Adopt-a-Kentucky-Tree

4NF-1OLP

Overview

This lesson focuses on the importance of community trees. Using the Urban Forest Initiative's (UFI) Adopt-a-Kentucky-Tree program youth will learn about the basics of tree identification, tree measurement, environmental and social benefits of trees, and creative writing skills relating to trees.

The objectives of the Adopt-a-Tree lesson are that youth will:

- Familiarize themselves with basic concepts required for tree identification and tree measurements.
- Understand the environmental and social benefits of trees.
- Understand the importance and roles of trees in our communities.
- Be introduced to the beauty and benefits of trees.

Skill/Grade Level

The intention of this lesson is to be utilized for any grade level with modifications based on the needs of the audience.

Core Area

Kentucky 4-H Natural Resources Program

Time Needed

45 minutes per activity - 3 hours total (time may vary depending on group size)

Materials Needed

- Outdoor location with variety of tree species
- Tape measure
- Notebook
- Pen/pencil
- Camera
- Web access
- Adopt-a-Kentucky-Tree Field Notebook (provided at end of lesson)

Background Information

Why trees?

An important part of this lesson is demonstrating to youth the importance of trees in our communities and environments. Every tree you pass in your favorite park or in your own backyard plays an important role in the environment.

This activity will guide youth through the process of adopting multiple trees, while also introducing the basics of tree ID, the environmental benefits of trees and their connection to human well-being.

Introduction to the Urban Forest Initiative's Adopt-a-Kentucky-Tree Program

Each activity in this lesson teaches youth a different skill or topic relating to trees using the Urban Forest Initiative's Adopt-a-Tree online form. Youth will learn about the relevant topic, find a tree for that specific activity, complete the relevant activity, and then complete the steps to adopt that tree. In the end, youth will have adopted eight trees. We suggest adopting each tree as a group, instead of having each youth adopt a different tree. These activities can also be modified slightly so that youth can complete them individually, on their own time, and can adopt trees at different sites.

The Adopt-a-Tree program was created by the Urban Forest Initiative in 2015, and allows tree lovers to join a community of tree keepers across the state. The Urban Forest Initiative collects this information to map all trees adopted across the Commonwealth.

The Adopt a Kentucky Tree website can be found online at http://ufi.ca.uky.edu/adopt-a-tree.

Adopting a tree gives you and your 4-Hers a chance to learn more about the specific ecosystem benefits of your adopted tree, but it doesn't stop there! Your tree can serve as a personal connection to topics like ecosystems, the water and carbon cycles, tree health, and climate change.

Adopt-a-Kentucky-Tree

Developmental Outcomes

Short Term

- Youth will explore their spark in natural resources.
- Youth will gain knowledge and develop skills in natural resources.

Medium Term

- Youth will practice skills learned, including tree identification, tree measurement, recordkeeping, teamwork, and communication.

Long Term

- Youth will develop a long-term awareness of the environment and the impact an individual may have on their environment.

Background Information

There are many benefits and reasons to adopt:

- Learn about the ecosystem and health benefits trees provide.
- Learn how trees are measured, including diameter at breast height (DBH).
- Connecting to basic math, relating circumference to diameter.
- Take time to connect with and appreciate the trees around you.
- Share the love for trees throughout Kentucky.

As you prepare your lesson, you can use the online Project Learning Tree glossary as a helpful resource. https://www.plt.org/glossary-index/

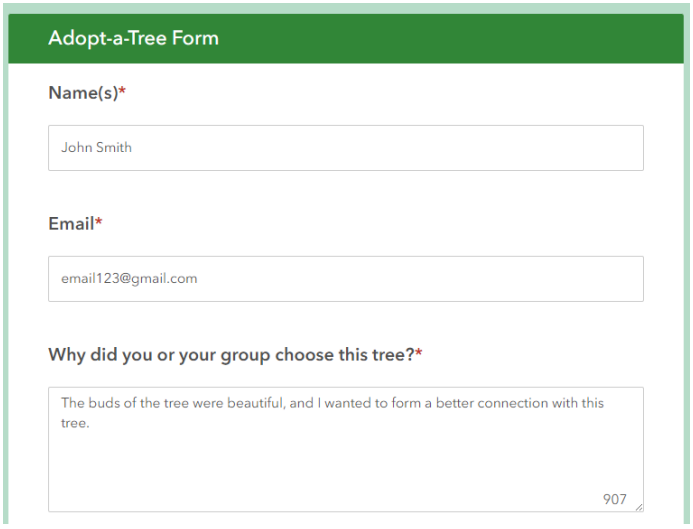
Walking through the Adopt-a-Tree Online Form

The Adopt-a-Tree online form is available online at https://tinyurl.com/ufi-adopt-a-tree.

Safety first! Before measuring any tree or taking youth outside, be mindful of the weather and check the trees and area for hanging branches, poison ivy, or any harmful plants or animals.

On the Adopt-a-Tree online form, youth will first enter the names of all the individuals in their group, as well as a few sentences about why their group chose the tree they are adopting. The form will also ask that an email address be entered. This can be the 4-H agent's or volunteer leader's email address. See Image 1.

Image 1.



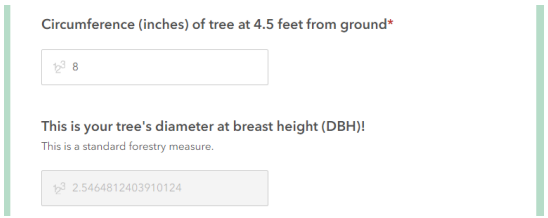
Adopt-a-Kentucky-Tree

Background Information

Tree Diameter Measurement

On the Adopt-a-Tree online form, youth will enter the circumference. The size of a tree's trunk is proportional to the height, volume, and canopy of the tree. Tree size also determines trees' ability to cool cities and capture stormwater. A tree's trunk is measured at a standard height of 4.5 feet, or at approximate breast height, which is called DBH (diameter at breast height). For this program, you will be using a regular measuring tape to measure the circumference of the tree in inches. To do this, youth will first measure from the base (or bottom) of the tree on the uphill side if the tree is growing on a slope up to 4.5 feet. At the 4.5 feet point, youth will measure around the trunk of the tree and record that measurement in inches on the online form (Image 2). The online form's software will use the circumference measurement to compute DBH. To determine diameter, circumference is divided by the value of pi (3.14).

