

## **Baker County Arboretum Tree Identification Activity**

The Baker County Arboretum is home to 40 different Florida native and Florida-Friendly Landscaping™ tree species. But how does one go about telling them apart?

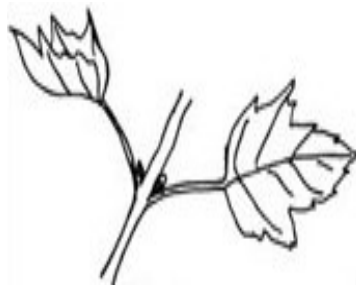
This activity can be used as a guide to identify the tree species located in the Baker County Arboretum. Even those with no plant identification experience should be able to identify the trees without an instructor's assistance by using this guide.

To identify the trees successfully, follow these steps:

1. Learn to recognize leaf arrangement (alternate vs. opposite).
2. Learn to recognize leaf divisions including simple vs. compound leaves, plus even-pinnately compound and odd-pinnately compounds leaves.
3. Review the diagrams illustrating selected leaf shapes.
4. Review the diagrams illustrating selected leaf margins.
5. Follow the tree identification guide (also known as a dichotomous key).

The more familiar you become with these plant identification terms, the faster you will be able to identify the trees species located in the arboretum.

*Note: There are many more plant identification terms used to identify trees and other plants, but the plant identification terms presented in this guide are those needed to identify the trees in the Baker County Arboretum.*

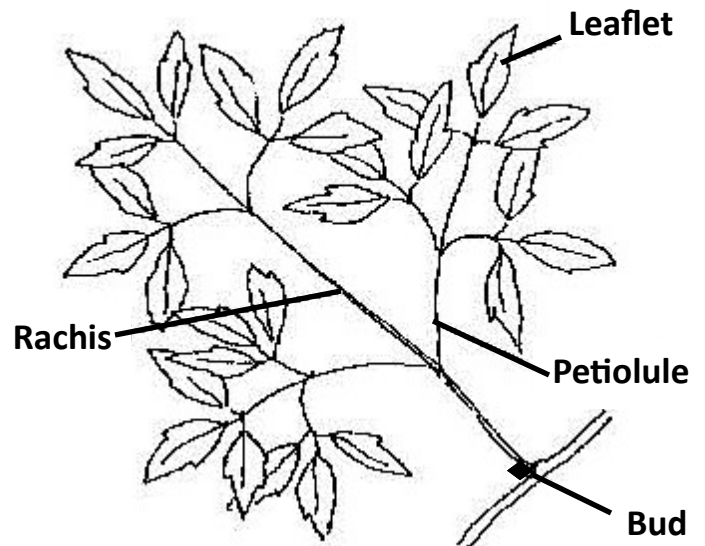
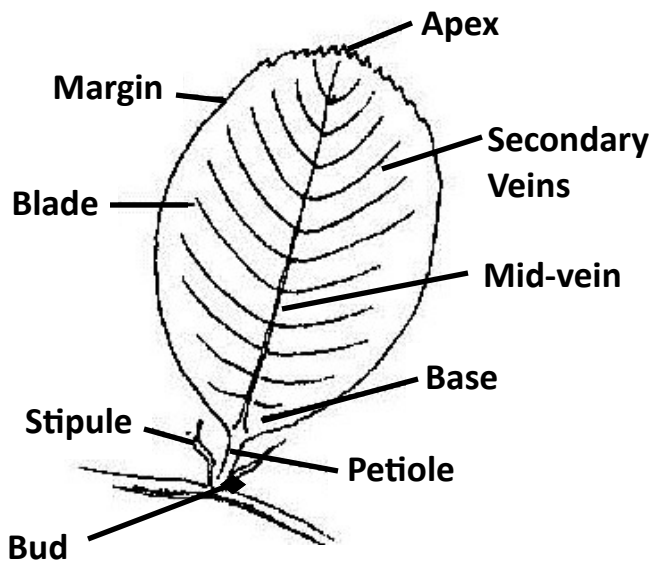
**Step 1:****Leaf Arrangement:** How leaves are arranged on the stem.

**Alternate:** Leaves borne singly at each node (the position on the stem where leaves or branches originate), alternating sides of the stem.

**Opposite:** Leaves borne across from one another at the same node (the position on the stem where leaves or branches originate).

**Sub-Opposite:** Leaves are not spaced far enough apart to be considered alternate nor are they perfectly opposite one another.

**Whorled:** Three or more leaves arising from the same node (the position on the stem where leaves or branches originate).

