHORELINE
LEATHERBACK	PLASTRON
GREEN	CARAPACE
HABITAT	ESTUARY
POLLUTION	SCUTES
MIGRATE	POACHERS
NEST	PREDATORS

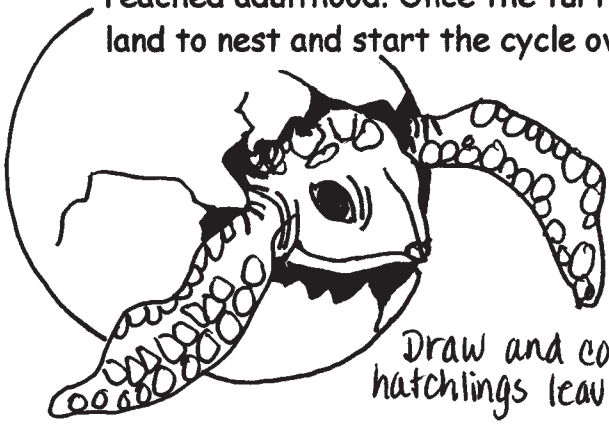
Can you find the mystery word?

S	L	E	E	I	U	I	F	D	U	L	C	N	C	D	L
N	O	R	T	S	A	L	P	S	Z	P	S	H	N	O	E
E	G	S	E	T	U	C	S	R	E	H	C	A	O	P	O
S	G	V	B	G	O	N	H	A	W	K	S	B	I	L	L
T	E	H	E	N	I	L	E	R	O	H	S	I	T	E	S
Y	R	A	U	T	S	E	I	G	E	N	O	T	U	E	E
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K	C	A	B	R	E	H	T	A	E	L	N	E	L	G	S
M	S	R	O	T	A	D	E	R	P	N	C	A	E	E	E
Y	I	G	T	H	H	S	I	F	Y	L	L	E	J	R	Y
N	U	I	M	J	K	M	S	C	R	G	I	S	P	E	G
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The Life Cycle of the Sea Turtle

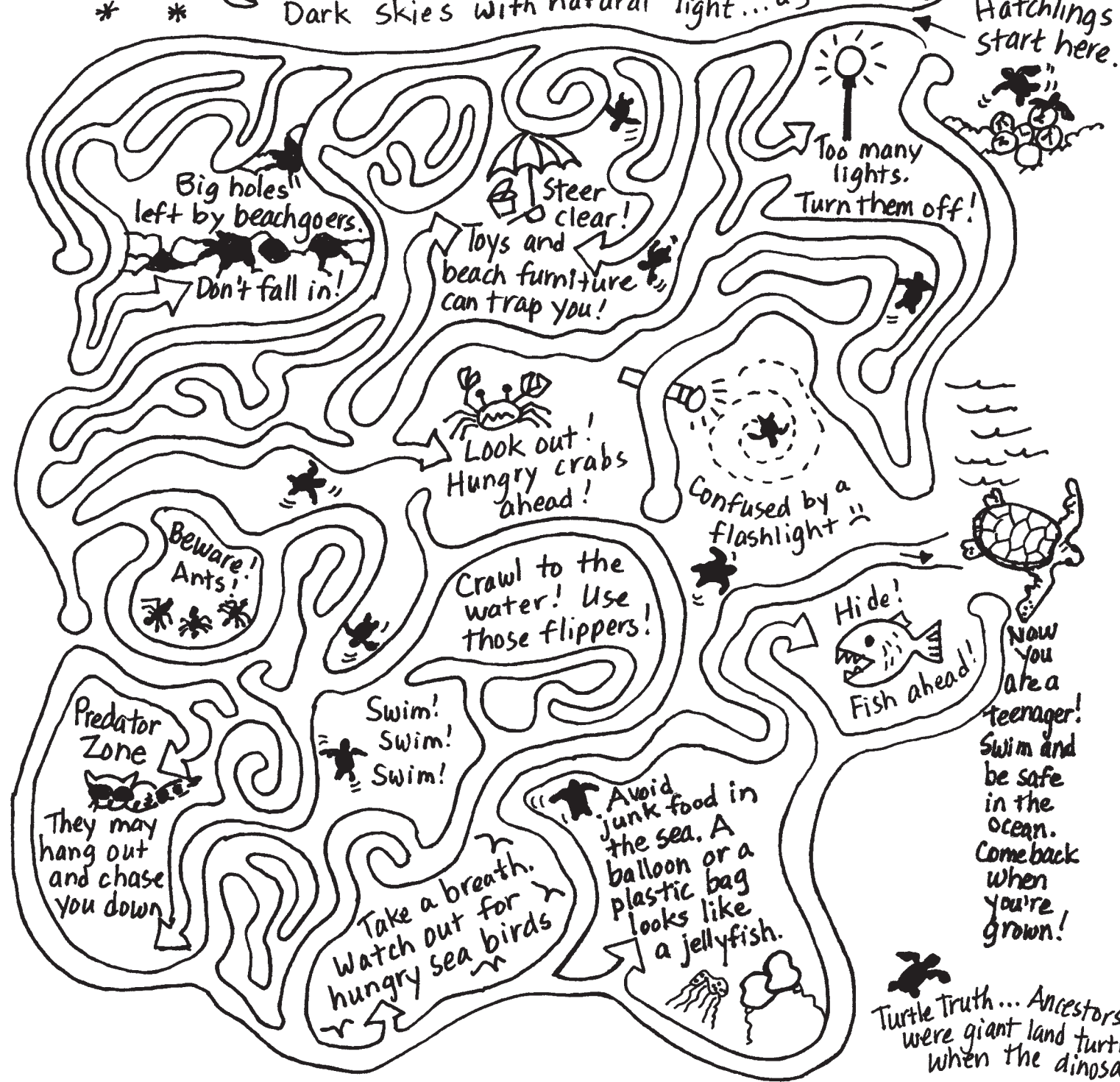
11  Turtle truth... Female sea turtles provide no care for their eggs, once they are laid.

