Summer Assignment 1
Life Science
Tree Identification and Leaf Collection

Project Description:
Pennsylvania has a mixture of deciduous trees and conifers that make up its wide range of forests. Forests are valuable in many ways. Not only do they offer beautiful parks and recreational areas, but they also prevent erosion, provide homes for wildlife and are a valuable economic resource. You will be creating a collection of leaves including identification as well as a brief introduction to trees in general and some of the vocabulary needed to identify them. Most of the trees on the list are native to Pennsylvania but you will find many trees that are not on the list because they have been introduced to the area as ornamentals. Leaves from these trees can be included in addition to the 25 required leaves of native trees.

Your project should be presented in a 3-ring binder (at least 1 inch).

I. Title Page (please use summer project required title page)
II. Vocabulary
III. Leaf Parts Diagram
IV. Leaf Collection – 25 total leaves (20 deciduous trees and 5 conifers) (you may do leaf rubbings in addition to including the pressed leaf)
    a. This information is required for each leaf:
        A. Date collected
        B. Location collected (city, county, state)
        C. Common name (Scientific name – *Genus species*)
        D. Complexity of the leaf (simple or compound)
        E. Venation pattern (palmate net, pinnate net, or parallel)
        F. Type of margins (entire, serrated, pinnately lobed, palmately lobed, undulated)
        G. Arrangement of leaves on the stem (alternate, opposite, whorled)
V. Project Reflection

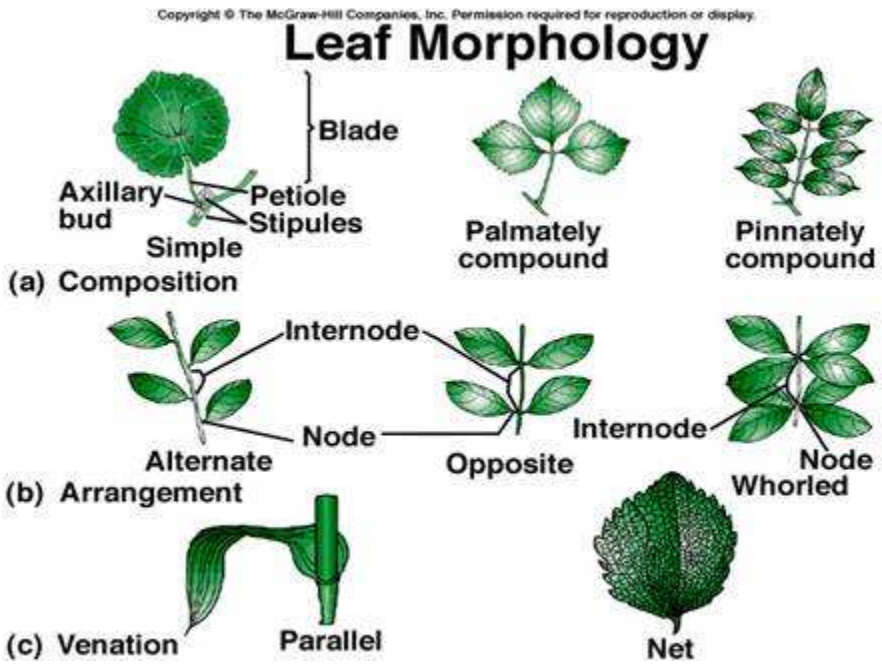
Materials needed:
leaf press (look at the directions for making a leaf press)
black ink pen
pencil
black or brown crayon
small notebook
scissors
Elmer's glue
1 inch 3-ring Binder
Tree Identification Key (this can be obtained online)

