

VANISHING ACTS: TREES UNDER THREAT



Purpose of this Guide

- To help teachers guide their Grade 6 - 8 students through the Vanishing Acts exhibit.

How to Use This Guide

- In this guide you will find lesson plans, activities, and guided exhibit viewing questions specifically designed to help middle school students understand and appreciate the Vanishing Acts exhibit.
- Below is a list of the activities for students in 6th – 8th grades.
- Next to the title of the activity is a recommendation for when this activity might be most beneficial for your students in relation to their visit to the Vanishing Acts exhibit.

Included In This Guide

- | | |
|---------------------------------------|--------------------|
| • Nature in Your Backyard Lesson Plan | Pre- or Post-visit |
| • Ideas for Related Activities | Pre- or Post-visit |
| • Research Activity | Pre- or Post-visit |
| • Guided Exhibit Viewing Questions | During visit |
| • Recycling Counts | Pre- or Post-visit |
| • Tree Haiku | Post-visit |

National Science Content Standards Addressed

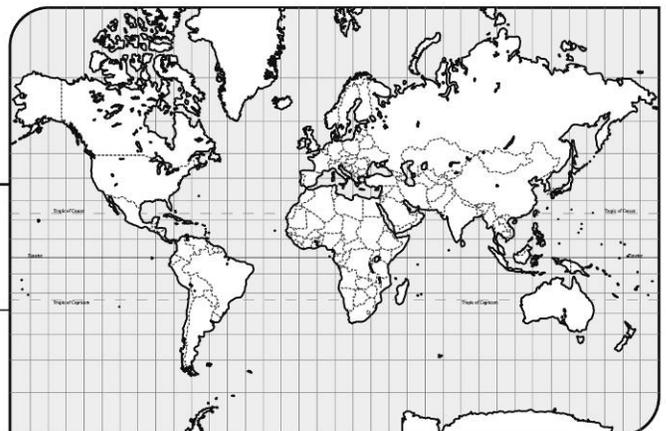
- Science Inquiry: Abilities necessary to do scientific inquiry
- Life Science: Structure and function in living systems
- Life Science: Populations and ecosystems
- Life Science: Diversity and adaptations of organisms
- Science in Personal and Social Perspectives: Populations, resources, and environments

Time

One 45 minute class period

Teacher's Guide

Grades 6-8



VANISHING ACTS: TREES UNDER THREAT



Lesson Plan Summary

Before or after you visit the Vanishing Acts exhibit, explore endangered trees and plants in your local area. This Internet based research activity is a great way to help students explore the many valuable resources available on-line for different local, national, and international conservation efforts.

Key Messages

- Plants and animals are threatened/endangered for a variety of reasons.
- Many threatened/endangered plants and animals are very important.
- Conservation efforts can help threatened/endangered plants and animals.

Guided Inquiry Questions

Use these questions to guide inquiry before and during the lesson:

- Why is it important to help threatened and endangered species?
- Why are trees important in the environment?

VANISHING ACTS: TREES UNDER THREAT



NATURE IN YOUR BACKYARD LESSON PLAN

ACTIVITY: RESEARCHING LOCAL THREATENED AND ENDANGERED PLANTS AND ANIMALS (:45 MINUTES)

Supplies Needed

- Computers and Internet access for students – if this is not available, this lesson plan can be modified to be done as a combination of homework and class work.
- Research Activity Page (copies for students)

Step 1: Select a local threatened or endangered plant or animal to study

Most states have a state department of natural resources or department of conservation. Visit their website and do a search for “threatened and endangered plants and animals.” For example, Illinois has the department of natural resources at <http://www.dnr.illinois.gov>. Visiting their website and typing the prompt into the search box, the first search result is a checklist. This will be the case for most states. All checklists are arranged a bit differently, but will have species names of endangered and threatened plants and animals. You can either select one for each of your students or provide your students with the list and have each student select his/her own species.

Step 2: Research Activity

Have students complete the “research activity” page for their plant or animal. They should, as much as possible, focus on local issues and sources. For example, research for the Blue Jasmine (*Clematis crispa*) in the state of Illinois may provide different answers than research on the Blue Jasmine in Missouri. However, sometimes specific information is challenging to find on a particular species in a particular state.

A few notes:

- The state department of natural resources or department of conservation is a great starting place for this project.
- This is a great opportunity to discuss with students about the reliability of some websites and the inaccuracy of others...you can find some really interesting websites on the conservation efforts of the passenger pigeon, for example, but it is extinct!

VANISHING ACTS: TREES UNDER THREAT



Some good websites to get started:

- <http://plants.usda.gov/threat.html> (United States Department of Agriculture threatened and endangered plants)
- <http://www.dnr.illinois.gov/> (Illinois Department of Natural Resources)
- <http://mdc.mo.gov/discover-nature> (Missouri Department of Conservation)
- <http://dnr.wi.gov/> (Wisconsin Department of Natural Resources)
- <http://www.in.gov/dnr/> (Indiana Department of Natural Resources)

IDEAS FOR RELATED ACTIVITIES

- Extend this activity by having students make their own “Vanishing Acts” posters and put them on display in your classroom or school. The students can get really elaborate with presentation boards and resources from local forest preserves, state and county parks, etc.
- Have students write an essay about the threatened or endangered species they researched.
- Contact a local forest preserve, garden or arboretum and participate in a conservation project. This is a great link to the Vanishing Acts exhibit...many locations are constantly looking for help removing exotic and invasive plant species or restoring natural areas.