Image 2.



Tree Identification

When adopting a tree, you are asked to identify the species (Image 3). The project's activities will teach youth the difference between conifer versus deciduous trees, simple versus compound leaves, and direct students to the many resources available online to assist with Tree identification. Resources to assist with tree identification include:

- 4-H Identifying Kentucky's Trees Video
- UK Forestry Tree Identification Website
- 4-H Forestry- Introducing Yourself to Trees Factsheet
- 4-H Forestry- Tree Tips Handout
- Dichotomous Key Book: Tree Finder: A Manual for Identification of Trees by their Leaves (Eastern U.S.) by May Theilgaard Watts (available for purchase online)

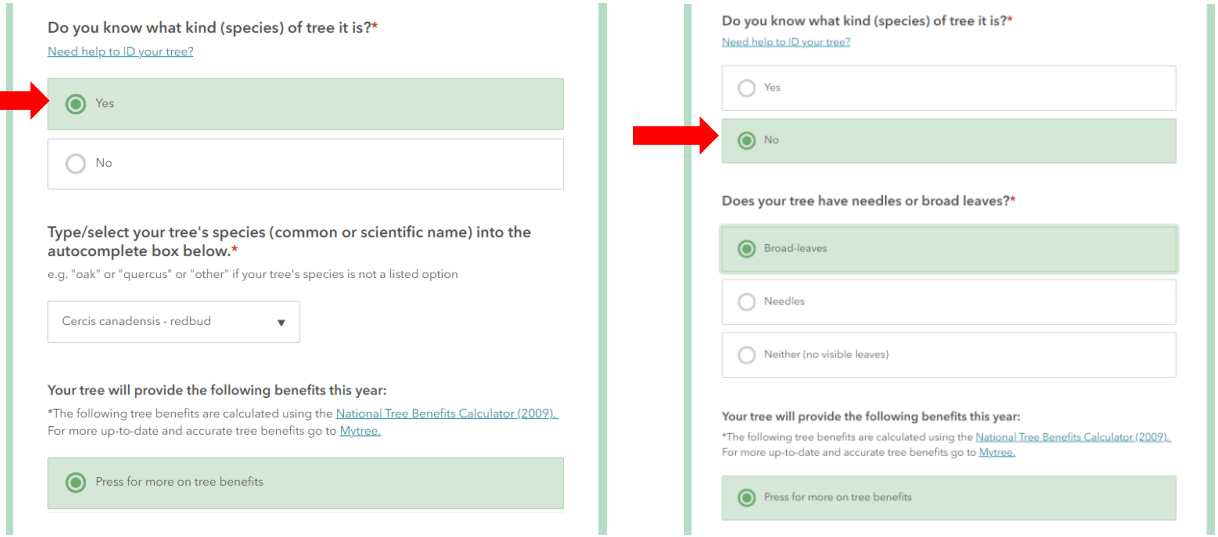
There are also apps available that can help identify species from photos, such as Seek by iNaturalist and PictureThis.

Adopt-a-Kentucky-Tree

Background Information

If you know the kind (species) of tree it is, you will be prompted to select the tree's species. If you do not know what kind (species) of tree it is, you will be asked if the tree has broad-leaves, needles, or no visible leaves (Image 3).

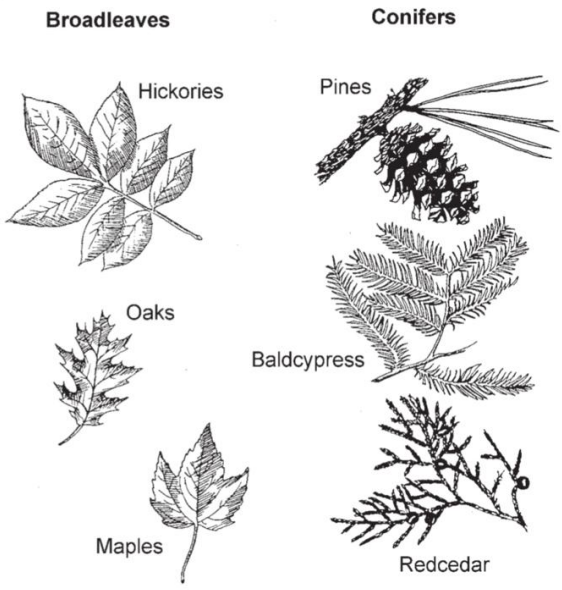
Image 3.



Deciduous versus Coniferous

Deciduous trees lose their leaves each year, and conifers (also known as evergreen) keep their leaves throughout the year. Deciduous trees, or broadleaves, can have many different types of flat leaves, and they produce fruits containing their seeds. Coniferous trees have needle or scale leaves, and their seeds are cones. To introduce youth to the difference between deciduous and coniferous trees, it may be helpful to talk about their memories of colorful fall leaves or playing in piles of leaves during the fall. Have them recall that only some trees change colors and drop their leaves in the fall. See Image 4 (image obtained from 4-H Forestry – Introducing Yourself to Trees Factsheet).

Image 4.



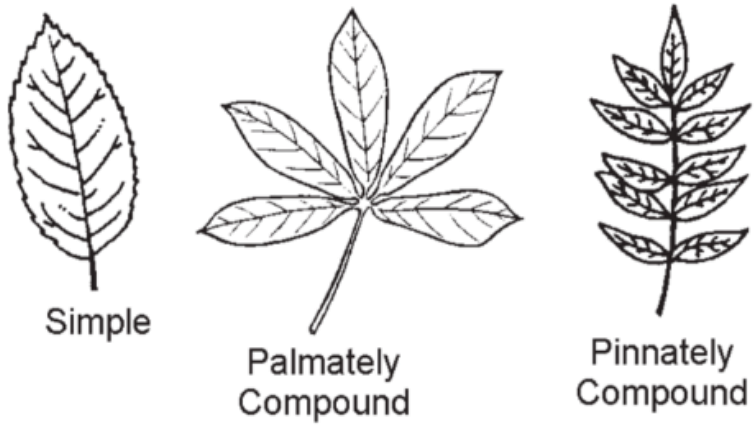
Adopt-a-Kentucky-Tree

Background Information

Leaf Form: Simple versus Compound

Leaf form can be simple or compound. A simple leaf has only one blade, and this leaf could be lobed or divided. A compound leaf is made up of 2 or more separate leaflets and can be palmately or pinnately compounded. Palmately compound leaves spread out in a group, such as the fingers from your palm. Pinnately compound leaves are paired along the stem and appear similarly to a feather. See Image 5 (image obtained from 4-H Forestry – Introducing Yourself to Trees Factsheet).

