What are turtles and tortoises?

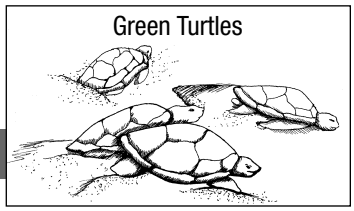
Vertebrate Concepts:

- Turtles and tortoises are vertebrates and their backbone consists of a shell.
- Most of them can tuck their head inside their shell or to the side.
- Sea turtles cannot retract their head and limbs into their shells.
- Turtles spend their lives in water and only come on land to lay their eggs; tortoises live on land.
- Turtles often have webbed feet for swimming; tortoises have sturdy legs for walking.
- Most turtles are omnivores; most tortoises are herbivores.
- Turtles and tortoises have a beak instead of teeth.
- Land turtles have hard, round shells; sea turtles have flatter, lighter shells which are streamlined for swimming.
- All turtles and tortoises lay their eggs on land.

Vocabulary Words: shell flippers *scutes *carapace *plastron

Construct and Read: *Lots of Science Library Book #12.*

Activities:



Green Turtles Journey – Graphic Organizer

Focus Skill: mapping
Paper Handouts: 8.5"x11" sheet of paper a copy of Graphics 12A-B
Graphic Organizer: Make a Half Book. Glue/draw Graphic 12A on the cover and label it *Green Turtles*. Open the tab and glue/draw Graphic 12B on the top section. Use a red marker to draw a line showing the green turtle's journey from Brazil to Ascension Island. Use a green marker to draw an arrow showing the green turtle's journey back to Brazil.
On the bottom section of the Half Book:

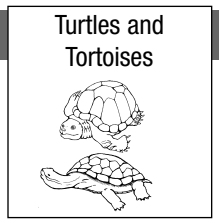
✎ Draw a picture of a green turtle laying eggs.

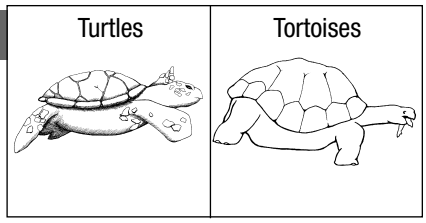
✎✎ Write clue words about green turtles: *swim 1,400 mi (2,250 km) to Ascension Island; female green turtles dig hole over 19 in (50 cm) with their hind flippers, lay up to 200 eggs, journey back home, the round trip is about three years.*

✎✎✎ Describe the migratory journey of green turtles.

Open the *Reptile Desktop Project* and glue *Green Turtles Journey Graphic Organizer* on the top of the middle section.

Turtles and Tortoises – Graphic Organizer





Focus Skill: describing
Paper Handouts: 8.5"x11" sheet of paper
a copy of Graphics 12C-E
Reptiles Desktop Project

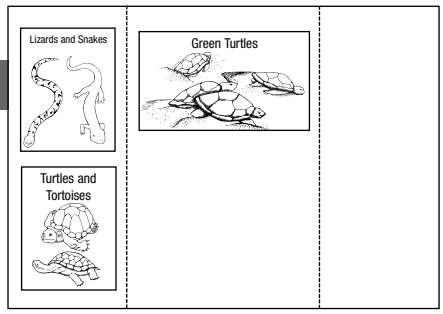
Graphic Organizer: Make a Large Question and Answer Book. Glue Graphic 12C on the cover and title it *Turtles and Tortoises.* Glue Graphics 12D-E on the tabs and label each *Turtles* and *Tortoises* accordingly. Open the tabs:

✎ Under the *Turtles* tab, draw a land turtle and a sea turtle. Under the *Tortoise* tab, draw a tortoise on land.

✎ ✎ Write clue words about turtles and tortoises under each tab: turtles – *over 200 species, live in water, lay eggs on land, webbed feet or flippers, flat and lighter shells.* tortoises – *41 species, live on land, lay eggs on land, legs are for walking, round shells, hide in shells.*

✎ ✎ ✎ Under each tab, describe the characteristics of turtles and tortoises.

Open the *Reptiles Desktop Project* and glue the *Turtles and Tortoises Graphic Organizer* on the bottom of the left section.