It all begins when the mother sea turtle works her way up the beach to lay her eggs. As the mother finds a suitable place to lay her eggs, she leaves a very distinct track. When the mother finds the area where she wants to lay her eggs, she then begins to dig a hole with her rear flippers. She digs a hole that is about two feet down. Once the hole has been completed, she starts to lay her eggs. The average number of eggs laid by a sea turtle is one hundred. When the mother has finished laying her eggs, she fills the hole up with sand and pats it down. She then uses her front flippers to throw sand over the nesting area, possibly to disguise the nest from predators. Finally, she begins to pull herself back down the beach to the water. She will not ever return to see her baby hatchlings. The eggs will sit in their nest, protected only by the sand that covers them, for about two months. During this time, nests can be destroyed by any one of many predators, including man. When the hatchlings begin to emerge from their eggs, they use a specially designed tooth called the egg tooth. It takes several days for all the hatchlings to break free from the eggs that have been their home. They remain in the nest together. When they are finally ready to head to the water, they crawl out of the nest at night when they have felt the sand cool. When the hatchlings make it to the surface, their instincts tell them to look for a brighter light. In nature, the brightest glow comes from the horizon over the water, which is reflecting light from the moon and stars. The baby turtles will move towards this lighter area until they reach the water. Even this part of their journey can be dangerous, with many predators attacking them as they crawl to the water. Once the hatchlings are in the water, and past the breakers, they begin to swim out towards the sargassum weed lines. There the turtles will stay until they reach the size of a dinner plate, and then the juvenile turtles will move towards an estuary. An estuary is an area where fresh water of a river meets the salt water of a bay. Here the sea turtles will stay until they have reached adulthood. Once the turtle is at full size, it will go out to the open ocean, mate, and hopefully come back to land to nest and start the cycle over again.



Draw and color some other hatchlings leaving their eggs.

* * * * *
Dark skies with natural light... a good thing!



See if you can help the hatchlings find their way to the sea. They must make it to a healthy habitat in the ocean, where they will find plenty of food. Beware of all the threats on the beach and in the sea that might harm them.

Turtle Truth... Ancestors of today's sea turtles were giant land turtles that entered the sea when the dinosaurs lived.