Image 5. Leaf Form: Simple versus Compound



Leaf Arrangement

Leaves on a tree can grow in different arrangements. Leaves might grow directly across from each other (opposite), one after another (alternate), or in a circle around the twig (whorled). See Image 6 (image obtained from 4-H Forestry – Introducing Yourself to Trees Factsheet).

The opposite leaves are across from one another in pairs. The tree types in Kentucky with opposite arrangement are maples, ashes, dogwoods, and buckeyes. These can be remembered with the acronym MADBUCK (see Image 7).

Alternate leaf arrangement does not have pairs, instead one leaf occurs on one side, and then another leaf occurs at some distance down from the last leaf.

Whorled arrangement is when leaves come out in a circle from the twig.

On a branch, locate the bud. The bud is the location of the new growth for the next year. Buds can be small, large, rounded, pointed. Each tree has its own characteristic bud. By locating the bud on the stem. You have found the junction between the leaf and the stem. The bud is the base of the leaf. From here you can determine if the leaf is simple or compound.

Adopt-a-Kentucky-Tree

Background Information

Image 6. Leaf Arrangement

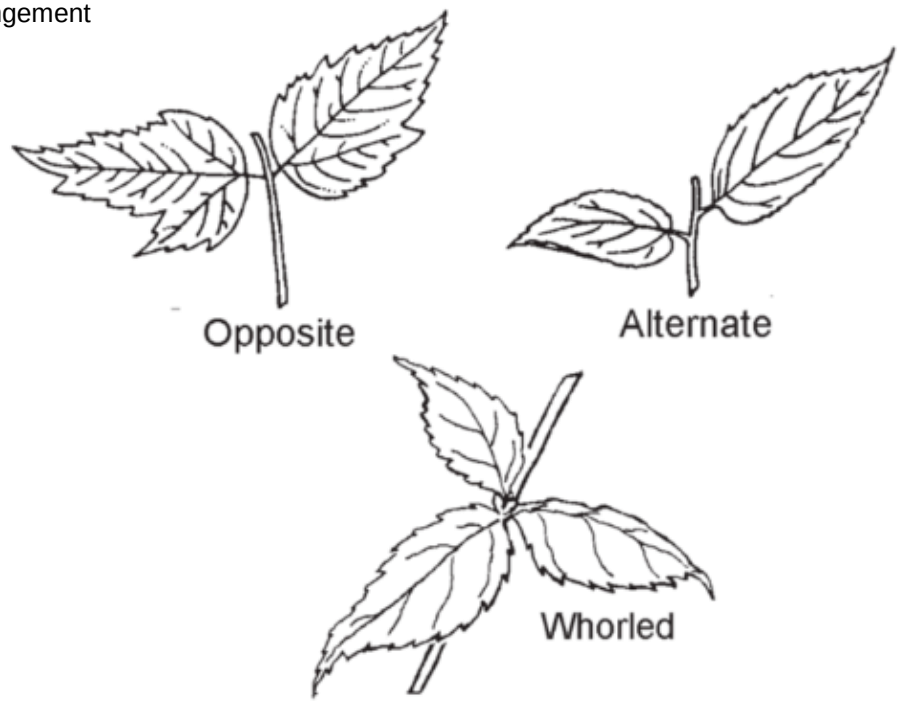


Image 7. MADBUCK Acronym for tree types in Kentucky with opposite leaf arrangement.

M - Maple

A - Ash

D - Dogwood

Buck - Buckeyes

Adopt-a-Kentucky-Tree

Background Information

Environmental Benefits Overview
Trees provide many benefits to the ecosystems around them.

Water Trees are very important for keeping our water clean. They absorb rain, help recharge groundwater supplies, cool the water, absorb pollutants carried in water, reduce flooding, slow stormwater runoff, help prevent soil erosion, and balance the water cycle, giving us a steady water supply.

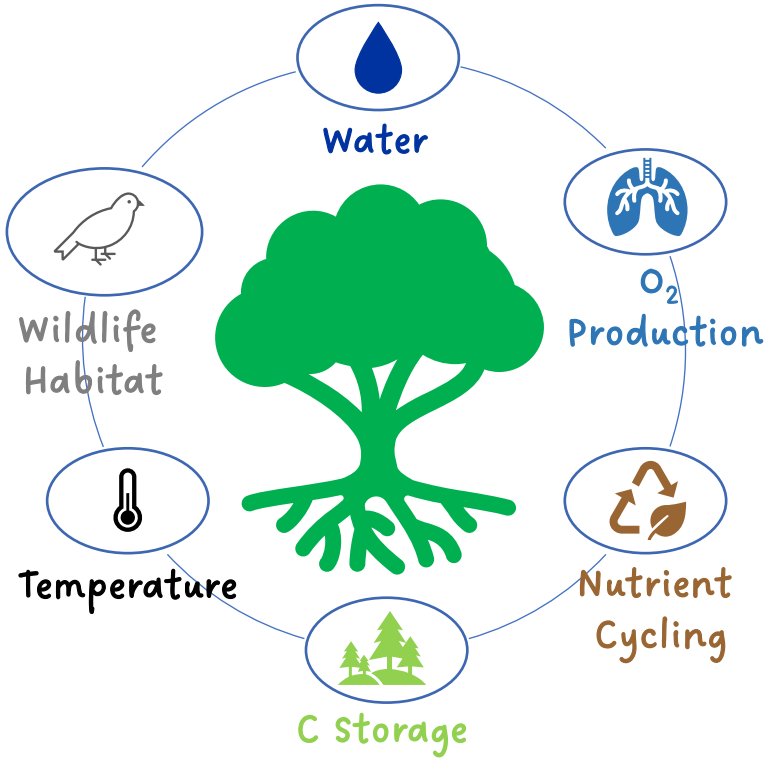
Oxygen Production Through photosynthesis, trees take in carbon dioxide and release oxygen, which we need to breathe.