Turtle in a Pond Art – Activity

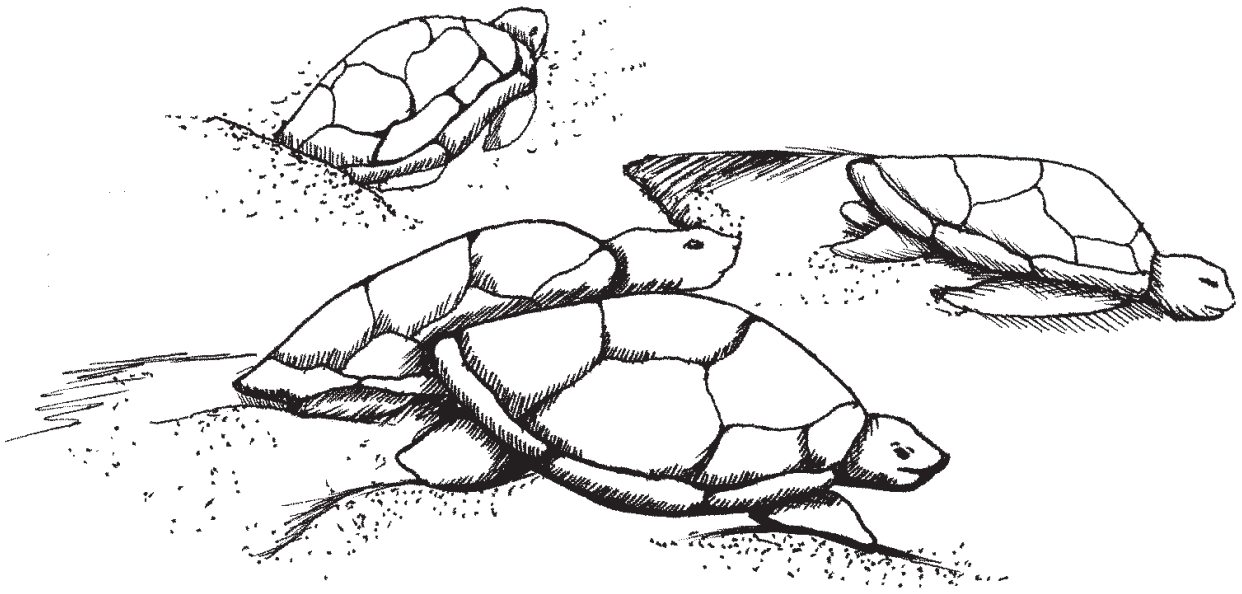
Activity Materials: blue, green, yellow, orange chalk
shallow pan sheet of paper hammer water

Activity: Break chalk into a fine powder, keeping the colors separate. Fill the pan with water. Sprinkle blue chalk dust over the entire surface of the water. In the center, sprinkle a circle of green chalk dust. Sprinkle other colors on the green in patterns such as criss-crosses, diamonds, and stars. Place the sheet of paper gently on top of the water. After a few seconds, lift the paper carefully and let it dry. Add details to your turtle.

Experiences, Investigations, and Research

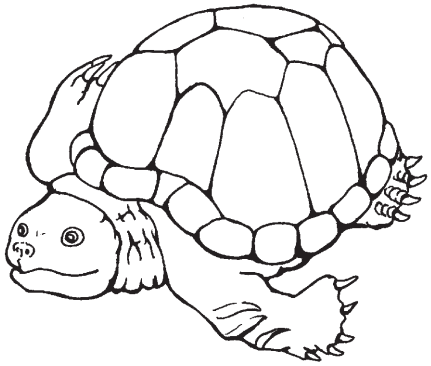
Select one or more of the following activities for individual or group enrichment projects. Allow your students to determine the format in which they would like to report, share, or graphically present what they have discovered. This should be a creative investigation that utilizes your students' strengths.

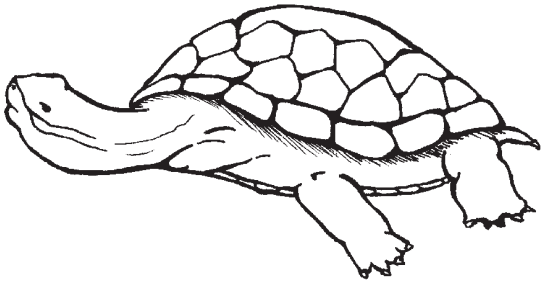
1. Using an Internet Search Engine, research endangered turtles. Choose an endangered species to research and conservation efforts to save it.
2. Using an Internet Search Engine, research endangered tortoises.
3. ✎ Read and discuss *The Smallest Turtle* by Lynley Dodd.
4. ✎ & ✎ ✎ Read and discuss *The Turtle and the Monkey* by Joanna C. Galdone.
5. Create a bar graph comparing the number of species of tortoises to the number of species of turtles.