**Step 2:****Leaf Divisions:** Simple vs. Compound Leaves

**Simple Leaf:** Undivided, as a leaf blade which is not separated into leaflets.

**Compound Leaf:** A leaf separated into two or more distinct leaflets.

**Hint:** Locating the bud will help you identify simple vs. compound leaves.

⇒ If there is a single leaf arising from the bud, the leaf is simple.

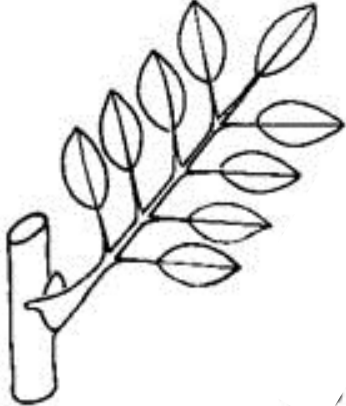
⇒ If there are multiple "leaves" (called leaflets) arising from the bud, the leaf is compound.

**Step 2a:**

**Compound Leaf Divisions: Even-Pinnate vs. Odd-Pinnate Leaves**



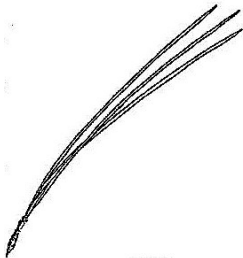
**Even-Pinnate:** Pinnately compound with a terminal pair of leaflets rather than a single terminal leaflet, so that there is an even number of leaflets.



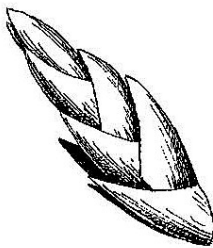
**Odd-Pinnate:** Pinnately compound with a terminal leaflet rather than a pair of leaflets, so that there is an odd number of leaflets.

**Step 3:**

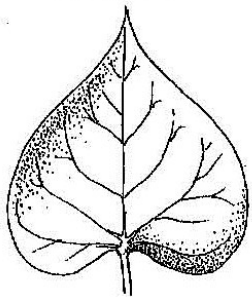
**Leaf Shapes: Characteristics of the leaf shape.**



**Acerose:**  
Needle-shaped



**Awl-shaped:** Scale-like; short, narrowly triangular, and sharply pointed like an awl.



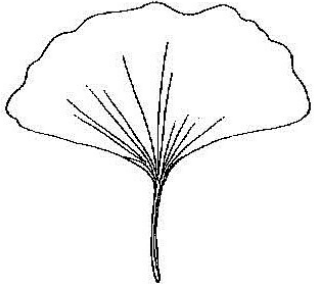
**Cordate:** Heart-shaped, with the notch at the base.

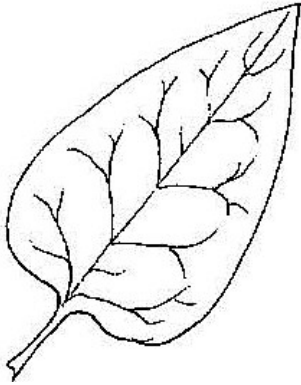
**Ovate:** Egg shaped with a tapering point.

**Oblong:** Two to four times longer than broad with nearly parallel sides.

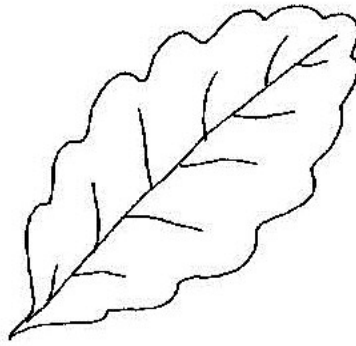
**Palmate:** Lobed, veined, or divided from a common point, like the fingers of a hand.

**Fabellate:**  
Fan-shaped

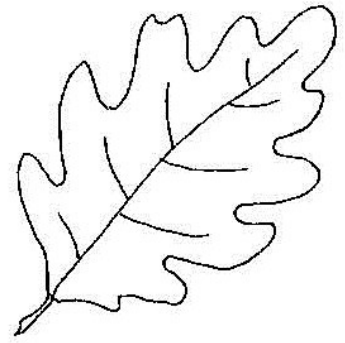


**Step 4:****Leaf Margins: Characteristics of the edge of the leaf blade.**

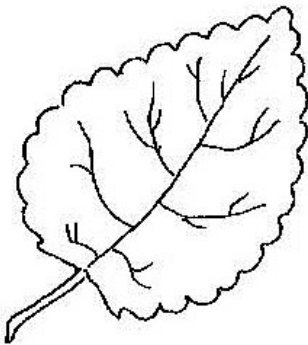
**Entire:** Margin is continuous, not toothed, notched, or divided.