Nutrient Cycling Trees take in nutrients from the soil through their roots and move them to their leaves, branches, and trunk. When a tree dies or parts of it fall and decay, these nutrients go back into the soil and air. This process helps keep the soil healthy and supports new plant growth.

Carbon Storage Trees absorb carbon dioxide and store it in their wood, helping to reduce greenhouse gases.

Temperature Regulation and Rainfall Trees take in and release thousands of gallons of water each day through their roots and leaves in a process called transpiration. In forests, this large movement of water can affect local temperatures and yearly rainfall. Trees also provide shade and are can be a windbreak which can also affect local temperatures.

Wildlife Habitat Trees provide food, shelter, and water for many animals, supporting biodiversity.



Adopt-a-Kentucky-Tree

Background Information

Environmental Benefits Specific to Online Form

The online form specifically highlights the ability of trees to intercept stormwater, reduce carbon dioxide, and to conserve energy (see Image 8).

Trees can absorb and reduce stormwater runoff by capturing and holding the water in their leaves and branches. They use some of the water and release the rest back into the atmosphere. (Note stormwater is rain or snowmelt that runs over surfaces such as rooftops, driveways, and sidewalks. Information about stormwater is available online and from your county Extension office titled HENV-203 Stormwater.)

Trees can also reduce carbon dioxide because they remove it from the air and store it in their wood. Carbon dioxide is a greenhouse gas that contributes to climate change. When trees remove carbon dioxide from the air and store it in their wood, they help lower the amount of this gas in the atmosphere.

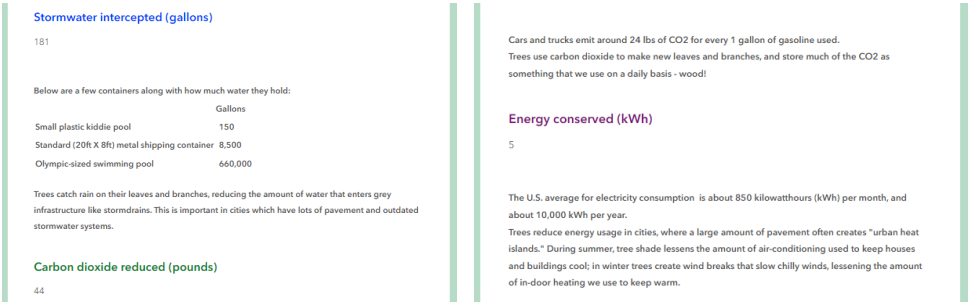
Trees can conserve energy by the shade they create, which reduces the amount of air-conditioning used in a home or building. In the winter, they can create a wind break which can help reduce the use of indoor heating.

For these reasons, it is important that communities have a variety of sizes of trees. Bigger trees have more benefits, but smaller growing trees are also important for the future to replace larger trees when they die.

It is also important to have biodiversity in communities, making sure that many species are present. This will create a more climate resilient tree canopy, as well as making sure that the ecosystem is balanced. (The canopy is the forest layer made up of leaves and branches of trees and shrubs.)

Trees act as habitats and are homes to many other living creatures. Biodiversity of trees makes sure that all other living things will have a habitat and will also be able to thrive in this environment.

Image 8.



Social Benefits

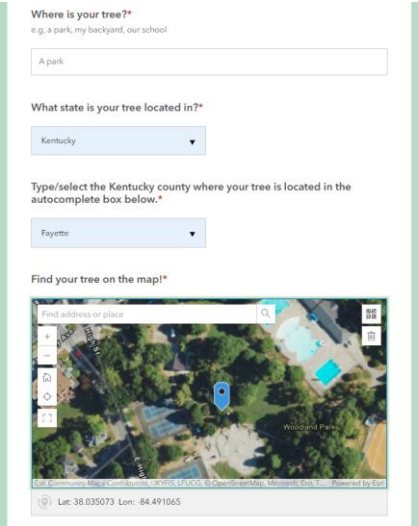
Trees act as important tools in building a connection with nature and in creating a sense of place. Adopting and spending time with a tree fosters a connection with that tree and with that place. These relationships and the time spent with trees allow youth to develop connections with the environment around them. They will learn the value of trees in their communities and understand how to become a defender of trees.

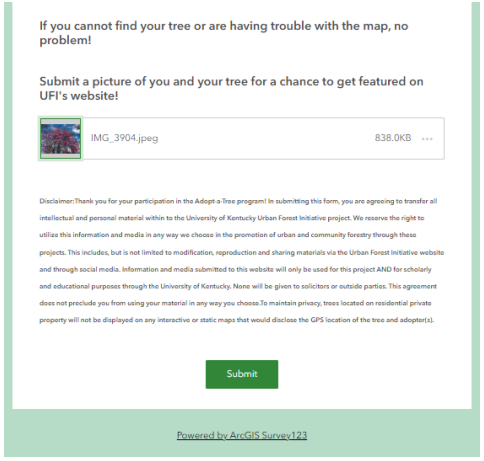
Image 9 shows the last few steps in adopting a tree. You will be asked to describe where your tree is, list the county, and have the option of mapping the specific point of your tree. You will then upload an image of your tree. After submitting, you will see a confirmation screen with a green check mark.

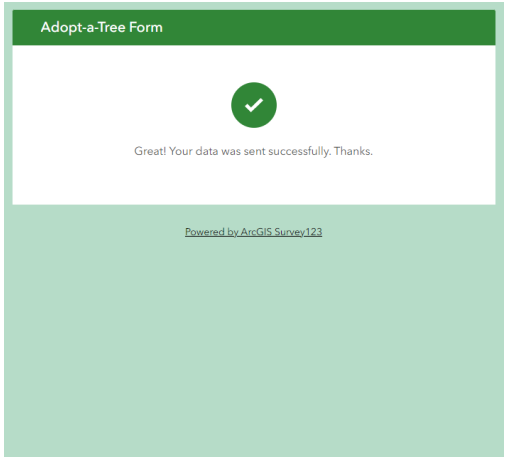
Adopt-a-Kentucky-Tree

Background Information

Image 9.