VANISHING ACTS: TREES UNDER THREAT



RESEARCH ACTIVITY

Name: _____

1. List the three websites you used:

a. _____

b. _____

c. _____

2. What is the common name of your plant or animal? _____

3. What is the scientific name of your plant or animal? _____

4. Describe your plant or animal. Include a physical description and a description of its behaviors and habits (for an animal) or phenology (for a plant). Think about the species descriptions you read in the Vanishing Acts exhibit and try to include similar detail.

5. In your state, is your plant/animal currently listed as threatened or endangered?

6. What has caused the population of your plant/animal to be considered threatened or endangered? Think about the different reasons listed in the Vanishing Acts exhibit, habitat destruction, over harvesting, invasive species, etc. Explain your answer.

7. What conservation efforts are underway to help your plant/animal?

VANISHING ACTS: TREES UNDER THREAT



-
8. Why is your plant or animal important? Think about the explanations you saw in the Vanishing Acts exhibit which explained the importance of the different trees.

VANISHING ACTS: TREES UNDER THREAT



GUIDED EXHIBIT VIEWING QUESTIONS

Name: _____

1. What are the four reasons we should value threatened and endangered trees?

- a. _____ c. _____
b. _____ d. _____

2. How many known tree species are threatened with extinction? _____

3. What is the difference between a tree species that is “threatened” and a species that is “endangered”?

4. What tree has been used to create a medicine that helps treat cancer?

5. What is the name of the oldest living thing on earth? What type of tree is it?

6. List five threats to endangered and threatened trees.

- a. _____ d. _____
b. _____ e. _____
c. _____

7. Dawn redwood trees are now cultivated and grown throughout the world. Knowing this, why would it make a difference to preserve the sole remaining wild stand of dawn redwoods?

8. Why do scientists think that the Monkey Puzzle tree evolved to have spiny, scale-like leaves?

VANISHING ACTS: TREES UNDER THREAT



9. Is it all right to let a species go extinct if we don't know any benefits from it? Explain.

10. The trees in this exhibit are from all over the world. However, several are from right here in the United States. Are any of these trees from your state or near your region? If so, which ones?

11. What are two things you can do to help trees?

a. _____

b. _____

VANISHING ACTS: TREES UNDER THREAT

RECYCLING COUNTS

How many trees can we save with our recycling?



A Number

How many pounds of paper did you collect for recycling?

You can get this number in a couple different ways:

- Many places that recycle have scales and can tell you exactly how many pounds of paper products you provide for recycling.
- You will probably need to request this number specifically. Check with the recycling facilities at your school to find out how to obtain the pounds of recycled paper from your school.
- But not all is lost if you don't have a formal recycling program at your school! Have your class recycle for a week. At the end of the week bring in a bathroom scale. Weigh one student. Then have that student hold the bag or bags of paper you collected for recycling. The difference is the pounds of paper you are going to recycle!

A Tree

The next thing we need is to know how many pounds of paper it takes to save a tree. This is challenging. Different types of paper require different amounts of tree pulp, so there is no easy answer. However, we can make some generalizations that help us get close to the answer.

- 1 ton (2000 pounds) of uncoated non-recycled printing and office paper uses 24 trees
- 1 ton of 100% non-recycled newsprint uses 12 trees
- A generally accepted average is that recycling 1 ton of paper saves up to 17 trees

The Math

To keep it simple, we are going to guess (hopefully incorrectly) that you are recycling 100% non-recycled paper

- We know that 2000 pounds = 17 trees
- If we divide 2000 by 17 we discover that
- 117.647 pounds = 1 tree
- If we divide "pounds of paper" by 117.647 we can find out how many trees your class will save.
- For example: If your school recycled 600 pounds of paper, your equation would look like this:
 $600 \div 117.647 = 5.1$ which would mean you saved 5.1 trees.

At this rate, how many trees will your class/school save in a year? To calculate this, you also need to know how long it took you to collect the paper for recycling!

VANISHING ACTS: TREES UNDER THREAT



TREE HAIKU

Name: _____

Haiku is a form of Japanese poetry. Traditional haiku poems link nature to human life. A haiku has no rhyming scheme and 17 syllables in 3 lines, 5-7-5. Traditional haiku indicate a season using nature words: cherry blossoms indicate spring, snow indicates winter. Sometimes these nature words are obvious and sometimes they are more subtle...but they always add more meaning to the poem through symbolism.

Some of Matsuo Basho's haiku:

*Won't you come and see
loneliness? Only one leaf
from the *keiri* tree.*

*On a withered branch
A crow has alighted:
Nightfall in autumn.*

*April's air stirs in
willow-leaves . . . a butterfly
Floats and balances*

*The oak tree:
not interested
in cherry blossoms.*

Matsuo Basho was a famous Japanese writer who lived from 1644-1694. He helped develop haiku as a form of poetry. He used haiku to comment on everyday human feelings and experiences.

Matsuo Basho wrote in Japanese, so the translated English versions of his Haiku don't always follow the 5-7-5 syllable pattern.

Think about the endangered and threatened trees you saw in the Vanishing Acts exhibit. Write a haiku about one of the trees you found particularly interesting. Think about what the trees mean to you and to other people around the world. Use nature imagery to try to convey those feelings.

VANISHING ACTS: TREES UNDER THREAT



This traveling exhibit is
made possible by a grant from:



© 2011. The Morton Arboretum