Turtle truth... in some cultures, egg collectors gather sea turtle eggs from their nests to eat and sell in markets. Most places it is illegal to take the sea turtle eggs.

The Sea Turtle's Body

The sea turtle has been around since prehistoric times and really has not changed much. The turtle's most distinctive feature is its shell. The turtle's shell is attached to the turtle by the backbone vertebrae, at the top of the shell. The shell grows with the turtle and never cramps the turtle. The top of the shell is called the carapace and the bottom is known as the plastron. On the carapace, you see the scutes which are woven, like roof shingles. Unlike the fresh water turtles, sea turtles cannot pull their head or limbs into their shells because of tendons attaching them. The sea turtle has limbs that are flippers and the front flippers are much stronger than the back. Sea turtles have evolved to cope with being in the salt water all the time. They are able to cry out the salt that they consume, and this helps prevent dehydration.

Unscramble... to make words related to the sea turtle's body...

leshl _____

apecacar _____

slapnotr _____

tessuc _____

blism _____

last _____

slipepfr _____

cobbeakn _____

dahe _____

treaveerb _____

stonedn _____

tradhoideyn _____

Can you label the turtle's anatomy?

Turtle truth... Sea turtle eggs are about the size and shape of ping pong balls... except they are more "leathery" so they don't break when laid.

The back of a turtle is covered with bony plates called scutes, which form the CARAPACE.

The front flipper is called the FORE LIMB.

The back flipper is called the HIND LIMB.

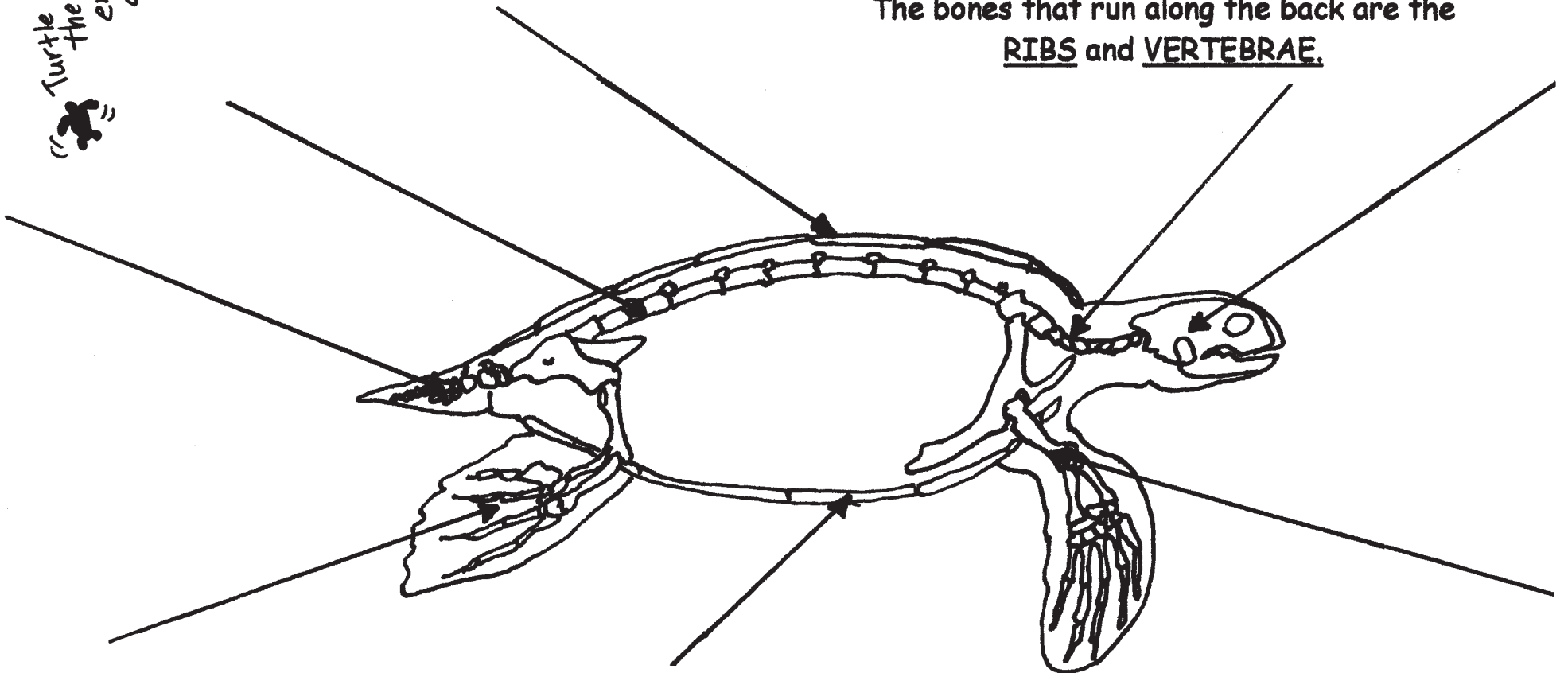
The underside of a turtle is called the PLASTRON.