Activity 1: Adopt Your Favorite Tree!

See Materials needed on the first page of this lesson.

Getting Ready

This activity focuses on the social connection with trees and is an introduction to the Adopt-a-Tree online form.

1. Print out one copy of the Adopt-a-Kentucky-Tree Field Notebook for each 4-Her to use for each activity (Activity #1 - #5).
2. Find a space with a variety of species of trees, where youth will be able to safely walk. Remember safety first. When taking youth outside be mindful of the weather and check the trees and area for hanging branches, poison ivy, or any harmful plants or animals.
3. Review the *Social Benefits* background information, as well as information on completing the online adopt a tree form.

Do the Activity

1. Take the group outside to an area with multiple trees. Ask the group to pick one tree (for the whole group). Have each 4-Her walk up to feel their tree's bark and leaves.
2. Ask them why they were drawn to this tree. What do they like about the tree? How does the tree make them feel?
3. Give each 4-Her their Adopt-a-Kentucky-Tree Field Notebook and have them write 10 words/phrases to describe how the tree makes them feel in the notebook (on page 2). Upon completion, ask them to share several from their list. Working together, write a story or poem using words from all the youth (optional).
4. As a group, follow the steps to adopt the tree using the Adopt-a-Tree online form. Have youth complete page 3 in their notebook for the adopted tree.

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Activity 2: Deciduous versus Coniferous

See Materials needed on page 1 of lesson.

Getting Ready

This activity focuses on the difference between deciduous and coniferous trees, and the tree identification section of the Adopt-a-Tree online form.

1. Review the tree identification background information and supporting materials.
2. Locate an area where both deciduous and coniferous trees are available. Remember safety first. When taking youth outside be mindful of the weather and check the trees and area for hanging branches, poison ivy, or any harmful plants or animals.

Do the Activity

1. Introduce youth to deciduous and coniferous trees, discussing their physical differences and roles in the forest.
2. Have the group find and identify a deciduous tree. Have each youth touch and smell the tree.
3. Using their Adopt-a-Kentucky-Tree Field Notebook (on page 4), have each 4-Her sketch the tree, including the trunk, branches, leaves, and treetop.
4. Have the group find and identify a coniferous tree. Have each youth touch and smell the tree.
5. Have 4-Hers sketch this tree in their notebook (on page 4), including the trunk, branches, leaves, and treetop.
6. Compare the two sketches and talk through the differences.
7. As a group, follow the steps to adopt both trees using the Adopt-a-Tree online form. Have youth complete page 5 in their notebook for the adopted trees.

Activity 3: Simple versus Compound Leaves

See Materials needed on page 1 of lesson.

Getting Ready

This activity focuses on the simple and compound leaves, and the tree identification section of the Adopt-a-Tree online form.

1. Review the tree identification background information.
2. Locate tree types with both simple and compound leaves. Remember safety first. When taking youth outside be mindful of the weather and check the trees and area for hanging branches, poison ivy, or any harmful plants or animals.
3. Use the diagrams in the background information to show examples of simple versus compound leaves or have examples of leaves available. (Note: larger images of the diagrams of simple and compound leaves are available at the end of the lesson guide for leaders to print as needed.)

Do the Activity

1. Introduce youth to the basics of different leaf types, showing them examples of simple and compound leaves from different tree species.
2. Have the group find and identify a tree with a simple leaf and sketch or do a tracing of the leaf in their Adopt-a-Kentucky-Tree Field Notebook (on page 6). Discuss what makes the leaf a simple leaf.
3. Have the group find and identify a tree with a compound leaf and sketch or do a tracing of the leaf in their notebook (on page 6). Discuss what makes the leaf a compound leaf.
4. As a group, follow the steps to adopt both trees using the Adopt-a-Tree online form. Have youth complete page 7 in their notebook for the adopted trees.

Adopt-a-Kentucky-Tree

Activity 4: Big versus Little Trees

See Materials needed on page 1 of lesson.

Getting Ready

This activity focuses on trees of different sizes, and how they vary in the benefits they each bring to an ecosystem.

1. Review the environmental benefits background information in this lesson.
2. Locate an area where trees of varying sizes are available. Remember safety first. When taking youth outside be mindful of the weather and check the trees and area for hanging branches, poison ivy, or any harmful plants or animals.

Do the Activity

1. Introduce the group to the many environmental benefits that trees provide.
2. From the Adopt-a-Tree online form discuss the concepts of:
    a) Stormwater intercepted: how much rainwater the tree holds. Note: you may to explain what stormwater is to 4-Hers – see background information and supporting materials.
    b) Carbon dioxide reduced: how much carbon the tree stores in its wood.
    c) Energy conserved: the shade a tree creates and its ability to break the wind.
3. Have the group find a relatively smaller tree. Adopt the tree using the Adopt-a-Tree online form. Have each 4-Her record the benefits of the tree (from the online form) in their Adopt-a-Kentucky-Tree Field Notebook (on page 8).
4. Have the group find a relatively larger tree. Adopt the tree using the Adopt-a-Tree online form. Have each 4-Her record the benefits of the tree (from the online form) in their Adopt-a-Kentucky-Tree Field Notebook (on page 8).
5. Have youth compare the benefit numbers of the smaller tree to the larger tree and record their thoughts on page 9 of their field notebook.
6. Have youth discuss what they wrote on page 9 as a group.

Activity 5: What can you find living on your tree?

See Materials needed on page 1 of lesson. In addition to these items, you will also need a large whiteboard, chalkboard, or flipchart paper and dry erase markers or chalk.

Getting Ready

This activity focuses on the many living creatures that benefit from trees and how trees serve as important habitats.

1. Locate several trees that 4-Hers can sit around and observe. Remember safety first. When taking youth outside be mindful of the weather and check the trees and area for hanging branches, poison ivy, or any harmful plants or animals.

