



# Follow *the* Path

Level



Forestry  
Youth  
Activity  
Guide

Name \_\_\_\_\_

County \_\_\_\_\_



REVIEWED & RECOMMENDED  
National 4-H Curriculum



# Note to the Forestry Project Helper

**T**hank you for volunteering your time and talents to assist one or more young people in this project. This activity guide will introduce them to the exciting world of Forestry. Your involvement will make a real difference in the quality of their experiences. You will play a valuable role in helping them learn the subject matter and practice the important life skills along the way. Your interest, enthusiasm and, most importantly, your time will be key ingredients to positive and successful experiences. With your guidance and support, youth will set goals and challenge themselves to work through the activities in this guide. It will be a journey into the world of Forestry that everyone will enjoy.

## Your Role

- ➊ Become familiar with the material in this activity guide and the *Forestry Project Helper's Guide*.
- ➋ Support youth in their efforts to set goals and complete the activities.
- ➌ Date and initial the activities on the Achievement Program as the youth complete them.
- ➍ Help the youth know themselves, including their strengths and weaknesses.
- ➎ Incorporate the use of the experiential learning cycle in all learning experiences.

## Youth Outcomes

1. Practicing the life skills of decision making, problem solving, communicating with others, interpreting information, teaching others
2. Recognizing the importance of forests
3. Identifying different types of forests, trees and forest products
4. Developing skills necessary to keep forests healthy



## The Forests of Fun Forestry Series

<i>Follow the Path</i>	4-H BU-08038
<i>Reach the Canopy</i>	4-H BU-08039
<i>Explore the Deep Woods</i>	4-H BU-08040
<i>Forestry Group Activity Guide</i>	4-H BU-08041

The three youth guides have been designed for grades 3–5, 6–8 and 9–12, respectively, but may be used by youth in any grade based on their forestry project skills, experience and interest.



## Forestry Helper's Guide

The *Forestry Helper's Guide*, provides additional learn-by-doing activities that can be adapted to 4-H forestry project groups, clubs or other groups. You'll also find helpful hints about characteristics of youth, life skill development, teaching experientially, project meeting ideas and resources for organizing a community Forestry program.

## Activity Elements

Each activity is designed so the young person has an opportunity to learn by doing before being told or shown how. Your role as Helper is to "take a back seat" while the youth explores the activities and learns from the experiences, even when something doesn't work the first time the way you might think it should. You can help with the learning most effectively by listening as the young person considers the questions and draws conclusions. At times the activity may call for you to be a resource person for content or other ideas.

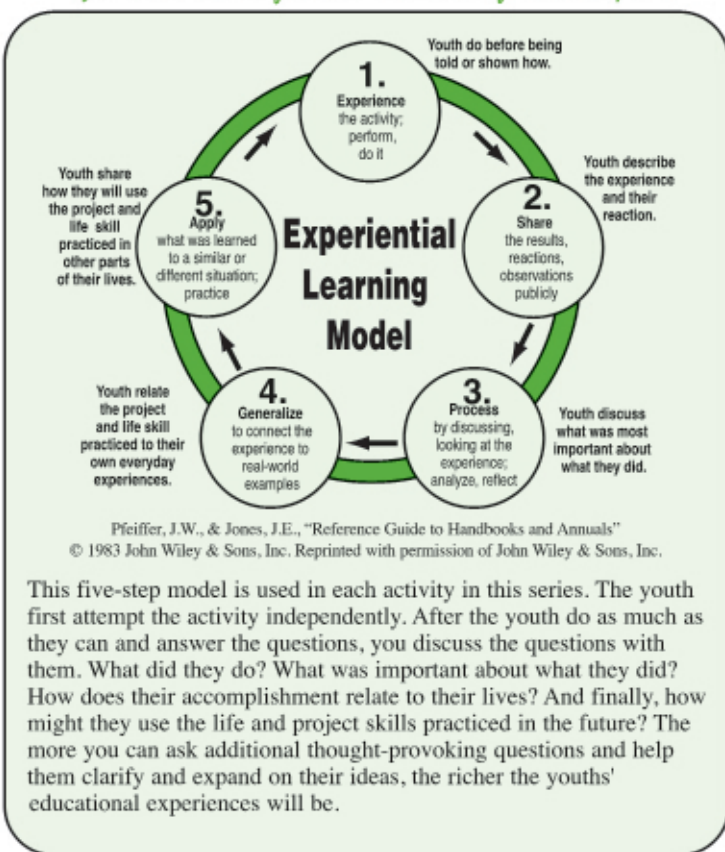
All activities support the experiential learning model endorsed by the 4-H Program. Each activity lists the project skill, the life skill to be practiced, educational standard and a success indicator. The success indicator indicates what the youth will do to successfully complete the activity. In addition, in the *Helper's Guide* you will find an evaluation piece to use to determine what the youth have learned from each activity.

