



**PITTSBURGH ZOO
& PPG AQUARIUM**

PA Pride

Table of Contents:

Resources

- Academic Standards
- Background Information
- Vocabulary
- Suggested Reading List
- Teacher Resources
- Related Websites

Pre-Visit Activity

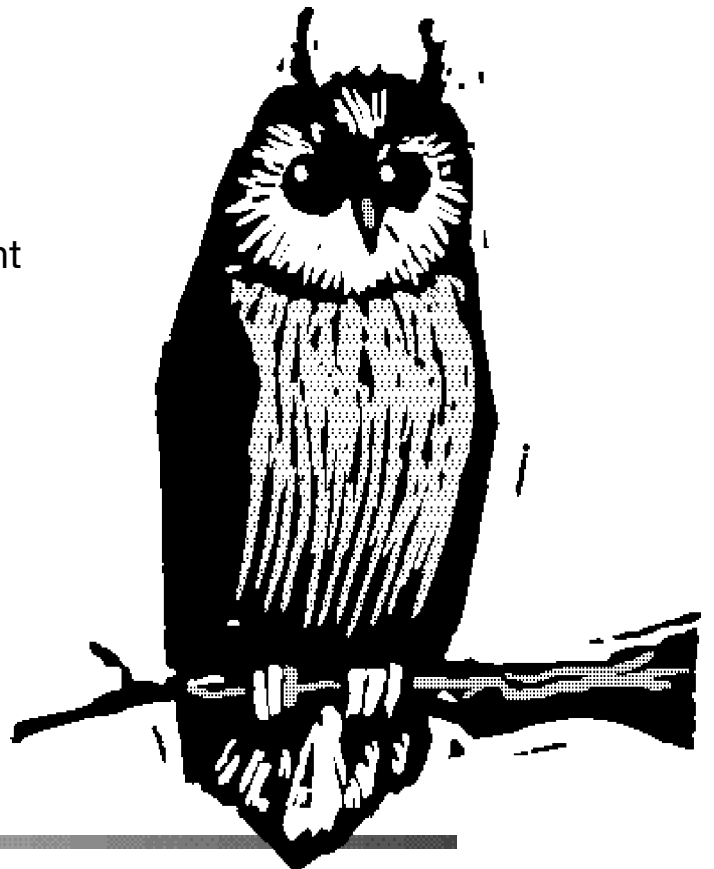
- One Square Foot

In-Zoo Activity

- PA Pride Scavenger Hunt

Post-Visit Activity

- Nominate a PA Animal



Pennsylvania Pride

Academic Standards for Environment and Ecology

4.2. ENVIRONMENTAL HEALTH

- 4. 2. 4 A Identify needs of people.

4.3. ENVIRONMENTAL HEALTH

- 4. 3. 4 B Identify how human actions affect environmental resources.
- 4. 3. 4 C Understand that the elements of natural systems are interdependent.

4.6. ECOSYSTEMS AND THEIR INTERACTIONS

- 4. 6. 4 A Understand that living things are dependent on non-living things in the environment for survival.

4.7. THREATENED, ENDANGERED, AND EXTINCT SPECIES

- 4. 7. 4 A Identify differences in living things that relate to their survival.
- 4. 7. 4 B Know that adaptations are important for survival.

4.8. HUMANS AND THE ENVIRONMENT

- 4. 8. 4 C Explain how human activities may change the environment.
- 4. 8. 4 D Know the importance of natural resources in daily life.

Academic Standards for Science and Technology

3.1. BIOLOGICAL SCIENCES

- 3. 1. 4 A Know the similarities and differences of living things.
-

Pennsylvania Pride

Background Information

PENNSYLVANIA - A STATE OF UNCOMMON WEALTH

Where does the world begin? Right in our own backyards! We don't have to travel the world to find amazing animals; our home state of Pennsylvania is rich in wildlife. One reason for this is the variety of habitats found here.