Do the Activity

1. Have youth sit around one large tree (or split youth into groups and have them sit around different trees in their groups).
2. Ask youth to observe the tree for 5-10 minutes, paying close attention to anything living on the tree (such as insects, birds, mammals, plants, fungi, lichen, etc.). Explain to youth that they can walk around the tree, touch the tree, smell the bark. Encourage youth to look closely at the bark and leaves, and to look up into the tree canopy. Have youth record any living creatures they observe living on the tree on their Adopt-a-Kentucky-Tree Field Notebook (on page 10).
3. Have youth share their observations as a large group. Record all the observations on a large whiteboard, chalk board, or flip chart paper. Discuss with youth how trees act as homes to these species, and how the presence of trees are crucial to many living creatures (including us)!
4. As a group, follow the steps to adopt the tree using the Adopt-a-Tree online form. Have youth complete page 11 in their notebook for the adopted trees.

Cooperative Extension Service
Agriculture and Natural Resources
Family and Consumer Sciences
4-H Youth Development
Community and Economic Development

MARTIN-GATTON COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

Lexington, KY 40506

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Activity 6: Tree Report

See Materials needed on page 1 of lesson. In addition to these items, you will also need a large whiteboard, chalkboard, or flipchart paper and dry erase markers or chalk, and 4-H members will need a calculator.

This activity brings together the data collected from the previous five activities to analyze the combined environmental benefits of the trees.

Do the Activity

1. Have youth record the gallons of stormwater intercepted, pounds of carbon dioxide reduced, and kilowatt-hours of energy conserved for each of the eight trees they adopted in the activities 1-5 in their Adopt-a-Kentucky-Tree Field Notebook on page 12).
2. Once all the data is recorded, ask 4-Hers to add up the numbers in each column to find the total gallons of stormwater intercepted, total pounds of carbon dioxide reduced, and total kilowatt-hours of energy conserved by all 8 trees.
3. As a group, have each 4-H member share their totals, and record the totals on a whiteboard, chalkboard, or flipchart paper. Once everyone has shared, add up the total gallons of stormwater intercepted, total pounds of carbon dioxide reduced, and total kilowatt-hours of energy conserved by the entire group's adopted trees.
4. As a group, talk about why these numbers are important.
5. Encourage youth to adopt additional trees with their family.

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Supplemental Information

4-H Connections

This lesson can be connected to the 4-H leaf collection or leaf print collection projects. Youth can collect leaves from the trees they adopt, and create leaf collections to enter as fair projects.

The Kentucky Junior Master Naturalist Program has a lesson that focuses on tree identification, and includes hands-on activities that can easily be used with the Adopt-a-Kentucky-Tree Program.

For information on these projects and program, contact your county 4-H agent. *Agents – information about these projects can be found in the Kentucky 4-H Programming Teams page (see the State Fair and Natural Resources Core Area channels for information).*

Additional Activities

Project Learning Tree (PLT) is a nationally renowned environmental education curricula that has numerous hands-on activities related to trees and nature. Examples of PLT activities that can be used in conjunction with this lesson include:

- Poet-Tree
- Every Tree for Itself
- Trees as Habitats
- Adopt a Tree

Additional Materials

The following materials are provided to use with this lesson:

- Adopt-a-Kentucky-Tree Field Notebook
- Leaf diagrams
- Informational handout

Reflect and Apply

After completing this lesson, youth will have formed a connection and adopted at least eight trees through the Adopt-a-Kentucky-Tree Program!

Nature Challenge: Encourage youth to adopt a tree with their family in their backyard or neighborhood. Have youth and their families follow the steps to adopt the tree using the Adopt-a-Tree online form, and complete pages 13-15 in their notebook for their adopted tree. In the notebook, page 13 has a place to record the benefits of the adopted tree, and pages 14-15 provides space for youth and their families to make observations about their tree through the fall, winter, spring, and summer season.

Service Project Challenge*:* Challenge youth to work with their family or local 4-H club to plan and host a service project in their community related to trees. Ideas of projects include planning and hosting a tree planting event (whether planting one or multiple trees), creating an exhibit featuring the Adopt-a-Kentucky-Tree Program and displaying it at the Extension office, public library, or school, or leading a tree education session or tree hike for a Cloverbud Club or other 4-H club or project group.

References and Acknowledgements

References

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Acknowledgements

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Adopt-a-Kentucky-Tree Field Notebook

Name: _____

County: _____

Program Year: _____

Activity 1: Adopt Your Favorite Tree!

Write ten words or phrases about how this tree makes you feel.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

Adopt-a-Kentucky-Tree Field Notebook

Your Adopted Tree:

Circumference (inches):

Tree Species:

Stormwater Intercepted (Gallons):

Carbon Dioxide Reduced (Pounds):

Energy Conserved (Kilowatt-hours (kWh)):

Why did you choose this tree?

Activity 2: Deciduous versus Coniferous

Deciduous Tree Sketch

Coniferous Tree Sketch

Adopt-a-Kentucky-Tree Field Notebook

Your Adopted Deciduous Tree:

Circumference (inches):

Tree Species:

Stormwater Intercepted (Gallons):

Carbon Dioxide Reduced (Pounds):

Energy Conserved (Kilowatt-hours (kWh)):

Why did you choose this tree?

Your Adopted Coniferous Tree:

Circumference (inches):

Tree Species:

Stormwater Intercepted (Gallons):

Carbon Dioxide Reduced (Pounds):

Energy Conserved (Kilowatt-hours (kWh)):

Why did you choose this tree?

Activity 3: Simple versus Compound Leaves

Simple Leaf

Compound Leaf

Adopt-a-Kentucky-Tree Field Notebook

Your Adopted Tree (Simple Leaf):

Circumference (inches):

Tree Species:

Stormwater Intercepted (Gallons):

Carbon Dioxide Reduced (Pounds):

Energy Conserved (Kilowatt-hours (kWh)):

Why did you choose this tree?

Your Adopted Tree (Compound Leaf):

Circumference (inches):

Tree Species:

Stormwater Intercepted (Gallons):

Carbon Dioxide Reduced (Pounds):

Energy Conserved (Kilowatt-hours (kWh)):

Why did you choose this tree?

Adopt-a-Kentucky-Tree Field Notebook

Activity 4: Big versus Little Trees

Your Adopted Little Tree:

Circumference (inches):

Tree Species:

Stormwater Intercepted (Gallons):

Carbon Dioxide Reduced (Pounds):

Energy Conserved (Kilowatt-hours (kWh)):

Why did you choose this tree?