The bones in the tail are called the TAIL VERTEBRAE.

The bones in the neck are called the NECK VERTEBRAE.

The soft parts of the head are protected by the SKULL.

The bones that run along the back are the RIBS and VERTEBRAE.



 Turtle truth... sea turtles are the largest reptiles in the world... by weight!

Dangers in the water

One of the biggest dangers affecting sea turtles is trash in the water. Many small turtles can get their heads caught in the plastic rings that held six packs of soda. Among other dangers, the largest turtle, the leatherback, diets on jellyfish. When the leatherback sees a plastic bag in the water, it might go after it thinking it's found a jellyfish. The bag will be trapped in its throat or digestive system. Fishing line and fishing hooks are very dangerous because the sea turtles can ingest them.

Another danger in the water is long-line fishing and big trolling nets. Discarded lines from crab pots can become wrapped around a flipper, causing great damage and death. Now fishing nets have TEDs - "turtle excluder devices" - that allow the turtle to escape from a shrimp boat net, and still allow fishermen to keep their catch. Many people are not using TEDs yet, and some think they may be too small for larger sea turtles, but they are saving many turtles all over the world.

How long does it take for each bit of trash to disappear? Match the item to the time.



Aluminum can
 Plastic six-pack ring
 Disposable Diaper
 Foam cup
 Microfilament fishing line
 Apple Core
 Glass bottles
 Newspaper

600 years
 400 years
 50 years
 No one knows!
 6 weeks
 2 months
 200 years
 450 years

Answers: fishing line 600yrs
 diaper 450yrs, papering 400yr,
 aluminum can 200yrs, foam cup
 50yr, newspaper 6wks, apple-
 core 2mo., glass... no one knows!

"Turtle Truth... adult male and female sea turtles are about the same size, except males have longer, thicker tails and longer claws."