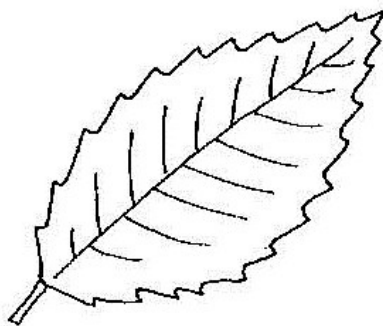
**Lobed:** Bearing lobes which are cut less than half way to the base or mid-vein.



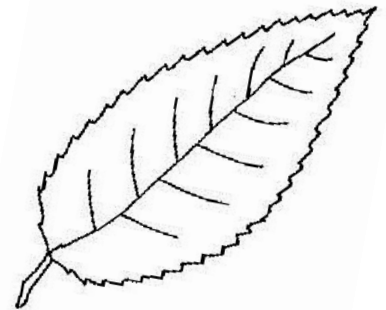
**Cleft:** Deep lobes which are cut about half-way to the base or mid-vein.



**Crenate:** With rounded teeth along the margin.



**Serrate:** Toothed along the margin, the sharp teeth pointing forward.



**Serrulate:** Toothed along the margin, with minute, sharp, teeth (double serrate).

**Step 5:****Follow the tree identification guide (dichotomous key).**

A dichotomous key is a tool that allows the user to determine the identity of items in the natural world, such as trees, by listing a series of choices that lead the user to the correct name of a given item.

To use the key, start by determining which number category the tree fits into (listed 1, 2, 3, 4, or 5). Then (within the numbered category) determine which subcategory the tree fits into (listed i, ii, iii, iv, etc.) and so on. By eliminating certain characteristics, the user should be led to the correct name of the tree in question.

## Baker County Arboretum Dichotomous Key:

### 1. Trees with acerose (needle-like) or awl-shaped (scale-like) leaves

- i. Needles held in bundles
  - a. 2 needles per bundle..... Spruce Pine (*Pinus glabra*)
  - b. 3 needles per bundle..... Longleaf Pine (*Pinus palustris*)
- ii. Scales: tiny, overlapping..... Southern Red Cedar (*Juniperus virginiana* var. *silicicola*)

### 2. Palms

- i. Costapalmate leaves  
(palmate with recurving mid-rib)..... Cabbage Palm (*Sabal palmetto*)

### 3. Trees with opposite leaf arrangement

- i. Simple leaves with lobes
  - a. Leaf petioles (leaf stalks) are red..... Red Maple (*Acer rubrum*)
  - b. Leaf petioles are not red..... Florida Maple (*Acer barbatum*)
- ii. Simple leaves without lobes
  - a. Serrate margins..... Rusty Blackhaw (*Viburnum rufidulum*)
  - b. Entire margins
    - 1. Oblong leaves, 4 to 8 inches..... Fringetree (*Chionanthus virginicus*)
    - 2. Cordate leaves, 8 to 12 inches.....Southern Catalpa (*Catalpa bignonioides*)
    - 3. Ovate leaves, 2 to 6 inches..... Flowering Dogwood (*Cornus florida*)
- iii. Compound leaves, odd-pinnate
  - a. Leaflets 4-6 inches long, 1 ½ inches wide;  
dark green above & below; smooth above  
with undersides very pubescent (hairy) ..... Green Ash (*Fraxinus pennsylvanica*)
  - b. Leaflets 3-5 inches long, 1 ½ - 3 in. wide;  
pale green above, sometimes silvery below;  
smooth above with undersides more or less  
pubescent (hairy)..... White Ash (*Fraxinus americana*)

### 4. Trees with sub-opposite leaf arrangement (may be alternate on fast growing branches)

- i. Leaves with entire margins and pubescent  
(hairy) undersides, especially when young..... Crape Myrtle (*Lagerstroemia indica*)

## 5. Trees with alternate leaf arrangement

### i. Simple leaves

#### a. Entire leaf margin

1. Cordate leaf shape..... Oklahoma Redbud (*Cercis reniformis* 'Oklahoma')
2. Ovate/Oval leaf shape;
  - i. Leaf margins wavy;  
red leaf petioles..... Common persimmon (*Diosporus virginiana*)
  - ii. Leaf margins curl upward;  
no red leaf petioles..... Japanese persimmon (*Diosporus kaki*)
3. Oblong/Oval/Ovate leaf shape
  - i. Leaves 2-5 inches long, 0.5 - 2.5 inches wide; lower leaf surface silver gray color..... Southern Live Oak (*Quercus virginiana* 'High Rise')
  - ii. Leaves 5-8 inches long, 2-3 inches wide; lower leaf surface rusty brown color..... Little Gem Magnolia (*Magnolia grandiflora* 'Little Gem')