Your Adopted Big Tree:

Circumference (inches):

Tree Species:

Stormwater Intercepted (Gallons):

Carbon Dioxide Reduced (Pounds):

Energy Conserved (Kilowatt-hours (kWh)):

Why did you choose this tree?

Activity 4: Big versus Little Trees

What are some benefits that trees provide?

Side by Side Comparison

Benefits	Little Tree	Big Tree
Stormwater Intercepted		
Carbon Dioxide Reduced		
Energy Conserved		

Which tree intercepts the most stormwater? _____

Which tree reduces the most carbon dioxide? _____

Which tree conserves the most energy? _____

Do both trees provide benefits to the environment? Explain your answer.

Activity 5: What can you find living on your tree?

Record everything you see alive on your tree! Did you see any squirrels, bugs, birds, or fungi?

Adopt-a-Kentucky-Tree Field Notebook

Your Adopted Tree:

Circumference (inches):

Tree Species:

Stormwater Intercepted (Gallons):

Carbon Dioxide Reduced (Pounds):

Energy Conserved (Kilowatt-hours (kWh)):

Why did you choose this tree?

Activity 6: Tree Report

Tree	Stormwater Intercepted (Gallons)	Carbon Dioxide Reduced (Pounds)	Energy Conserved (Kilowatt-hours)
Activity 1 Favorite Tree			
Activity 2 Deciduous Tree			
Activity 2 Coniferous Tree			
Activity 3 Simple Leaf			
Activity 3 Compound Leaf			
Activity 4 Little Tree			
Activity 4 Big Tree			
Activity 5 Habitat Tree			
TOTAL			

Adopt-a-Kentucky-Tree Field Notebook

Nature Challenge

Your Adopted Tree:

Circumference (inches):

Tree Species:

Stormwater Intercepted (Gallons):

Carbon Dioxide Reduced (Pounds):

Energy Conserved (Kilowatt-hours (kWh)):

Why did you choose this tree?

Nature Challenge

For each season, observe your tree and record observations here. Include a sketch of your tree.

Fall Season

Winter Season

Nature Challenge

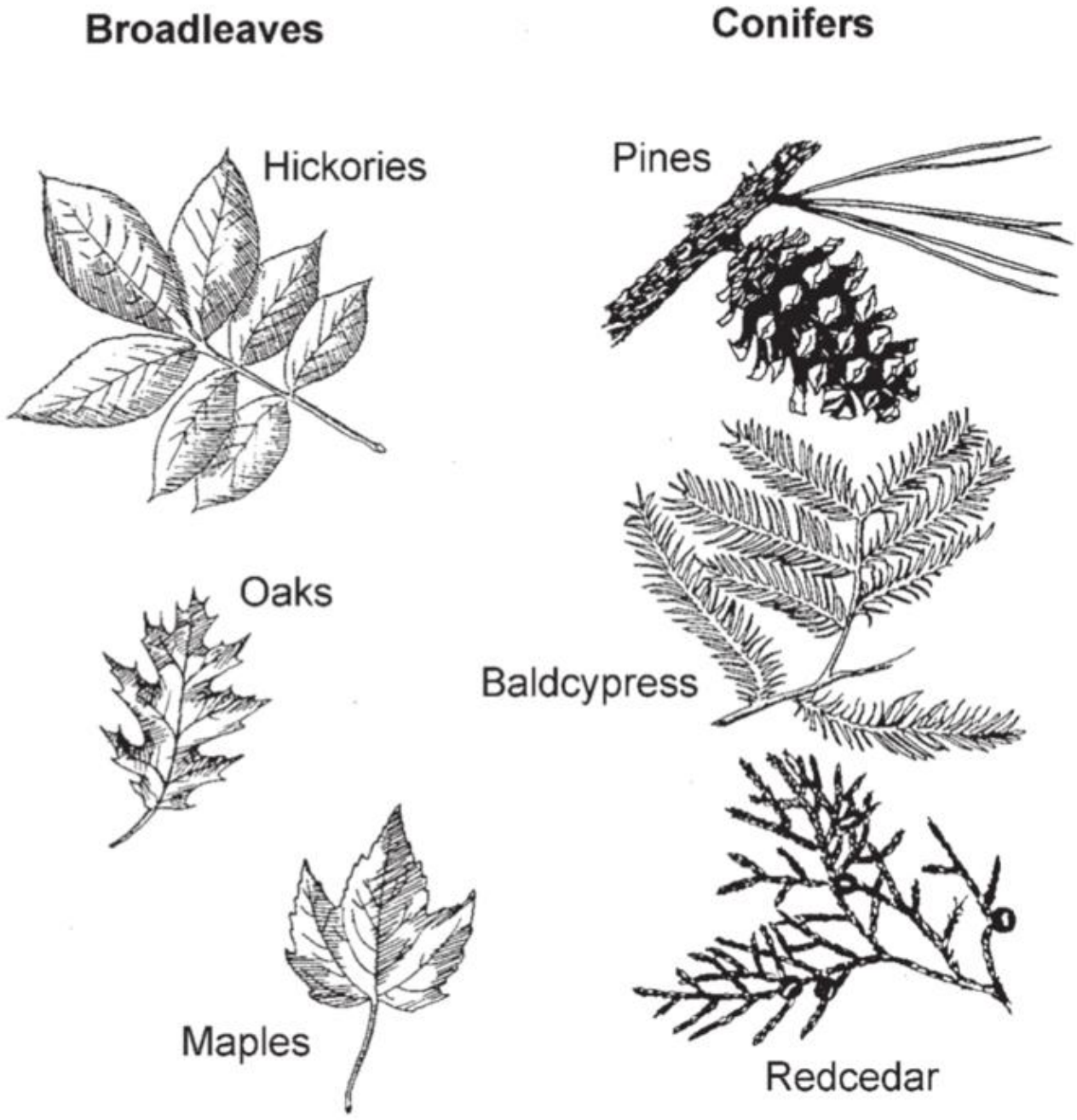
For each season, observe your tree and record observations here. Include a sketch of your tree.