FORESTS

Pennsylvania forests provide a wide variety of food and shelter for a diverse animal population. Berries, nuts, fish and small animals are found in abundance and give black bears the fat stores they need to get through the winter. Black bears do not truly hibernate, but rather go into torpor, or winter sleep, from which they can be easily disturbed. White-tailed deer can be found nibbling on wild apple trees. In the fall, the bucks will use the trees to sharpen their antlers which they use to vie for a mate. Skunks waddle through the underbrush, their bold markings warning all to steer clear. Any creatures that fail to heed this warning receive an irritating, foul-smelling spray from this master of chemical warfare. At nightfall, owls soar silently in search of food. Their enormous eyes give them the best night-vision on the planet.

MEADOWS

At the forest's edge, the meadows open to reveal a lush habitat for wildlife. Among the goldenrod, bees buzz and butterflies flutter as they carry pollen from flower to flower. At night, fireflies, our state insect, put on a light show to attract a mate. Rabbits nibble grasses and sniff the air. At the first sign of danger, they bolt, zigzagging at up to 40 miles per hour until they reach the safety of a bush or their burrow. Snakes slither over rocks and between tufts of grass in search of food. They use their forked tongues to capture smells which they put against the Jacobsen's organ, a sophisticated scent detector located in the roof of their mouths.

PONDS AND WETLANDS

Ponds and wetlands not only provide a home for animals, but also act as a water filtration system for our groundwater. Most of the ponds in our state were created by nature's master architect - the beaver. Beavers use their chisel-like front teeth to fell trees which they use to block streams, causing them to flood and thus forming ponds. These still waters host millions of mosquito larvae, developing in the water to emerge as the familiar summertime pest. Bats, the only true flying mammals, always stay within a mile of such a water source, attracted nightly to feast on insects. Frogs also take advantage of this plentiful food supply, flicking out long sticky tongues to capture a moving meal. As tadpoles, they eat the developing larvae (young insects) in the water.

WHAT CAN I DO?

Help provide a habitat for local wildlife at school or in your own backyard. Even urban areas can be made more wildlife friendly. Plant a flower garden with native plants such as daisies and black-eyed-susans. Leave a patch of grass unmowed and let it grow long. Put up a feeder or put out a shallow pan of water for the birds. Think twice before squishing bugs in the house - carry them outside on a piece of paper instead. Everything you do to improve the environment, even small things, makes conditions better for wildlife.

Vocabulary

Camouflage - an organism's ability to hide or blend with its surroundings using color, pattern or shape.

Carnivore - an animal that eats other animals.

Conservation - the wise use of natural resources in order to insure continued availability to future generations.

Diurnal - an animal that is mainly active during the daytime.

Ecosystem - an ecological community together with its environment, functioning as a unit.

Forest - an area with many trees and underbrush.

Habitat - the place an animal lives.

Herbivore - an animal that eats only plants.

Hibernation - an extended period of sleep where an organism's metabolism is slowed to an extent that only essential life processes are at work.

Nocturnal - an animal that is mainly active during the night.

Omnivore - an organism that eats both plants and animals.

Predator - an animal that kills and often eats other animals.

Prehensile - a body part that is able to grasp.

Prey - an animal that is hunted or killed for food.

Wetland - a habitat such as a marsh, swamp or bog that produces huge volumes of food in the form of plants both alive and dead. These areas act like filters improving water quality and nurseries for a number of species.

Suggested Reading List

Animal Tracks by Arthur Dorros (Scholastic Inc., 1991).

Beaver's Day by Christine Butterworth (Steck-Vaughn Co., 1990).

The Boastful Bullfrog by Keith Faulkner (Longmeadow Press, 1991).

The Mitten by Jan Brett (GP Putnam's Sons, 1989).

Owl Moon by Jane Yolen (Philomel Books, 1987).

The Owl Who Became the Moon by J. London (Dutton's Children's Books, 1993).

Seasons of a Red Fox by Susan Saunders (Smithsonian, 1991).