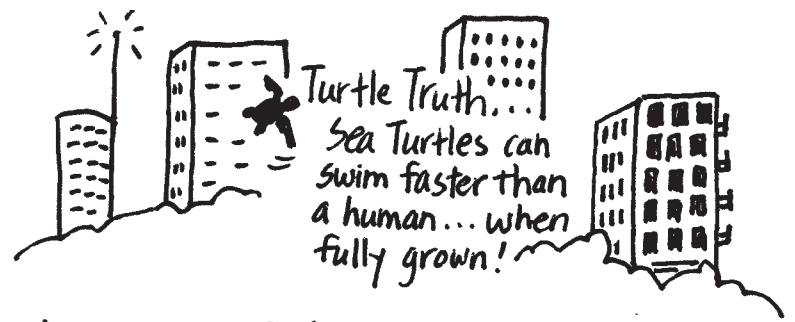


What kids can do to help

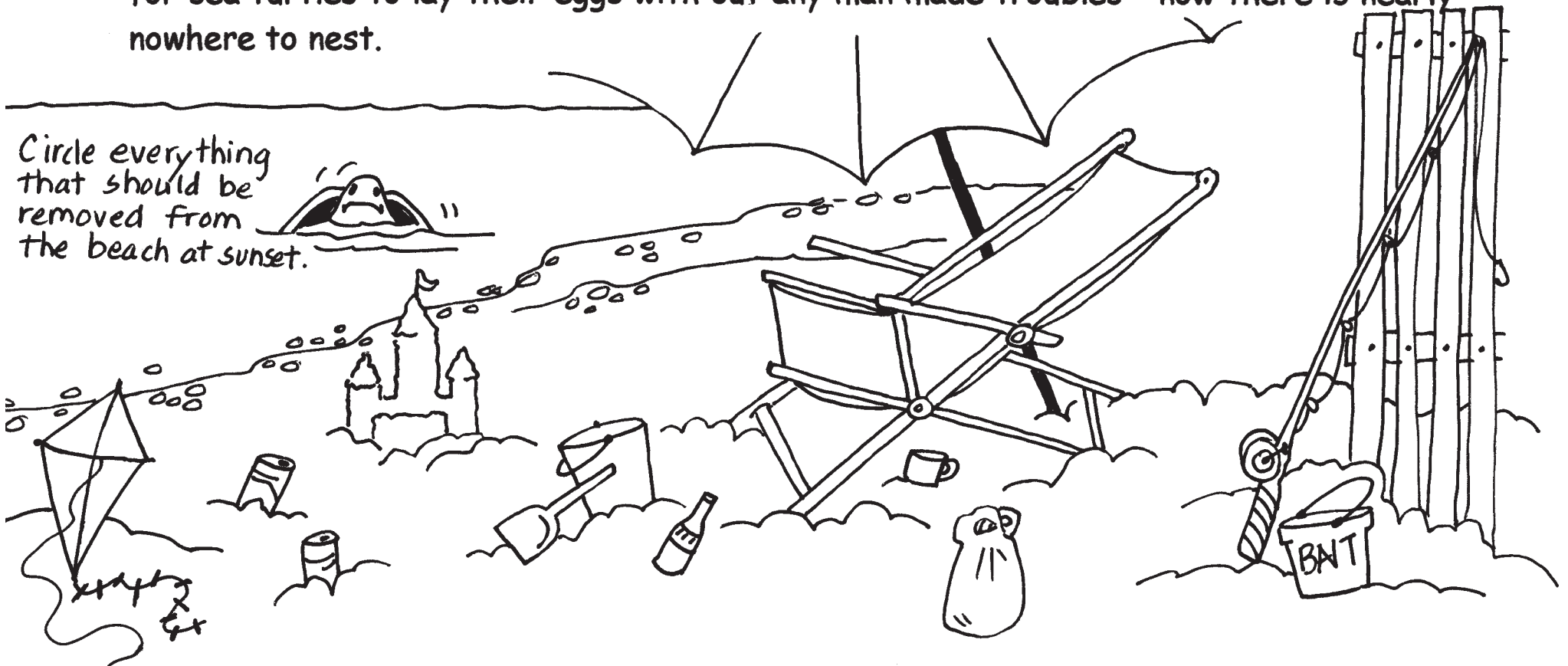
The most important thing kids can do to help sea turtles is to be aware and knowledgeable and to share that knowledge with other people. A big thing young people can do is to organize beach cleanups. If you cannot do that just make sure you are not adding to the problem. When you're out in the boat or on the beach, make sure you have a place to put your trash and used fishing line. If you are all really active, you want other people to be as involved as you are to make a difference. Start programs where you can go to different schools and libraries and try to get people as interested as you. The turtle population is diminishing, and it is mostly a result of not understanding the consequences of our actions. People will listen if you give them the information. Most people aren't trying to hurt the sea turtles. They just don't know any better. If you see a turtle on the beach, you should not touch it or get near it. If the turtle is nesting, then just stay back and leave her alone. If the turtle seems to be in distress, then locate a local environmental group or a beach permit holder who has government permission to work with turtles.

Turtle eggs! Write something YOU can do (inside each egg) to help sea turtles.

