• http://dep.state.fl.us/Northeast/stjohns/

ANIMALS OF THE ST. JOHNS RIVER WATERSHED

How Do They Survive?

REPTILES AND AMPHIBIANS OF THE ST. JOHNS RIVER WATERSHED

SKILLS: researching a topic, reading informational text, gathering relevant information, categorizing

COMMON CORE STANDARDS/FLORIDA STANDARDS: RI.4.9; RI.5.9; W.4.7-8; W.5.7-8
NEXT GENERATION SUNSHINE STATE STANDARDS: SC.4.L.16.3; SC.4.L.17.4; SC.5.L.17.1
NEXT GENERATION SCIENCE STANDARD: 4-LS1-1

MATERIALS:
index cards (one per student)
chart paper and marker
access to computers

Note: You will need two to three class periods for this activity.

STEPS:

1. Review with students the characteristics of reptiles and amphibians using the information in the sidebars on page 2.

2. Assign each animal from the box below to one or two students, explaining that each of these animals calls the St. Johns River watershed home. Have students research to find at least one adaptation—such as a body part, behavior, or ability—that helps the organism survive in its habitat. (See the list of websites on page 3 for help.) Direct the student to describe the adaptation on an index card.

REPTILES AND AMPHIBIANS IN THE ST. JOHNS RIVER WATERSHED

American alligator, eastern indigo snake, gopher tortoise, bronze frog, pig frog, cottonmouth, green anole, Florida softshell turtle, Florida snapping turtle, black swamp snake, spotted turtle, yellow-bellied turtle, south dwarf siren salamander, greater siren salamander, five-lined skink, southern leopard frog, common musk turtle, little grass frog, green tree frog, squirrel tree frog, Florida redbelly turtle

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ST. JOHNS RIVER CENTER

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3. When students have completed their cards, have them take turns sharing their adaptations as you list them on chart paper.

4. After all adaptations have been shared, divide the class into groups. Challenge each group to sort the list created in Step 3 into two categories: behavior or ability (actions an animal takes to survive) or structure (body structures or processes that help the animal survive).

5. Provide time for each group to share how it sorted the adaptations.

6. As a follow-up, have each student complete the "Adaptation Passport" reproducible activity on page 4 for its assigned animal. Then have students share their completed passports using these steps:

   a. Have students form two lines so that each child faces a partner. Designate the students in one line as the customs agents.
   b. Have each agent check the passport of the "animal" facing him by asking his partner to provide the proper identification (name and special adaptations).
   c. Direct each agent to move one place to his right to face a new partner. (Have the agent at the right end of the line move to the opposite end of the line). Repeat Step B.
   d. Continue until each agent has questioned five different animals. Then switch the lines' roles and repeat.

What Characterizes a Reptile?

An animal is a reptile if it...

- has a backbone
- is covered in scales
- lays eggs (though some give birth to live young)
- is cold-blooded (except for a few that can regulate their body temperature a bit)

Reptiles include the American alligator, snakes, lizards, and turtles.

What Characterizes an Amphibian?

An animal is an amphibian if it...

- has a backbone
- is cold-blooded
- spends at least part of its life in water and on land
- does not have scales and has skin that is permeable (lets molecules and gases pass through)
- has gills for at least part of its life

Most amphibians go through metamorphosis. Amphibians include frogs, salamanders, toads, caecilians, and newts.

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How Do They Survive?

REPTILES AND AMPHIBIANS OF THE ST. JOHNS RIVER WATERSHED

Extensions for Grades 2-3:

With students, review and compare the characteristics of reptiles and amphibians (see the sidebars on page 2). Then give each small group a picture of a reptile or an amphibian. (See the websites listed below to find some great photos.) Have students in each group work together to determine whether the animal shown in their picture is a reptile or amphibian, listing on paper reasons for their answer. Provide time for groups to share their pictures and reasoning. *Common Core Standards/ Florida Standards SL.2.1; SL.3.1; Next Generation Sunshine State Standard SC.3.L.15.1; Next Generation Science Standards 2-LS4-1; 3-LS2-1; 3-LS4-3*

Extensions for Grades 6-8:

Have each student or student pair choose a reptile and/ or an amphibian from the box on page 1 and research the limiting factors that impact the populations of both animals. *Common Core Standards/ Florida Standards W.6.7; W.7.7; W.8.7; Next Generation Sunshine State Standard SC.7.L.17.3; Next Generation Science Standards MS-LS2-1; MS-LS2-2*

To learn more about Florida's reptiles and amphibians, see these resources:

- http://myfwc.com/wildlifehabitats/profiles/reptiles-and-amphibians/
- http://www.flmnh.ufl.edu/herpetology/checklist/Flaherps.htm
- http://www.flmnh.ufl.edu/herpetology/fl-guide/onlineguide.htm
- http://myfwc.com/research/wildlife/amphibians-reptiles/atlas/
- http://floridasnature.com/reptile_amph..htm
- http://www.floridasprings.org/learn/life/reptiles/

For more information about the St. Johns River, check out these resources:

- http://www.sjrwmd.com/stjohnsriver/
- http://www.theriverreturns.org/
- http://dep.state.fl.us/Northeast/stjohns/

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Name _____ Researching a topic

ADAPTATION PASSPORT

Research your reptile or amphibian to help you fill in the information on the passport.
Then cut out the passport along the solid lines and fold it down along the dotted line so the text is on the inside.
On the front of the passport, draw a special insignia that represents the St. Johns River watershed.
On the back, list animals that would make good traveling companions for your animal.