The Snake Who Was Afraid of People by Barry Louis Polisar (Rainbow Morning Music).

When It Starts to Snow by Phylis Gershator (Henry Holt and Co., 1998).

When the Earth Wakes by Ani Rucki (Scholastic Press, 1998).

Teacher Resources

The Classroom Teacher's World Animal Encyclopedia by Sherrill B. Folra
(T.S. Denison & Co., Inc., 1995).

The Curious Naturalist by John Mitchell (Prentice Hall Press, 1998).

Pennsylvania Wildlife: A Viewer's Guide by Kathy and Hal Korber (Northwood, 1994).

Ranger Rick's Nature Scope: Trees are Terrific! Ed. by Judy Braus (National Wildlife Federation, 1992).

Tree Homes by Jean Echols (LHS Gems, 1993).

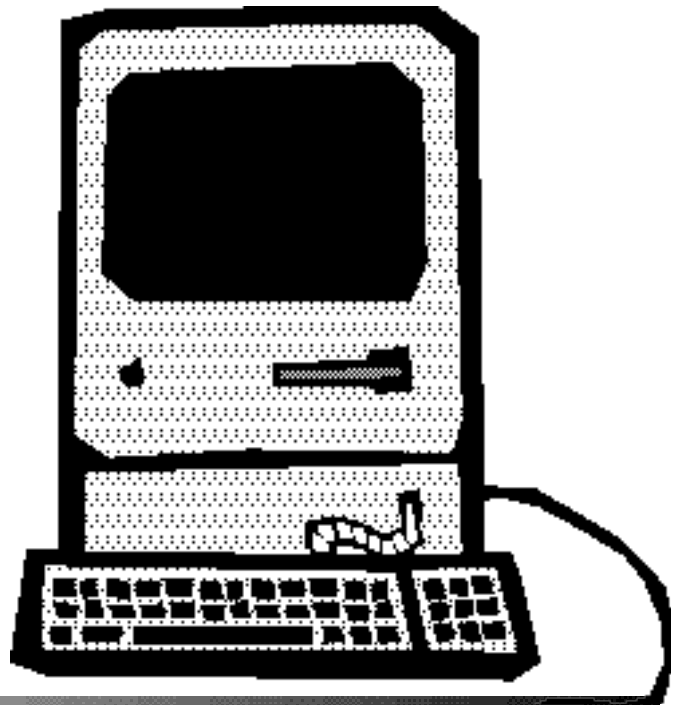


Related Websites

1. **PA Department of Conservation and Natural Resources:** www.dcnr.state.pa.us
2. **PA Department of Environmental Protection:** www.dep.state.pa.us
3. **PA Wildlife Federation:** www.pawildlife.org
4. **Pennsylvania Game Commission:** www.state.pa.us/PA_Exec/PGC
5. **National Wildlife Federation:** www.nwf.org

Just for Kids!

1. **The Animal Alphabet:** www.nps.gov/yell/kidstuff/Alphabet/
2. **KiddoNet:** www.kiddonet.com (*click on the KZoo icon*)
3. **Kratt's Creatures:** www.pbs.org/kratts/index.shtml
4. **National Wildlife Federation:** www.nwf.org/kids/
5. **ZooBooks:** www.zoobooks.com/



One Square Foot

Pre-Visit Activity

Time: two 30 minute sessions

OBJECTIVES:

- TSW observe one square foot of Pennsylvania habitat.
- TSW record observations in pictures or words.
- TSW create a “One Square Foot” book.

MATERIALS:

One of the One Small Square books by Donald M. Silver, 4 rulers per student or group, masking tape, 4 pages of drawing paper per student or group, clip boards, hand lenses, construction paper, stapler, pencils, crayons, markers, field guides (for older students)

PROCEDURES:

ANTICIPATORY SET:

Share a One Small Square book with the class. Discuss what was found in a small area - animals, plants, food, shelter, water, etc. What was found at ground level? What was found on the plants? In the air? Explain that all these things are found even in a small part of the habitat.