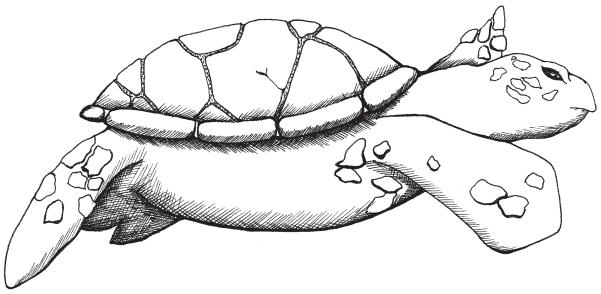

Ascension
Island

Turtles and Tortoises 12-C

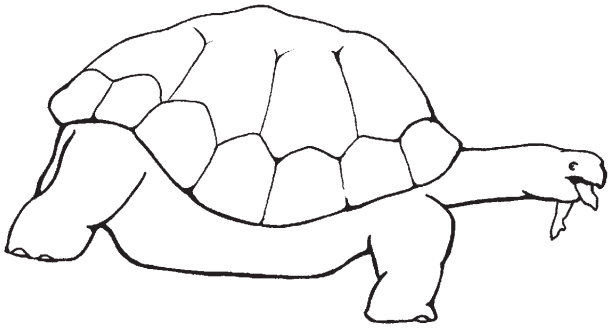




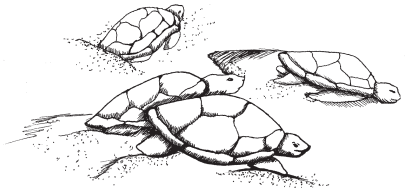
Turtles 12-D



Tortoises 12-E



What are turtles and tortoises?



Lots of Science Library Book #12

bond
clear
ice
cool
ears
trunk

Lots of Science Library Books

Each *Lots of Science Library Book* is made up of 16 inside pages, plus a front and back cover. All the covers to the *Lots of Science Library Books* are located at the front of this section. The covers are followed by the inside pages of the books.

How to Photocopy the *Lots of Science Library Books*

As part of their *Great Science Adventure,* your students will create *Lots of Science Library Books.* The *Lots of Science Library Books* are provided as consumable pages which may be cut out of the *Great Science Adventures* book at the line on the top of each page. If, however, you wish to make photocopies for your students, you can do so by following the instructions below.

To photocopy the inside pages of the *Lots Of Science Library Books:*

1. Note that there is a "Star" above the line at the top of each *LSLB* sheet.

2. Locate the *LSLB* sheet that has a Star on it above page 16. Position this sheet on the glass of your photocopier so the side of the sheet which contains page 16 is facing down, and the Star above page 16 is in the left corner closest to you. Photocopy the page.

3. Turn the *LSLB* sheet over so that the side of the *LSLB* sheet containing page 6 is now face down. Position the sheet so the Star above page 6 is again in the left corner closest to you.

4. Insert the previously photocopied paper into the copier again, inserting it face down, with the Star at the end of the sheet that enters the copier last. Photocopy the page.

5. Repeat steps 1 through 4, above, for each *LSLB* sheet.

To photocopy the covers of the *Lots of Science Library Books:*

1. Insert "Cover Sheet A" in the photocopier with a Star positioned in the left corner closest to you, facing down. Photocopy the page.

2. Turn "Cover Sheet A" over so that the side you just photocopied is now facing you. Position the sheet so the Star is again in the left corner closest to you, facing down.

3. Insert the previously photocopied paper into the copier again, inserting it face down, with the Star entering the copier last. Photocopy the page.

4. Repeat steps 1 through 3, above, for "Cover Sheets" B, C, D, E, and F.

How to assemble the *Lots of Science Library Books*

Once you have made the photocopies or cut the consumable pages out of this book, you are ready to assemble your *Lots of Science Library Books.* To do so, follow these instructions:

1. Cut each sheet, both covers and inside pages, on the solid lines.

2. Lay the inside pages on top of one another in this order: pages 2 and 15, pages 4 and 13, pages 6 and 11, pages 8 and 9.

3. Fold the stacked pages on the dotted line, with pages 8 and 9 facing each other.

4. Turn the pages over so that pages 1 and 16 are on top.

5. Place the appropriate cover pages on top of the inside pages, with the front cover facing up.

6. Staple on the dotted line in two places.

You now have completed *Lots of Science Library Books.*

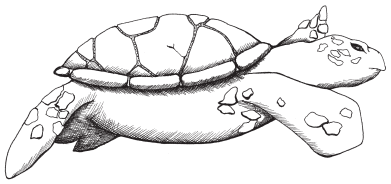
Fascinating Facts

The largest turtle in the world is the great leatherback sea turtle. It can grow to a length of 8 ft (240) and weigh over 2,000 lb (900 kg). One of the smallest turtles is the stinkpot, or musk turtle. They measure about 5 in (13 cm). For defense, aside from their tough shell, they give off an offensive odor.

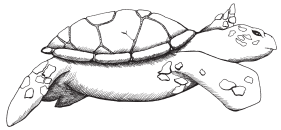
The second order of reptiles includes turtles and tortoises. Turtles and tortoises are cold-blooded vertebrates. They have a backbone which consists of a shell.

Turtles and tortoises make up the order chelonia.