The Secretary of Zoology for Florida's Wildlife

hereby requests that the Animal Kingdom citizen and Florida inhabitant named herein be allowed passage without delay or hindrance into the desired area and be given all lawful aid and protection to which it is duly entitled.

_____
(signature of bearer)

NOT VALID UNTIL SIGNED

ADAPTATION PASSPORT

Name: _____

Class: _____

Adaptation:

How does the adaptation help the animal survive?

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Note to the teacher: Use with the activity on page 1.

Otters and Bats and Bears—Oh My!

MAMMALS OF THE ST. JOHNS RIVER WATERSHED

SKILLS: researching a topic, informative writing

COMMON CORE STANDARDS/FLORIDA STANDARDS:
W.4.7; W.5.7; W.4.2; W.5.2
NEXT GENERATION SUNSHINE STATE STANDARDS: SC.4.L.16.3; SC.4.L.17.4; SC.5.L.17.1
NEXT GENERATION SCIENCE STANDARD: 4-LS1-1

MATERIALS:
student copies of page 8
scissors

STEPS:

1. Review with students the characteristics of mammals using the information in the sidebar on page 6. Then share with students photos of some of the mammals that call the St. Johns River home (see the box below), using the list of websites on page 7 as a source for photos.

   white-tailed deer, nutria, rice rat, river otter, Florida black bear, panther, West Indian manatee, marsh rabbit, bobcat, raccoon, gray fox, gray squirrel, opossum, Rafinesque's big-eared bat

2. Give each student a copy of page 8. Then divide students into pairs.

3. Have each duo set aside one copy of page 8 to use as an answer key. Direct students to cut apart the cards on the second copy, shuffle the cards, and place them facedown in a 4 x 5 array.

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Otters and Bats and Bears—Oh My!

MAMMALS OF THE ST. JOHNS RIVER WATERSHED

4 Have each twosome play the game as follows:

Directions:

1. Player 1 turns two cards faceup.
2. Player 1 decides whether the cards are a match. A match occurs when a mammal card is paired with the correct adaptation card. Player 2 uses the key to check. (Matching pairs are adjacent to each other.)
3. If the key shows that the cards are a match, Player 1 keeps the two cards and Player 2 turns two more cards faceup.
4. If the cards do not match, the player flips the two cards so they are facedown again, and Player 2 turns over two other cards so they are faceup.
5. Play continues in this manner until all matches have been made.

5 After students play the game, have them research adaptations of other St. Johns River mammals that are not included on page 5. Then have them make additional cards for the game and play again. Or, as an alternative, have each student research one of the mammals in the box and write a paragraph that describes a food web of which it is a member.

What Characterizes a Mammal?

An animal is a mammal if it...

- has a backbone
- is warm-blooded
- produces milk to nourish its young
- gives birth to live young (except for the platypus and echidna)
- has hair

Common mammals include dogs, bears, whales, monkeys, elephants, deer, rodents, bats, and humans.

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Otters and Bats and Bears—Oh My!

MAMMALS OF THE ST. JOHNS RIVER WATERSHED

Grades 2-3 Extensions:

After reviewing the characteristics of mammals, display several pictures of different animals, making sure most are mammals from the box on page 5. Have students discuss or record on paper why they think each animal is or is not a mammal. *Next Generation Sunshine State Standard SC.3.L.15.1; Next Generation Science Standard 2-LS4-1*

Grades 6-8 Extensions:

Direct students to design slideshow presentations that compare and contrast different food webs that feature mammals of the St. Johns River watershed. *Common Core Standards/ Florida Standards W.6.7; W.7.7; W.8.7; Next Generation Sunshine State Standard SC.7.L.17.1; Next Generation Science Standard MS-LS2-3*

To learn more about Florida's mammals, see these resources:

- http://myfwc.com/wildlifehabitats/profiles/mammals/
- http://www.wildflorida.com/florida_mammals.php
- http://www.mammalsociety.org/mammals-florida
- http://www.nsis.org/wildlife/mamm/
- http://www.nps.gov/ever/naturescience/mammals.htm

For more information about the St. Johns River, check out these resources:

- http://www.sjrwmd.com/stjohnsriver/
- http://www.theriverreturns.org/
- http://dep.state.fl.us/Northeast/stjohns/

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Game Cards

Use with "Otters and Bats and Bears—Oh My!" on page 5.

white-tailed deer	Instead of upper incisors, this mammal's mouth has a tough pad made of cartilage. When the animal feeds, it uses its lower incisors and two canine teeth to crush and strip woody stems and twigs on top of this tough pad.
bobcat	This mammal has long canine teeth that help it stab its prey. It also has very sharp claws that help it catch its prey.
gray fox	Most people don't know that this mammal is a tree climber! Its strong hooked claws help it climb trees to search for prey, to sleep, or to get away from predators.
Rafinesque's big-eared bat	When this mammal hibernates, it coils its large ears against its head to conserve body moisture.
marsh rabbit	This furry mammal with its long ears is a surprisingly strong swimmer. It will dive into the water to escape predators.
West Indian manatee	This mammal eats abrasive plants that are tough on its molars. So its molars are continually replaced throughout life as they are worn down.
river otter	Unlike its "cousins" that live in the sea and don't move well on land, this mammal's skeletal and muscular structure help it travel on land long distances between waterways.
Florida black bear	A mother will grunt or moan to warn her cubs of danger, letting them know to climb a tree or follow her to safety.
opossum	When it is under a very dangerous threat, this mammal will pretend to be dead. It can stay in this position for several hours.
raccoon	This "masked" mammal eats a wide variety of foods. Its hand-like claws help it grasp food and even garbage can lids.

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