DEVELOPMENT OF LESSON:

1. Explain that they will be observing their own square foot of our habitat here in Pennsylvania. Pass out 4 sheets of drawing paper for each book to be made. Have the students label the pages: my square foot (a view of the whole square), plants, animals, my favorite part. Students may work individually or in groups of 3. If they are working in groups, fold the last page into 3 sections so that each student can contribute their favorite part.
2. Pass out rulers and masking tape. Have the students tape the rulers into a square frame. For younger students, you may wish to have this done ahead of time. This will mark their area to observe. Pass out pencils, clipboards, and hand lenses.
3. Go out into the schoolyard or a nearby natural area. Students should disperse and select their own square for observation.
4. Students may use hand lenses to observe the plant and animal life in their square up close. They should observe for at least 20 minutes. While they observe, students should make drawings of what they see. If they are working in a group, each member should have one page to complete, plus their section of “my favorite part.”
5. In the classroom, use crayons or markers to color the drawings. Add written descriptions, if desired. Older students may use field guides to identify the plants and animals they observed.
6. Have the students create a cover for their book. It should include the title, author(s), and illustrator(s). Put the pages in order and staple it together.

SUMMARY:

Share your books with the class. Compare the observations that were made. Were they all the same? How were they different? What does that say about the habitat?

EXTENSIONS:

- Visit another area such as woods or a stream. Use the square foot frames and make observations there. How are the areas different? How are they alike? Create a “One Square Foot” book for this new area.
- Adopt a corner of your schoolyard. Keep it litter free. Encourage wildlife to live there by making some improvements such as the ones found under “What Can I Do?” in the background information.
- Expand your vocabulary by completing the Pennsylvania Pride Word Search.



PA Pride Scavenger Hunt

In-Zoo Activity
Time: 45 minutes

OBJECTIVES:

- TSW be able to identify animals that live in Pennsylvania.
- TSW be able to identify characteristics of Pennsylvania animals.

MATERIALS:

“Pennsylvania Pride Scavenger Hunt” sheet (younger students), pencils or markers, clipboards or hard writing surface, blow-up beachball globe

PROCEDURES:

ANTICIPATORY SET (1 OF 3)

The zoo class, “Pennsylvania Pride”, may be taken prior to the scavenger hunt.

DEVELOPMENT OF LESSON:

1. After passing out the clipboards and pencils, have students pair up. Depending on the age and level of your students, this activity may be completed without partners. Chaperones may be included in this activity, if appropriate.
2. Starting at the sea lion exhibit in Kids’ Kingdom, give a guided tour of the animals seen at each exhibit. The graphics will help with this or use the background information included in this packet. Casually mention in your tour the features on the scavenger hunt the students are searching for. If your class is older or has completed the Pennsylvania Pride class, you can make the “hunt” more challenging by not giving “hints” during your tour.

SUMMARY:

Discuss the answers with the students at the end of your tour, either in Kids’ Kingdom at the picnic tables next to the camel or when you return to your school.

PA Pride Scavenger Hunt

FIND AN ANIMAL THAT:

1. is nocturnal
(active at night) _____
2. is found in
Pennsylvania _____
3. uses a foul-smelling
spray to defend itself _____
4. has antlers _____
5. builds a lodge _____
6. uses its tail to signal
danger to the herd _____
7. has quills _____
8. has webbed feet
for swimming _____
9. has camouflage _____
10. has feathers _____

Helpful Hints

Teachers: Please include this word bank if the scavenger hunt is too difficult for your students.

Hint: The animal can be used more than once.

Otter Deer Skunk Beaver Duck Rabbit Porcupine Barn Owl Turkey

Nominate an Animal

Post-Visit Activity

Time: at least two 30 minute sessions

OBJECTIVES:

TSW identify Pennsylvania's natural symbols.

TSW research a Pennsylvania reptile or amphibian.