No Place to Nest

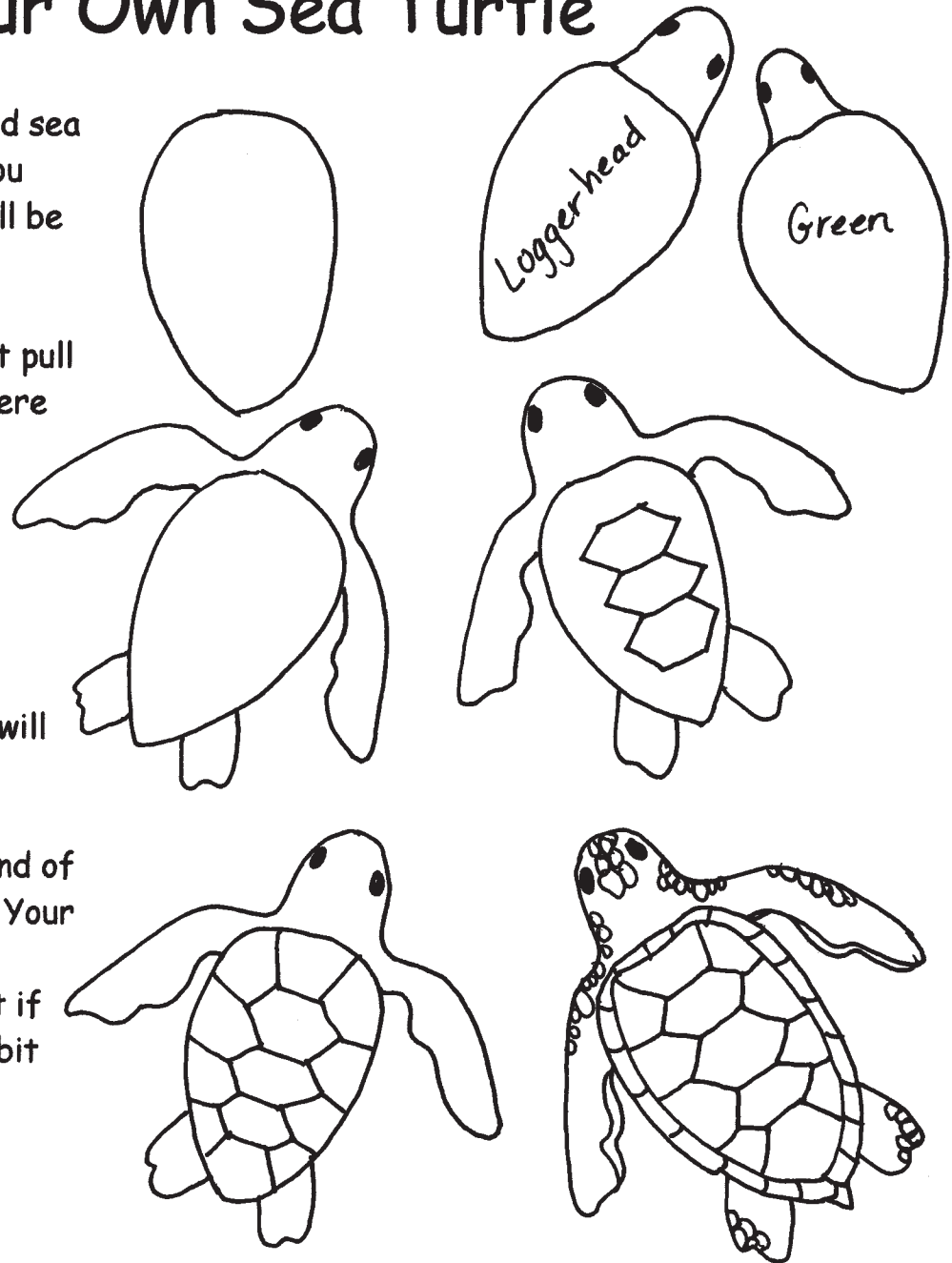



When you are down on the beach, now what do you see? Large apartment buildings, houses, and hotels are taking up most of our beaches and leaving only a small piece of the beach left. Then this small strip is covered in beach furniture. Where the sea turtles lay their eggs, there will be thousands of people walking over the same spots. Also illuminating from these houses and apartments are very bright lights attracting hatchlings away from the water. Once there were miles and miles of beach for sea turtles to lay their eggs with out any man made troubles - now there is nearly nowhere to nest.