**Take a Hike!** gives the youth direction for completing the activity.

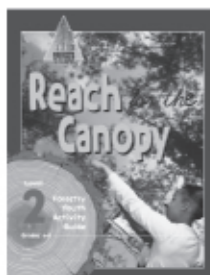
**Tall (Tree) Tales** asks youth to share their experience by recording brief answers to questions and sharing these with the Project Helper. The questions help youth process the experience through the five important steps of the experiential learning cycle shown on this page and more fully outlined in the *Helper's Guide* — Share, Process, Generalize and Apply.

**Branching Out** includes additional activities the youth may choose to do to expand the experience. These activities may be used to complete the Achievement Program for this level. Also included in most activities are additional resources such as **Budding Knowledge** and **Forest Factoids** that support the subject matter of the activity. Internet and additional information and activities are included in the **Forestry Project Online** website.

*Good luck in your role as Project Helper.*



For more on Forestry look for  
other guides in this series.



Level 2  
BU-08039

### Reach for the Canopy

#### Chapter 1: Meet the Trees

Water on the Move  
The Leaf Machine  
Tick, Tock, Tick, Tock  
Dead Ringer

#### Chapter 2: Know Your Forests

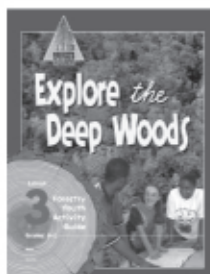
My State Forests  
Ch-ch-ch-changes  
A Home in the Trees  
Forest Invasion

#### Chapter 3: Forests Have Needs

Someone Call a (Tree) Doctor!  
Stop Bugging Me!  
Fire in the Forest  
Move Over, Please!

#### Chapter 4: People Need Forests

Growing Every Day  
Breathing Easier  
City Trees



Level 3  
BU-08040

### Explore the Deep Woods

#### Chapter 1: Meet the Trees

Key That Tree!  
Winter Trees  
Fruity Finds  
A Leafy Heritage

#### Chapter 2: Know Your Forests

Turn Left at the Tree  
A World of Forests  
Foreign Forests

#### Chapter 3: Forests Have Needs

City Trees  
It's a Bird, It's a Plane, It's Super-Tree!  
Recycle Me, Please  
Trim the Trees

#### Chapter 4: People Need Forests

Wanted: Forest Owners  
Anyone Need a Tree?  
Houses & Chairs Are Harvested  
My Boss Is a Tree



BU-08041

### Helper's Guide

#### Chapter 1: Planning for Success

Steps to a Successful 4-H Forestry Program  
Evaluating Your 4-H Forestry Program  
Ages and Stages of Youth Development  
Teaching and Learning Experientially  
Developing Skills for a Lifetime  
Forestry Project Achievement Certificate

#### Chapter 2: Fun with Forestry

Let's Make Plans  
Playing Birch Bingo  
Conducting a Forestry Quiz Bowl  
Forestry A to Z  
Conducting a Mini 4-H Forestry Invitational

#### Chapter 3: Budding Knowledge

Fun with Forestry Pyramid  
Forestry Glossary Games  
Raising Christmas Trees

#### Chapter 4: Tall Tree Tales

Finding Your Way  
A Crowded House  
Piney Woods Squares  
What Kind of Tree Is This?