TSW nominate a Pennsylvania reptile or amphibian to be the newest natural symbol.

MATERIALS:

"Natural Symbols" page, "Pennsylvania Reptiles and Amphibians" list, field guides for amphibians and reptiles

PROCEDURES:

ANTICIPATORY SET:

Review what the students learned about Pennsylvania wildlife in their class at the Pittsburgh Zoo & PPG Aquarium. Include a discussion of Pennsylvania's climate and how to make your backyard more animal-friendly. Brainstorm names of wild animals they often see around them (in parks, their backyard, the woods, etc).

DEVELOPMENT OF LESSON:

1. Pass out "Natural Symbols" or make it into an overhead and show it to the class.
2. Ask the students what a natural symbol is. Discuss why they think these symbols were chosen to represent Pennsylvania.
3. Point out that Pennsylvania does not have a state reptile or amphibian. What criteria should be used to select one? Have the students brainstorm criteria for selection. List them on the board. Make copies of this list for later use by students.
4. Tell the students that they are going to nominate a reptile or amphibian to become one of Pennsylvania's natural symbols. Students may work independently or with a partner. Have students select a reptile or amphibian native to Pennsylvania to learn more about. They may choose from the list following the lesson or from field guides.
5. Using the criteria for nomination they generated as a guide, have the students research their reptile or amphibian. They should utilize research materials appropriate to their age and ability level. If your library has internet access, encourage using on-line sources as well.
6. Have students use their research to write a short nomination speech telling why their animal should be Pennsylvania's newest natural symbol.

SUMMARY:

Present the nomination speeches to the class. Vote for the reptile and amphibian with the strongest case. Discuss what made them the best candidate.

EXTENSIONS:

- Hold a school-wide election! Make campaign posters for the candidate species. Hang them in the hall ways. Put "radio spots" on the morning announcements. Present the nomination speeches to your school and have the students vote.
- Write a letter to the Pennsylvania Fish and Boat Commission nominating your species to be a state symbol.
- Investigate other state symbols such as the state flag or motto. Get the story behind the symbol - find out why they were chosen. What other state symbols do we have?

Pennsylvania Reptiles and Amphibians

(partial listing)

* indicates species is threatened or endangered in Pennsylvania

AMPHIBIANS

SALAMANDERS AND NEWTS

dusky salamander
eastern mud salamander*
eastern newt
four-toed salamander
green salamander*
hellbender
Jefferson salamander
long-tailed salamander
marbled salamander
mudpuppy
red-backed salamander
seal salamander
slimy salamander
spring salamander
two-lined salamander

FROGS AND TOADS

American toad
bullfrog
eastern spadefoot
green frog
mountain chorus frog
New Jersey chorus frog*
northern leopard frog
pickerel frog
spring peeper

SNAKES

black racer
eastern black rat snake
eastern garter snake
eastern hognosed snake
eastern massasauga*
eastern milk snake
Kirtland's snake*
northern copperhead
northern redbelly snake
northern ringneck snake
northern watersnake
rough green snake*
smooth green snake
timber rattlesnake*

TURTLES

bog turtle*
eastern box turtle
map turtle
musk turtle (stinkpot)
painted turtle
red-bellied turtle*
smooth softshell turtle
snapping turtle
spiny softshell turtle
spotted turtle
wood turtle

LIZARDS

broad-headed skink
coal skink
five-lined skink





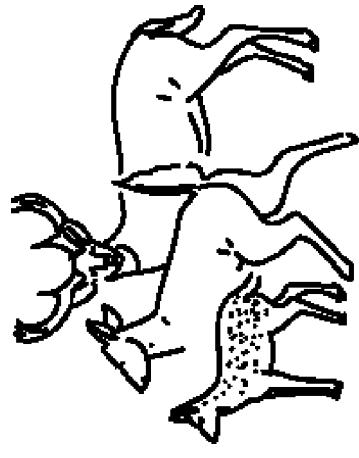
FIREFLY (LAMPYRIDAE)