Spring Season

Summer Season

Adopt-a-Kentucky-Tree Field Notebook

Leaf Diagrams and Images: Deciduous and Coniferous



Cooperative Extension Service

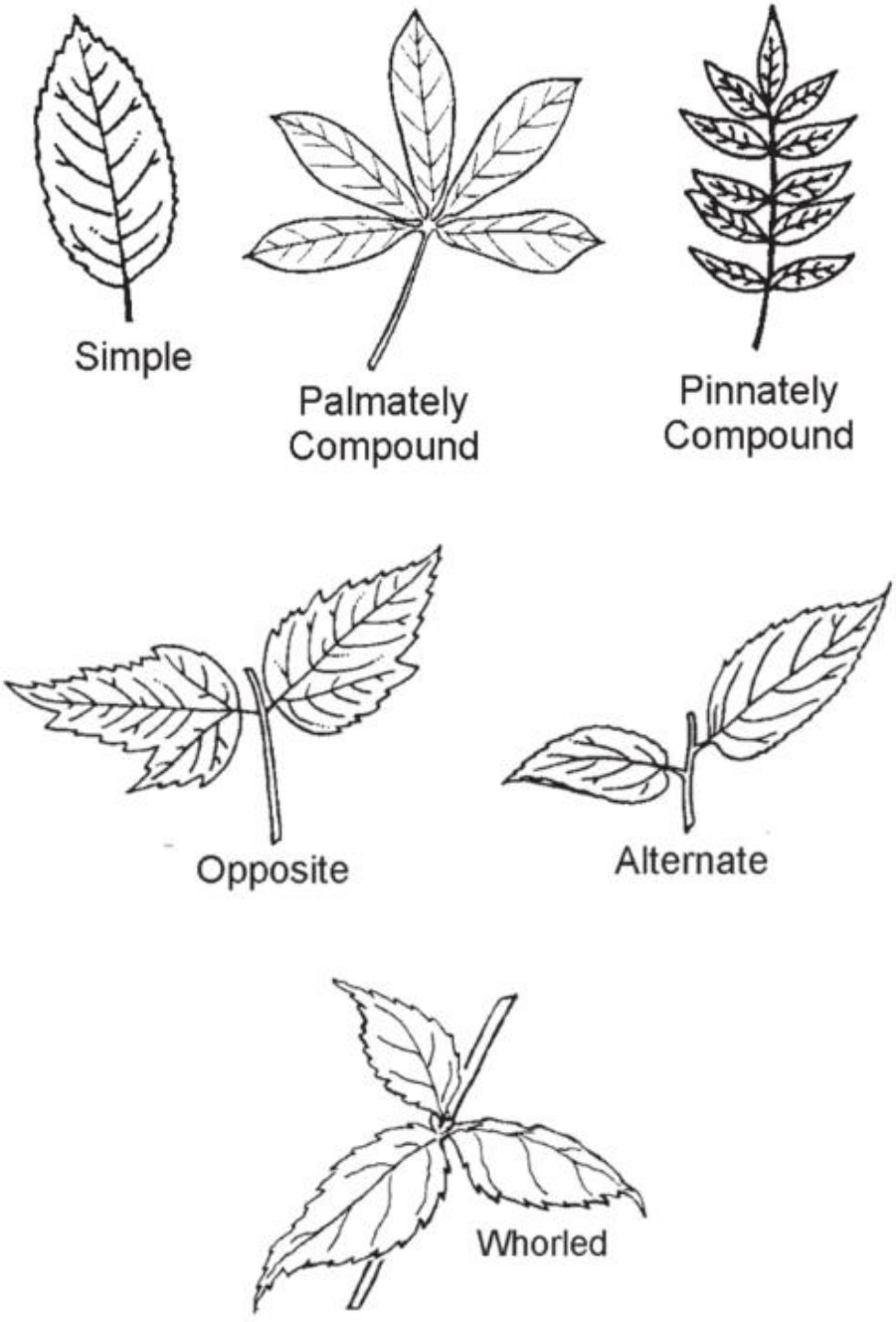
Agriculture and Natural Resources
Family and Consumer Sciences
4-H Youth Development
Community and Economic Development

MARTIN-GATTON COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

Lexington, KY 40506

Adopt-a-Kentucky-Tree Field Notebook

Leaf Diagrams and Images: Leaf Arrangement



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Adopt-a-Kentucky-Tree

Adopting a tree is a great way to learn more about trees and to acknowledge the work they do to make your life better. Participating in the adopt program gives you or your group the opportunity to join a community of treekeepers who recognize the benefits and beauty that trees provide us. Adopt-a-Kentucky-Tree is a University of Kentucky Urban Forest Initiative program.

Why adopt?

Adopting a tree gives you and your group a chance to learn more about the specific ecosystem benefits of your adopted tree, but it doesn't stop there! Your tree can serve as a personal connection to topics like the water and carbon cycles, tree health, and climate change.

Adopt a Tree in Three Easy Steps!

Materials: A cell phone with an internet connection, a flexible tape measure, and access to the online form (http://ufi.ca.uky.edu/adopt-a-tree)

1. Identify a tree (or trees) to adopt.
2. Measure the circumference of the tree at 4.5 feet above ground on the uphill side if on a slope, about chest height.
3. Use the Adopt-a-Tree online form to input information about your tree.

Safety First!

Before measuring, check your tree for hanging branches, poison ivy, or any harmful plants or animals.

Adopt-a-Kentucky-Tree

Biology Connection
What roles do trees play in the water and carbon cycles? What about soil formation and nutrient cycling?

Ecology Connection
Trees are host to all kinds of life, from birds and squirrels to microorganisms. How do these organisms relate to the tree and vice versa?

Math Connection
DBH, or diameter at breast height, is a common measurement for trees. However, when measuring, we are collecting the circumference. How do you calculate diameter from circumference?

Cultural Connection
What roles have trees played in Kentucky history? In your family's history? In your personal life?

Arts Connection
Can you draw your tree? Pay attention to the leaf shape and the way the branches split and spread. What parts of the tree could you use for rubbing, sculpture, or other art project?

Thinking Deeper
What benefits do trees provide to the environment and to humans? What benefits do they provide to you personally? Why might these benefits be particularly important in an urban environment?

Don’t delay, adopt a tree today!