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# Follow the Path



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# Let the Fun Begin

**A**re you ready to begin the Forestry project? You'll soon discover the many wonders of trees, forests, forest ecology and human reliance on forests. You will learn about forest resources near home and around the world. You'll also explore the relationship between trees, people and communities.

Through the activities in this guide, you will have many interesting and exciting challenges. You'll learn about different types of trees and tree parts, characteristics of different forests, what forests need to grow and thrive, and the many different products and benefits people get from trees and forests. You'll even learn about the many jobs you might want to do when you grow up!

Don't be afraid to jump right into an activity and give it a try. Don't give up if the activity doesn't work the first time. Learning takes place even when things don't turn out as planned. The most important thing is to try. Once you try, talk with your helper about what you did or tried to do.

You'll also be learning about yourself. In addition to what you learn in this project, many of the things you'll do are skills you'll use in other areas of your life, such as decision making, problem solving, communicating with others and more.

## Follow the Path Guidelines

- ① Set your goals and record your Forestry project highlights.
- ② Complete "What do I know?" on page 3
- ③ Do a minimum of six activities in the *Follow the Path* Achievement Program each year and complete the entire program within three years. This program will help you set goals, record your successes and be recognized for your good work.
- ④ Practice and develop the life skills of relating to others, making decisions, learning to learn and communicating with others.
- ⑤ Increase your Forestry knowledge and skills.

## Your Project Helper

Your project helper will support you in this project and make learning more fun. This person may be a parent, project leader or adviser, a neighbor or an older friend who knows about forests and is willing to support you. The choice of a helper is yours.

As you do the activities, you'll discuss with your helper what you did and the questions in the Tall (Tree) Tales part of each activity. Sometimes your helper will work with you to identify resources, including people, Internet sites, organizations, events, magazines and books necessary to complete an activity.

Once you have successfully completed an activity, your helper will date and initial your Achievement Program record. Write the name, phone number and e-mail address of your project helper here.

My Project Helper \_\_\_\_\_

Phone number \_\_\_\_\_

E-mail address \_\_\_\_\_



## Planning Your Journey

## My Forestry Project Goals

Name \_\_\_\_\_

What I want to do and learn.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

## What Do I Know? - Before and After

Here is a great way to see if you learn something new and develop important skills in this project. Before you start doing the activities in this guide indicate what you know **BEFORE**. Then when you complete the *Follow the Path* achievement program indicate what you know **AFTER**. You may be surprised what you learned. Share the results with your helper.

Begin each skill with the words

*I know how to* \_\_\_\_\_.

Then circle **1** (to a great extent)

- 2 (somewhat)  
3 (not at all)

## Follow *the* Path

	Before	After
Identify 10 tree parts.	1 2 3	1 2 3
Label a leaf's parts.	1 2 3	1 2 3
Distinguish between deciduous and conifer leaves.	1 2 3	1 2 3
Age trees by counting rings.	1 2 3	1 2 3
Name three major forest types.	1 2 3	1 2 3
Name 10 organisms that depend on trees for survival.	1 2 3	1 2 3
Describe root systems.	1 2 3	1 2 3
Describe process of transpiration.	1 2 3	1 2 3
Describe process of photosynthesis.	1 2 3	1 2 3
Recognize communities of trees.	1 2 3	1 2 3
Describe how leaves affect rainfall.	1 2 3	1 2 3
Name 10 forest products.	1 2 3	1 2 3
Find a state forest.	1 2 3	1 2 3
List three tree-related careers.	1 2 3	1 2 3

## Forestry Project Highlights

Date and list the most fun and interesting things you do in this project.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



1. Complete at least six activities each year.
2. Complete at least 20 of the *Follow the Path* and Branching Out activities within three years to complete this Achievement Program and receive a completion certificate.
3. Ask your Project Helper to initial the activities as you complete and discuss each one.