chosen as the state insect April 10, 1974



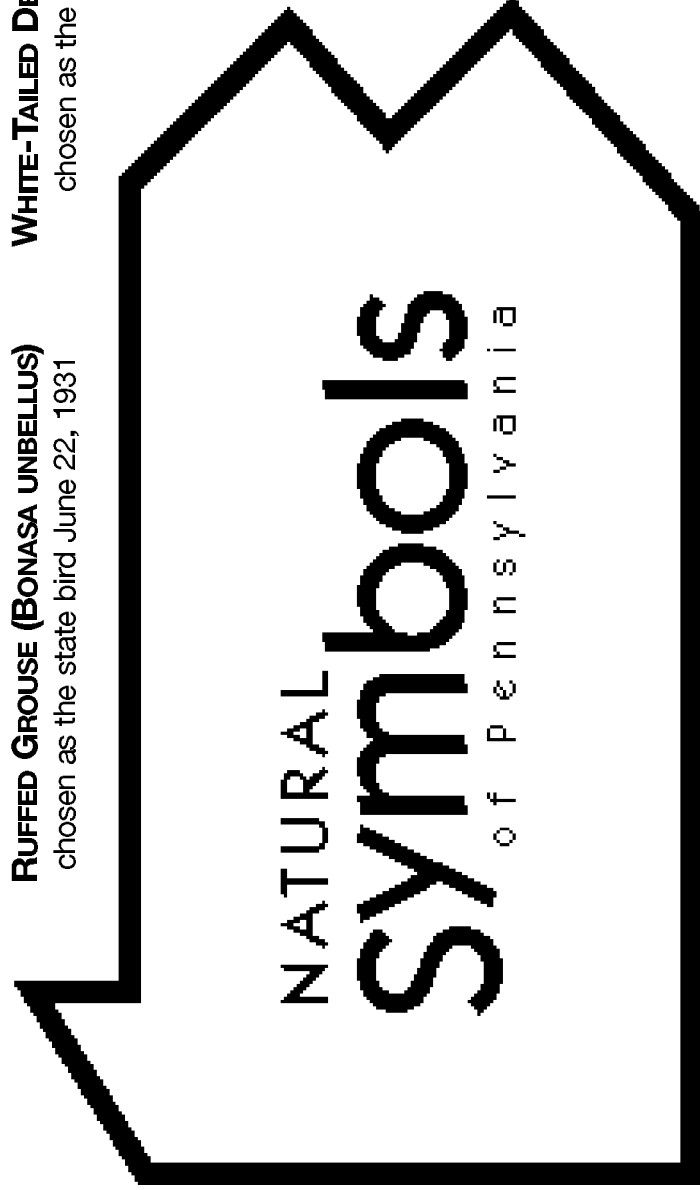
RUFFED GROUSE (BONASA UNBELLUS)

chosen as the state bird June 22, 1931



WHITE-TAILED DEER (ODOCOILEUS VIRGINIANUS)

chosen as the state animal October 2, 1959

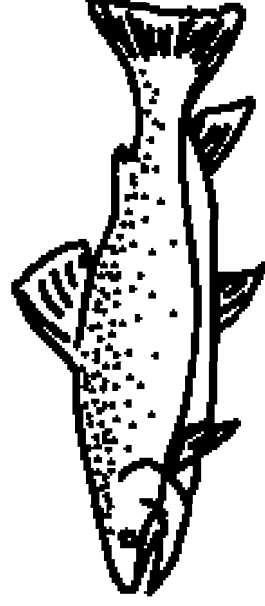


NATURAL
Symbols
of Pennsylvania



MOUNTAIN LAUREL (KALMIA LATIFOLIA)

chosen as the state flower May 5, 1933



BROOK TROUT (SALVELINUS FONTINALIS)

chosen as the state fish March 9, 1970



EASTERN HEMLOCK (TSUGA CANDENSIS)

chosen as the state tree June 22, 1931

