Leaf Collection Project

Biology II and Honors Biology II

Due October 3rd, 2011

Objective:

Leaf collecting is a good way to learn the trees native to your area. Collecting leaves will also help you to learn leaf margins, shapes, and venations and how to use different taxonomic keys to identify trees.

Illinois Goals and Standards Addressed:

Goal 12: Understand the fundamental concepts, principles and interconnections of the life, physical, and earth/space sciences

Standard 12.A: Know and apply concepts that explain how living things function, adapt, and change.

Materials needed:

- leaf press or old phone book
- black ink pen
- pencil
- small notebook
- scissors
- clear tape
- Card stock paper, art paper, poster board, etc. for mounting
- labels
- taxonomic keys (Forest Trees of Illinois)

Directions for making a leaf press:

1. Cut 15 - 20 pieces of corrugated cardboard 30 cm by 50 cm in size.
2. Cut several sheets of newspaper the same size as the cardboard.
3. Lay 10 or 12 sheets of newspaper between each cardboard layer sandwich style. These sheets will need to be changed every couple of days as they absorb moisture from your leaves; therefore, cut extra sheets.
4. Use one, preferably two, stretch belts to bind the press together.
5. Leave the press in an area so that air can circulate & quickly dry the leaves.

Getting started with your collection:

1. Study the shapes, margins, venations, tips, bases, etc. in your Forest Trees of Illinois

2. Learn to distinguish simple leaves from compound leaves and conifers from deciduous trees.
3. Learn to distinguish a tree from a shrub.
4. Gather your collecting materials together - press, pencil, scissors, & small notebook.
6. *Always get permission* before collecting leaves on someone else's property.
7. Be sure to collect at least *two of each type of leaf* so both the bottom & top side of the leaf can be shown in your collection.
8. Place leaves in your press immediately after collecting them so they do not start to dry out and wrinkle.
9. Record the name of each leaf, date collected, and place collected in your notebook as you collect. Also record tree characteristics such as shape of the crown, color and type of bark, etc.

Collecting:

1. Remember to *collect two* of every type of leaf!
2. Carefully remove an entire leaf, not a leaflet, from the tree, and place this in your press between newspaper layers.
3. I*f leaves are damaged or torn, don't use them because you will not receive credit.*
4. Make sure that none of the leaf parts extend beyond the edge of the press.
5. You may also collect &press seeds and/or fruits from some trees if they fit in your press.
6. Leave the leaf in the press for 3 - 5 days depending on its thickness and moisture content. *Remember to change the newspaper when needed.*
7. Keep the press in an area where air is circulating (in front of a fan).

Labeling and identifying:

1. Obtain printed labels from your teacher.
2. Use only black ink to write labels, & do not mark out or white out mistakes on the labels; rewrite them.
3. Use taxonomic keys to identify each leaf, and include both the scientific & common name of the tree on the label.
4. Determine the shape, margin, tip, base, and venation of your leaf and whether it is a simple or compound leaf; record this on your label.
5. Use you key to give a description of the tree, not the leaf.
6. Research uses for the tree, its fruit, etc. and record on your label.
7. Label all of the following items: **deciduous or coniferous, opposite or alternate, leaf shape, simple or compound, and describe leaf's margin**

Mounting leaves:

1. Use pieces of white card stock, cut poster board or art paper to mount your leaves. Make sure all sheets are uniform in size! (The size of your sheets will be determined by your largest leaf.)
2. Use Elmer's glue to adhere two leaves to each page --- **one showing the upper surface of the leaf and the other showing the underside of the leaf.**
3. Each page should have only **one type** of leaf on it.
4. Arrange the leaves so they do not overlap each other and so there is room to glue the label in the lower right hand corner. The leaves should look nice on the page.
5. On compound leaves, **mount the topside of the complete leaf and then mount the underside of a single leaflet.** *Make sure the leaflet comes from another leaf to receive credit!*
6. Use a small amount of Elmer's glue to adhere the completed label in the lower right hand corner of the page.
7. **LET THE PAGES DRY COMPLETELY BEFORE ASSEMBLING THEM TOGETHER IN YOUR COLLECTION OR THE PAGES WILL STICK TOGETHER!!!!!**
8. Once the pages are dry, lay them in the correct order (see your list of required leaves), and then number the pages in the lower right corner with black ink.
9. Make a stiff front and back cover for your collection from poster board, cardboard, wood, etc. or a 3-ring binder Include the following items on your cover:

- title (Tree Identification Through Leaves)
- your complete name
- date collection turned into teacher
- class period
- subject
- teacher's name

10. Use ribbon, string, etc. to bind the pages (a 3ring binder is fine, too) together or assemble the collection in a scrapbook. **DO NOT COVER THE LEAVES WITH PLASTIC!!!**

Required leaves:

1. Refer to your Forest Trees of Illinois book and Trees of Illinois
2. Leaves must be in perfect condition without damage or tears.
4. No fruit trees such as apple, pear, orange, peach, etc. are allowed.
5. Place the following leaves in alphabetical order by **Genus:**

1. Box Elder
2. Red Maple
3. Silver Maple
4. Sugar Maple
5. River Birch
6. Pecan
7. Shagbark Hickory
8. Hackberry
9. Eastern Redbud
10. Common Persimmon
11. Green Ash
12. Honey Locust
13. Black Walnut
14. Eastern Red Cedar
15. Sweet Gum
16. Yellow- Poplar
17. Osage Orange
18. Red Mulberry
19. Eastern White Pine
20. Sycamore
21. Eastern Cottonwood
22. Black Cherry
23. White Oak
24. Shingle Oak
25. Pin Oak
26. Black Locust
27. Black Willow
28. Sassafras
29. Bald Cypress
30. American Basswood
31. American Elm

32-45: Your Choice…cannot be fruit trees or ornamental trees (Advanced Biology II SC9424)

32-50: Your Choice…cannot be fruit trees or ornamental trees (Honors Biology II 9624)

Table of Contents should be typed with Common name, scientific name, and page number in album.

Example:

Acer rubrum, red maple……1

Remember…

- Labels must be in Print
- Labels can be typed or use Black Ink
- Labels will be provided or you can make your own using the same format to make labels on computer/can use sticker labels
- Place label on bottom right hand corner.

	LEAF IDENTIFICATION
Common Name	
Scientific Name	
Native/Introduced	
Date Collected	
Location	
Simple/Compound	
Coniferous/Deciduous	
Leaf Shape	
Leaf Margin	
Tree Uses	