Draw Your Own Sea Turtle

1. Make an oval with a flat top.
2. Add a head. If you are making a loggerhead sea turtle, make the head **BIG**, like a log! If you are making a green sea turtle, the head will be smaller.
3. Add eyes.
4. Front flippers are next. Sea turtles cannot pull their legs and head into their shells, so there will be more forelimb (flipper) showing.
5. Next come the "scutes." Scutes are hard scales on the sea turtle's shell. Start with three hexagons (hexagons are six sided shapes)
6. Add line segments from your hexagons.
7. If you've done this part right, your turtle will have thirteen scutes. All sea turtles have scutes, except leatherbacks.
8. If you want to get fancy, you can add a band of smaller scales around the thirteen scutes. Your sea turtle will have "leathery" looking skin.
9. If you want a boy turtle, add a big tail, but if yours is a girl, the tail will just poke out a bit from under the shell.



 Turtle truth... Some females may nest many times in a season, laying hundreds and hundreds of eggs.

Use this page to draw turtles, keep a journal of your sea turtle encounters, or make a list of things you can do to help our coastal environment.

 Turtle truth... a sea turtle eggshell is full of tiny holes that you cannot see. Oxygen can pass through these holes to the young inside, even when they are buried in the sand!

G
L

 S
S
A
R
Y

Arribada - Spanish for Arrival, used to refer to a mass, synchronized nesting of sea turtles.

Carapace - The top portion of the turtle shell.

Crustaceans - Lobsters, shrimp, and crabs that have hard shells, jointed legs, and live underwater.

Endangered - When a species is in danger of becoming extinct.

Estuary - A place where fresh water and salt water meet, where a river flows into the sea.

Extinct - When the last living member of that species dies and that type of animal is gone forever.

False Crawl - When a mother turtle comes up on the beach but doesn't make a nest.

Green Turtle - An endangered sea turtle named for the green body fat under its shell.

Hatchling - Baby turtles that have just come out of their shells.

Hawksbill Turtle - An endangered sea turtle with a hook shaped beak, killed for its shell.

Kemp's Ridley Turtle - The smallest and most rare of the endangered sea turtles.

Leatherback Turtle - The largest of the endangered sea turtles. It gets its name from the leathery covering on its carapace.

Loggerhead Turtle - A threatened sea turtle, name for the shape of its head.  Turtle truth...

Migration - Traveling from one area to another, sometimes for food or to mate.

Olive Ridley Turtle - A small sea turtle named for the olive green color of its heart shaped shell.

Sea turtles must breathe air, like all reptiles!

Plastron - The bottom of the turtle shell.

Poachers - Humans that hunt animals illegally. Laws in the U.S. protect endangered and threatened animals from being hunted or killed.

Predators - Animals that hunt and eat other animals for food.

Sea Grass - Grass that grows under water, usually in a large area called a bed. A good source of food and habitat for many types of sea life.

Scutes - The scales that cover a turtle shell.

Threatened - At risk for becoming endangered, and possibly headed towards extinction.

Turtle Excluder Devices - TED's, a device that allows turtles to escape from a shrimp net, while keeping the shrimp in.

Thank You from the Author

Thank you to Dr. Supraja Dharini of the Tree Foundation in Chennai, India for asking that the Olive Ridley sea turtle be added to the activity book. Her vision will make it possible for children along the coast of India to enjoy and learn about pelagic reptiles.

This is the first printing of the activity book with the Australian Flatback sea turtle included, thanks to the recommendation of Brad Nahill of SEE Turtles.Org. Brad felt the book was not complete without all of the threatened and endangered sea turtles.

Special thanks to Elsa Holderness for her design expertise. With Elsa's talent to edit and upload my text into the computer, Turtle Talks is being read by thousands of students around the world in three languages.

Many thanks to Linda Soderquist, who beautifully illustrated both the sea turtle and the gopher tortoise book. Since I was eleven years old she has been my mentor and made me believe that a kid can make a difference in the environment. Now, at eighteen years old, I want to pass that message on to you!



Printing made possible by grants from See Turtles Org and Enviro Kidz Organic.