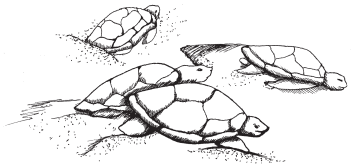
Sea turtles have flatter, lighter shells which are more streamlined for swimming. Their legs are longer and they have webbed feet or flippers. Most sea turtles live in warm waters.



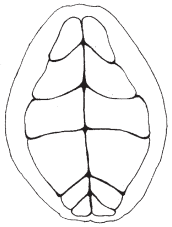
Sea turtles cannot retract, or pull in, their head and limbs into their shells. Instead, they escape predators by swimming away with the help of their strong flippers. Their rear flippers are used mainly as rudders for steering.



Female green turtles dig a deep hole, over 19 in (50 cm) with their hind flippers and lay up to 200 eggs. Then they take their long journey back home; the round trip takes about three years.

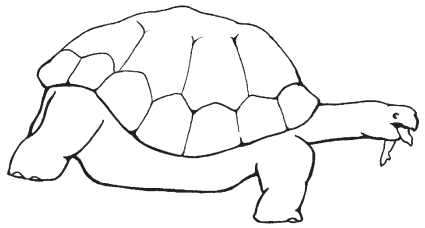


The underbelly part of the shell is called the plastron. The plastron is nearly flat. Its composition is similar to the carapace, with an external layer of horny material of scutes and interlocking bones.

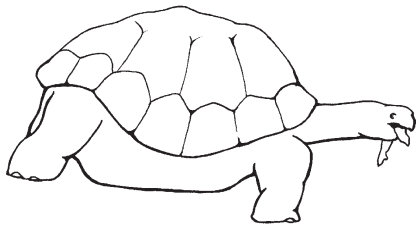


Most turtles are omnivores, or animals that eat both plant and animals. Most tortoises are herbivores, or plant eaters. Instead of teeth, turtles and tortoises have a beak.

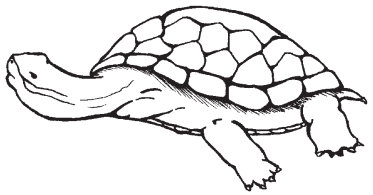
Turtles and tortoises can live longer than any vertebrate, including humans. The Galapagos tortoise can live up to 150 years.



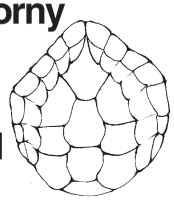
There are 41 species of tortoises and more than 200 species of turtles. Tortoises are found in every continent except Australia and Antarctica.



Tortoises have hard, round shells in which they can hide. They are equipped with short sturdy legs to carry the weight of the shell.



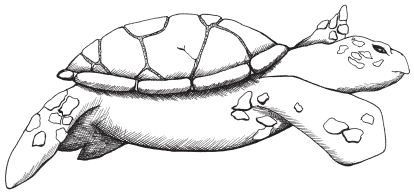
Turtles and tortoises are the only reptiles with a shell. The top of the shell is called the carapace. The spine and ribs of the animal are fused to boney plated beneath the skin which interlocks to the hard shell. The shell is covered by horny plates, called scutes, which protect the shell from damage.



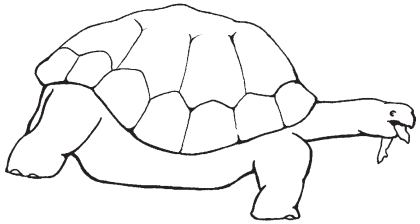
Fascinating Facts

The fastest swimming turtles are the green turtles. They can reach speeds of up to 20 mph (32 kph). Tortoises range in size from the 4 in (10 cm) Madagascan spider tortoise to the giant tortoises of and the Galapagos Islands. These giant tortoises can reach lengths of about 4.5 ft (1.4 m) and weigh up to 560 lb (254 kg).

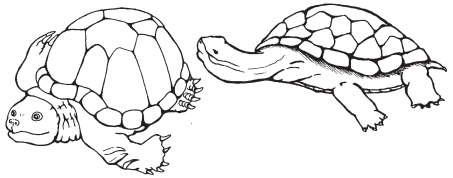
Turtles and tortoises are similar but differ in a few ways. Turtles spend their lives in water and only come on land to lay their eggs. Tortoises live on land.



Turtles often have webbed feet for swimming; sea turtles have flipper-like limbs. Tortoises have legs for walking.



Most turtles and tortoises can pull their bodies inside their shell when threatened by predators. Some tropical turtles, such as the helmeted turtle of Africa, tuck their heads to the side.



All turtles and tortoises lay their eggs on land. Some turtles swim hundreds of miles to lay their eggs. The green turtles off of Brazil's coast swim 1,400 mi (2,250 km) to Ascension Island, a small island located in the middle of the Atlantic Ocean.