Follow <i>the</i> Path Activities	Date Completed	Helper's Initial
<b>Chapter 1: Know Your Trees</b>		
Talking Trunks		
Leafing Out		
Meet "Your Highness"		
Hold On Tight!		
<b>Chapter 2: Know Your Forests</b>		
Home, Tree, Home		
Bark Buddies		
Straight and Tall		
In the Tree's House		
<b>Chapter 3: Forests Have Needs</b>		
Down in the Dirt		
Thirsty Trees		
Spotlight: Trees		
Makin' Maps		
<b>Chapter 4: People Need Forests</b>		
Where's the Water?		
My Couch is a Tree?		
Fun in the Forest		
Trees at Work		

Select any of the Branching Out activities. Record the page number of each activity you complete and discuss with your helper.

[illegible]

Date \_\_\_\_\_ Helper's Initials \_\_\_\_\_

Date \_\_\_\_\_ Helper's Initials \_\_\_\_\_

Date \_\_\_\_\_ Helper's Initials \_\_\_\_\_



# CHAPTER 1

## Know Your Trees

### Talking Trunks



**Forestry Skill:**  
Aging trees by counting their **rings**

**Life Skill:**  
Interpreting information

**Success Indicator:**  
Ages trees by counting the rings.

**Education Standard:**  
Characteristics of organisms



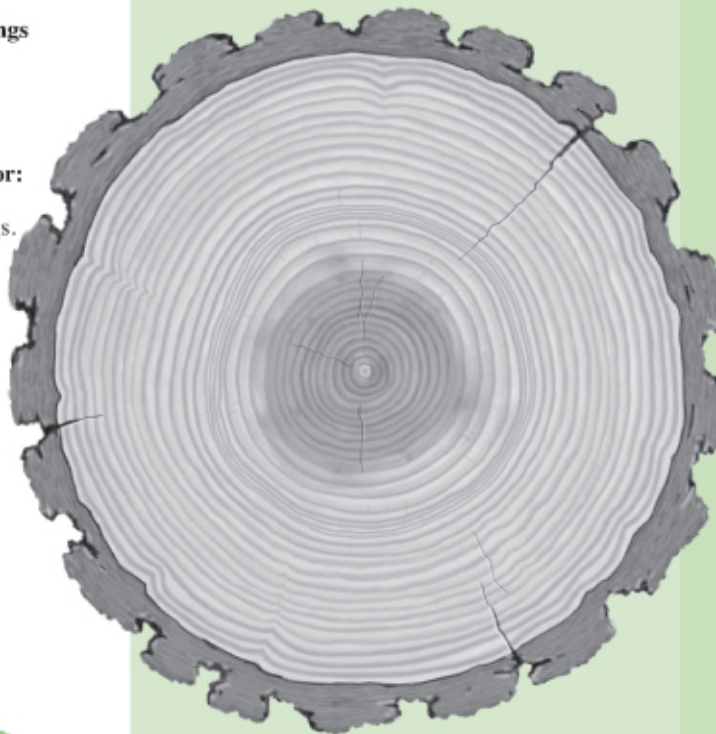
Tree Talk

Tree Ring

**M**ost of the large trees you see are much older than you — and even older than your parents and grandparents! How old? See if you can find the answer. In this activity, you will examine a tree's rings and use your interpreting skills to estimate its age.

### Take a Hike!

On the diagram of the tree trunk below, draw a line to the ring that was added when you were born and record the age of this tree trunk.



Age

### Tall Tree Tales (Talk it over with your helper)



#### Share

How did you tell how old the tree was when it was harvested?



#### Process

What can you learn by studying a tree's rings?



#### Generalize

If you planted a tree today, what important events would you like to mark in the life of the tree?



#### Apply

How does knowing how much history a tree has lived through help you understand how time passes?

### Budding Knowledge

#### Finding the Age of a Tree

A **tree ring** is added under the bark each year — the greater the width of the ring the better the growing conditions.