#### b. Lobed or Cleft leaf margin

1. Variable leaf shape, maintaining a general heart-shape with typically 0-3 lobes; leaf margins saw-toothed; leaves dull green above with rough texture (sandpaper), pubescent (fuzzy, soft feel) below..... Red Mulberry (*Morus rubra*)
2. Palmate leaf shape; leaves with 5-7 lobes, having finely serrate margins..... Sweetgum (*Liquidambar styraciflua*)
3. Fabelate (fan-shaped) leaf shape..... Maidenhair tree (*Ginkgo biloba*)
4. Rounded lobes, cleft..... White Oak (*Quercus alba*)
5. Sharp-pointed lobes
  - i. Cleft leaves with 7-9 bristle-tipped lobes (tiny soft spines at tips) each with secondary lobes..... Shumard Oak (*Quercus shumardii*)
  - ii. Leaves dark green above, rusty and hairy below; leaves extremely variable with 2 basic types on the same or different trees:
    - (1) with 3 bristle-tipped lobes
    - (2) deeply 5- to 7-lobed.....Southern Red Oak (*Quercus falcata*)
  - iii. Leaves are 4-lobed with a wide leaf base; shiny/smooth above, wirey hairs below particularly on veins; leaf outline tulip-like..... Tulip Poplar (*Liriodendron tulipifera*)

## Trees with alternate leaf arrangement, simple leaves (continued from page 6)

### c. Serrate leaf margin

1. Variable leaf shape, maintaining a general heart-shape with typically 0-3 lobes; leaves dull green above with rough texture (sandpaper), pubescent (fuzzy, soft feel) below..... Red Mulberry (*Morus rubra*)
2. Palmate leaf shape; leaves with 5-7 lobes, having finely serrate margins..... Sweetgum (*Liquidambar styraciflua*)
3. Cordate leaf shape, sometimes flattened at the base..... Basswood (*Tilia americana*)
4. Oblong leaf shape: 2 to 5" long, 1 to 3" wide; wavy margins; leaves dark green shiny smooth above, yellow-green with hairy veins below..... American Beech (*Fagus grandiflora*)
5. Oblong leaf shape: 5 to 8" long, 3 to 4" wide; leaves dark green above, lighter green and silvery pubescent (matted hair) below..... Swamp Chestnut Oak (*Quercus michauxii*)
6. Ovate to Oval leaf shape, up to 3" long; leaves shiny, dark green and leathery with prominent raised veins underneath; trunk has scaly, orange/light brown bark..... Chinese Elm (*Ulmus parvifolia* 'Drake')

### d. Serrulate leaf margin



Oblique

1. Leaf base is unequal (oblique)
  - i. Stems have corky, wing-like outgrowths and leaves are 1 ½ to 3½ inches long..... Winged Elm (*Ulmus alata*)
  - ii. Stems do not have wing-like outgrowths and leaves are 4 to 6 inches long..... American Elm (*Ulmus americana*)
2. Leaf base equal; leaves smaller than 2"
  - i. Red leaf petioles; single trunked..... Flatwoods Plum (*Prunus umbellata*)
  - ii. Red leaf petioles; multi-trunked..... Chickasaw Plum (*Prunus angustifolia*)
3. Leaf base equal; leaves larger than 2"
  - i. Trunk has smooth gray/blue bark (bark may resemble muscle)..... American Hornbeam (*Carpinus caroliniana*)
  - ii. Trunk has scaly dark brown/black bark..... Eastern Hophornbeam (*Ostrya virginiana*)
  - iii. Trunk has papery, peeling bark..... River Birch (*Betula nigra*)

## Trees with alternate leaf arrangement, continued

### i. Simple leaves (continued from page 7)

e. Crenate leaf margin..... Weeping Yaupon Holly (*Ilex vomitoria* 'Pendula')

f. Spines on margin..... American Holly (*Ilex opaca*)

### ii. Compound leaves

#### a. Entire leaf margins, odd-pinnately compound

##### 1. Undersides of leaves

pubescent (hairy)..... Mockernut Hickory (*Carya tomentosa*)

##### 2. Undersides of leaves

smooth (not hairy)..... Pignut Hickory (*Carya glabra*)

#### b. Serrate leaf margins,

odd- or even-pinnately compound..... Black Walnut (*Juglans nigra*)