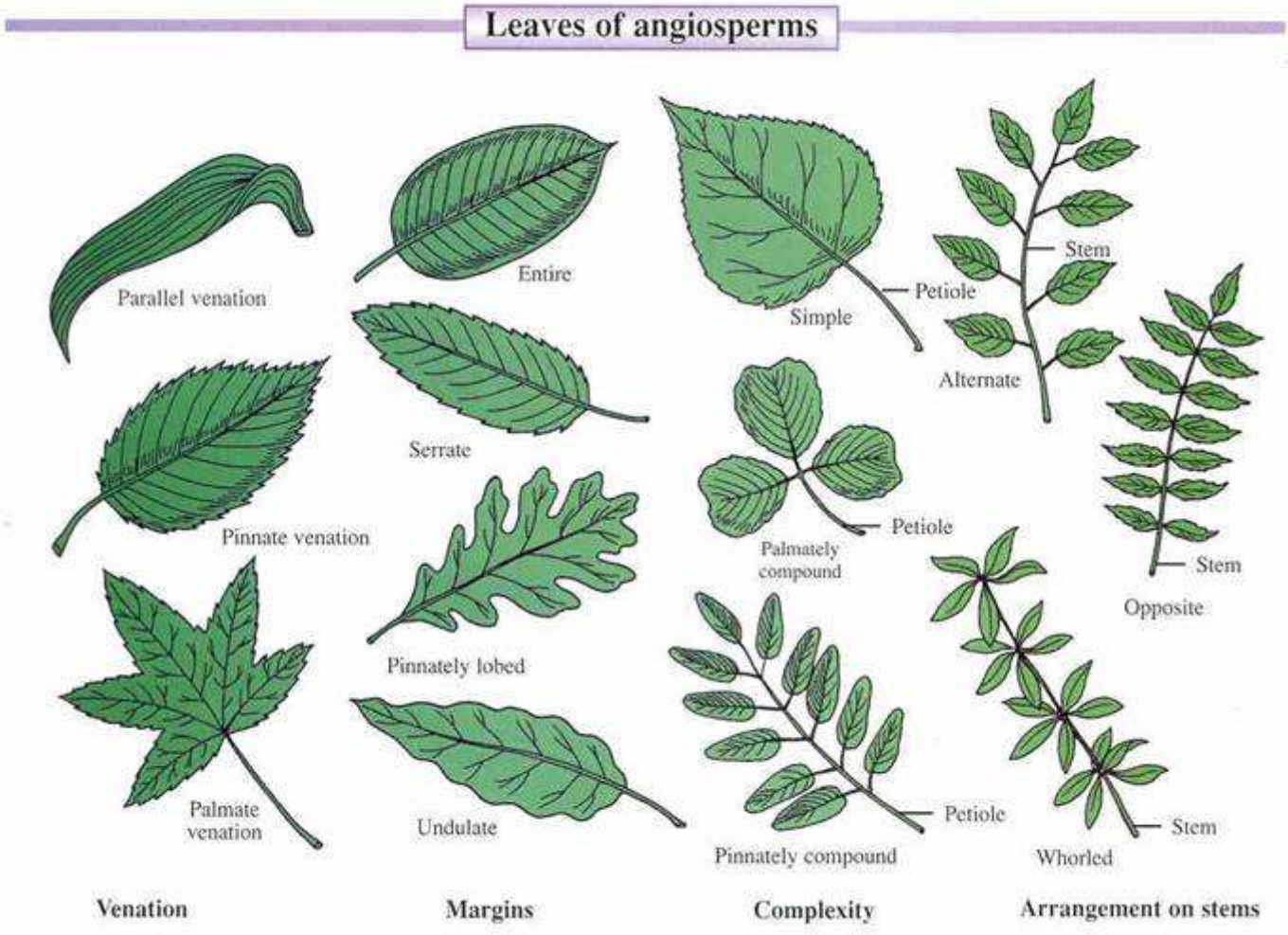
Directions for making a leaf press:
1. Cut 15 - 20 pieces of corrugated cardboard 30 cm by 50 cm in size.
2. Cut several sheets of newspaper the same size as the cardboard.
3. Lay 10 or 12 sheets of newspaper between each cardboard layer sandwich style.

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 & more quickly dry the leaves.

These diagrams will help you in your explanations and descriptions.





Leaf Collecting

1. Make sure to bring the materials that you will need (press, pencil, scissors, notebook – for recording information, and sometimes ziplock baggies are helpful).

2. ALWAYS ask permission before collecting leaves from someone else's property.

3. Collect two of each type of leaf so that you can mount a top and bottom view. Make sure to collect the whole leaf! Be careful not to tear the leaves! Collect seeds or fruits if you would like to.

4. Put your leaves into your press as soon as possible after collecting them so that they don't begin to wrinkle as they dry. Make sure that none of the leaf parts extend beyond the edge of the press.

5. 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.

Mounting leaves:

1. 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.
2. Each page should have only one type of leaf on it.
3. 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.
4. 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.
5. Use a small amount of Elmer's glue to adhere the completed label in the lower right hand corner of the page.
6. LET THE PAGES DRY COMPLETELY BEFORE ASSEMBLING THEM TOGETHER IN YOUR COLLECTION OR THE PAGES WILL STICK TOGETHER!!!!!

Vocabulary List:

Axil, Alternate, Base, Compound, Simple, Conifer, Deciduous, Evergreen, Leaflet, Leaf Scar, Lobe, Opposite, Petiole, Palmate, Pinnate, Parallel, Pith, Sessile, Stalked, Venation, Whorled, Margin, Apex, Blade

Tree List:
Please choose 25 of the following trees for your collection. Each additional tree that you identify will earn extra points for your project!

Cucumber Magnolia
Black Gum
RedBud
Sassafras
Bigtooth Aspen
Quaking Aspen
American Beech
Paper Birch
Sweet Birch
Yellow Birch
Black Cherry
Choke Cherry
Fire Cherry
Serviceberries
American Elm
Slippery Elm
Common Hack Berry
American Linden
Red Mulberry
Black Oak
Northern Red Oak
Pin Oak
Scarlet Oak
Chestnut Oak
White Oak
American Chestnut
Sycamore
Tulip Polar Tree
Black Willow
Witch Hazel
Black Locust
Common Honey Locust
Bitternut Hickoy
Mockernut Hickory
Pignut Hickory
Shagbark Hickory
Shellbark Hickory
Tree of Heaven
Butternut
Black Walnut
Flowering Dogwood
Catalpa
Norway male
Red Maple
Silver Maple
Striped Maple
Sugar Maple
Box Elder
White Ash
Black Ash
Buckeye
Eastern Hemlock
Eastern Red Cedar
Blue Spruce
Norway Spruce
Red Pine
Scots Pine
Virginia Pine
Pitch Pine
Eastern White Pine
American Larch

Reflection:
Write a one or two paragraph reflection on the process of creating this project. Keep in mind that this is part of your project!

Useful websites:
http://www.dcnr.state.pa.us/forestry/commontr/

http://www.dcnr.state.pa.us/FORESTRY/commontr/commontrees.pdf

http://www.cookforest.com/articles/trees/visual-guide.cfm