# Leafing Out



When you look at trees in a forest, they may all look alike. But a closer look will show you they are not all the same. In this activity, you'll use your decision making skills to divide trees into their two main groups, **conifer** and **deciduous**, and to identify the parts of leaves.

## Take a Hike!

**1** Look at the pictures on the right. Write **conifer** or **deciduous** under the appropriate tree. Identify whether the leaf under each tree is a **broad-leaf** or needle-leaf. Then name six parts of a maple leaf. Just write the part names on the appropriate lines. Check "Budding Knowledge" and the "Tree Talk" glossary for clues.

**Forestry Skill:**  
Separating trees into basic groups

**Life Skill:**  
Decision making

**Success Indicator:**  
Labels leaf types, parts and arrangements.

**Education Standard:**  
Characteristics of organisms



A



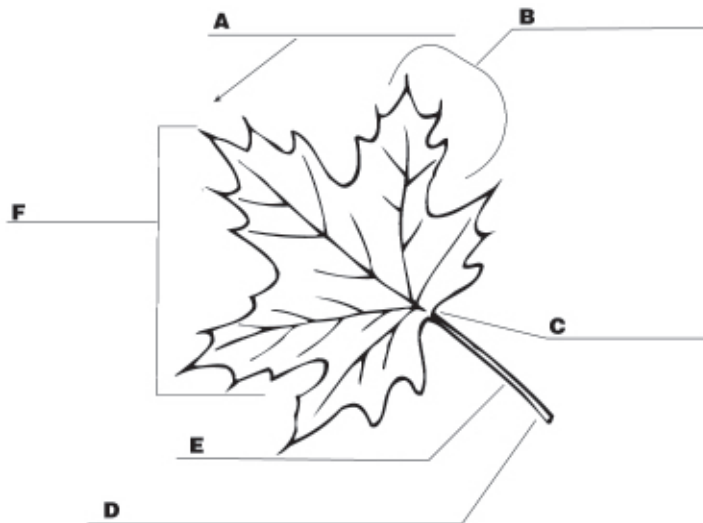
B



C



D



### Parts of a Leaf Word Bank

Petiole	Base of Blade
Blade	Base of Leaf
Margin	Apex

**2** Now go out and see if you can find one of each type of leaf and glue it to the page next to its photograph.

### Tree Talk



*Alternate Leaf Arrangement*

*Apex*

*Base*

*Blade*

*Broadleaf*

*Conifer*

*Deciduous*

*Margin*

*Needle*

*Opposite Leaf Arrangement*

*Petiole*



A few conifers lose all their leaves each year, and not all broad-leaf trees lose their leaves.





## Share

What difference did you discover among leaf types, parts of a leaf and leaf arrangements?



## Process

Why is it useful to know the correct names for the different parts of a leaf?



## Generalize

What did you learn about yourself by sharing your new knowledge with others?



## Apply

If you decided to plant a tree for Arbor Day, what questions would you ask a nursery professional when selecting your tree?

*Let's make like a tree and leave!*



*Leaf me alone!*



## Conifer and Deciduous Trees

Trees are classified as either **conifer** or **deciduous**. **Conifers** normally do not shed their leaves in the fall, but **deciduous** trees usually shed all their leaves each autumn.

Leaves can be arranged on a twig either **oppositely** or **alternately**. They have five basic parts: **petiole**, **blade**, **margin**, **apex** and **base**. **Conifers** have needles with three basic types of **arrangements**: bundled, peg-like or pad-like.



## Branching Out

1. Dry and mount five different kinds of leaves.
2. Draw a leaf silhouette.
3. Keep a journal to record where at least 10 different leaves and trees are located, and the date you found them. Share your journal with your helper.
4. Make a leaf chain or a dried leaf collage.

# Meet "Your Highness"

**Forestry Skill:**  
Identifying tree parts

**Life Skill:**  
Communicating with others

**Success Indicator:**  
Identifies 10 parts of a tree.

**Education Standard:**  
Characteristics of organisms

## Tree Talk

Bark  
Branches  
Conical  
Crown  
Needle  
Nutrients  
Roots  
Twigs



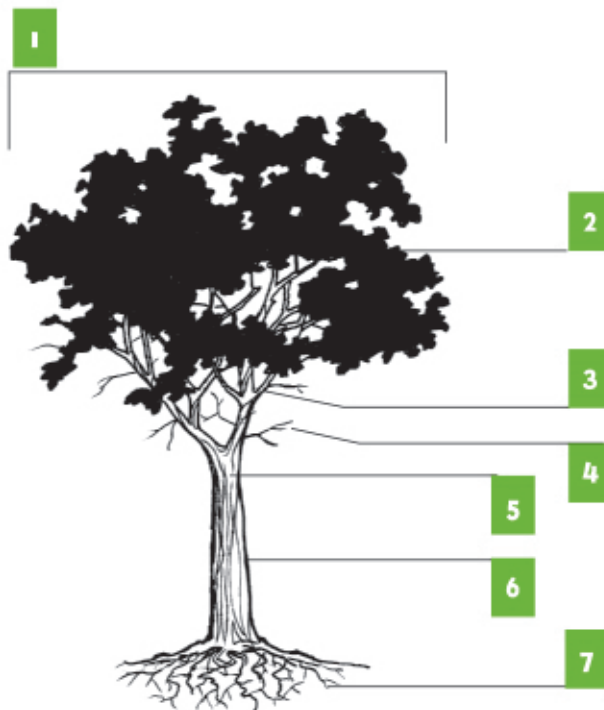
If you met a king, chances are he would have a **crown**. The same is true for Mother Nature's kings - trees. In this activity, you'll label the different parts of a tree and tell what each part's job is. Then use your communicating skills to tell others what you learned.

## Take a Hike!

Match the tree parts found in the word bank to the tree diagram. Next, find the words in the Word Bank in the Word Find. Give yourself extra credit if you can also find the eleven species of trees hidden in the Tree Parts Word Find.

Finally, explain to your helper or a family member the parts of a tree that you now know.

## Tree



## Tree Parts Word Find

Q B B S F P N N S N L N  
B R T I E W R C T E C H  
S A R R O V Y T O P C S  
V N R R U P A S O S C A  
N C C K R N M E R A E U  
D H V E F V K L L V D P  
P E S T W I G S E U A I  
S S M Y E L D E E N R N  
H C R I B H O L L Y Y E  
F I G R K V O K A O K S

## Word Bank

ash  
aspen  
bark  
birch  
branches  
cedar  
crown  
cypress  
elm  
fig  
fir  
holly  
leaves  
needle  
oak  
pine  
roots  
trunk  
twigs

Depending on the size of its crown, a tree can control the size of the trees growing around it.



# Tall Tree Tales (Talk it over with your helper)



## Share

What are the major parts of a tree?

What tree part is your favorite?



## Process

How did you explain the tree parts and functions to others?



## Generalize

How are the tree parts similar to your body parts?



## Apply

What things can you find in your home, at school and on the playground that come from trees? What part of the tree did they come from?

What does a tree say when he looks in the mirror?



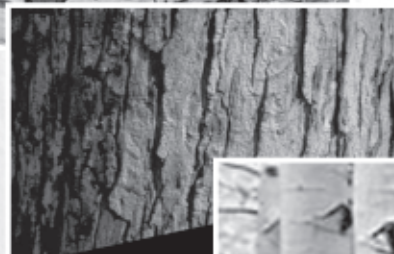
*(geometrically! (gee, I'm a tree!))*

# Budding Knowledge

## Bark and Crown



The leaves and branches at the top of a tree are called the **crown**. The tree's **bark** is like a person's skin, protecting it from insects, disease, storms and hot or cold weather.



A tree's bark protects it from insects, disease, storms and hot or cold weather.

What did the dog say as he brushed up against the tree?



*Bark, bark!*

## Branching Out

1. Find a tree near your home and show someone the parts.
2. Explain to your helper which part of the tree looked sick.