

Lab 14.1 Leaf Project Counts as Test 14

- Follow the instructions detailed in Lab 14.1, pgs 435 – 436. The objective is to put what you have learned to a practical application. This will help you see just how diverse our trees are in this area and details that you may not have known to look for or have not taken the time to do so. Don't miss out on the learning!!
- WATCH OUT FOR POISON IVY!! A good site to visit for pictures is <http://www.poison-ivy.org/>.
- To ensure you are not exposed to poison ivy or something that you will react to, it is recommended to use gloves when you are collecting and when you are handling your leaves.

ITEMS TO DO DIFFERENTLY THAN INSTRUCTIONS OF LAB:

- Leaf examples reduced to 15. Receive up to +1.75 for every leaf over this amount up to 5 extra leaves for a total of 20 leaves. Extra credit can also be received by identifying the tree name for a possibility of 12.5 extra grade points.
- Prepare a separate notebook of the leaves you have pressed with the information identifying the 7 items listed in the lab. Under "Identification of the tree" make your best educated guess using a tree identification book or the Internet. You won't have the tree with you, so make sure you get enough information to use on the Internet. You may even want to take pictures of your trees and / or bark rubbings, which can be then be included with your leaves.
- Clearly number your leaves.
- Leaf notebooks will be turned in **Week 28 in April**. *For exact date, look at your year syllabus.*

A *Tree Identification* resource accompanies this handout for your use.

Manage Your Time!!

We live in a well-forested community, so there are plenty of trees, not bushes, to identify, but finding 15 different specimens will take some time.

Decide ahead of time how you plan to press your leaves. Several options are listed in the lab or you can also research it and come up with your own. Just keep in mind that pressing leaves can take time for them to properly dry, so make sure to allow enough time to look for your leaves, press them, and make the correct identifications.

A suggestion is to carry what is needed with you in a shoebox or other container and keep it in your car and work on it as the opportunity comes up. This way you can collect what is at your home, neighborhood, church, or wherever else you travel, especially over the Thanksgiving and Christmas holidays.

Just make sure you have the correct number and have identified the 7 items listed in the lab in an organized manner that is easy to follow. Also, make sure you are classifying correctly!!

Have fun putting this together and if you want, be creative.

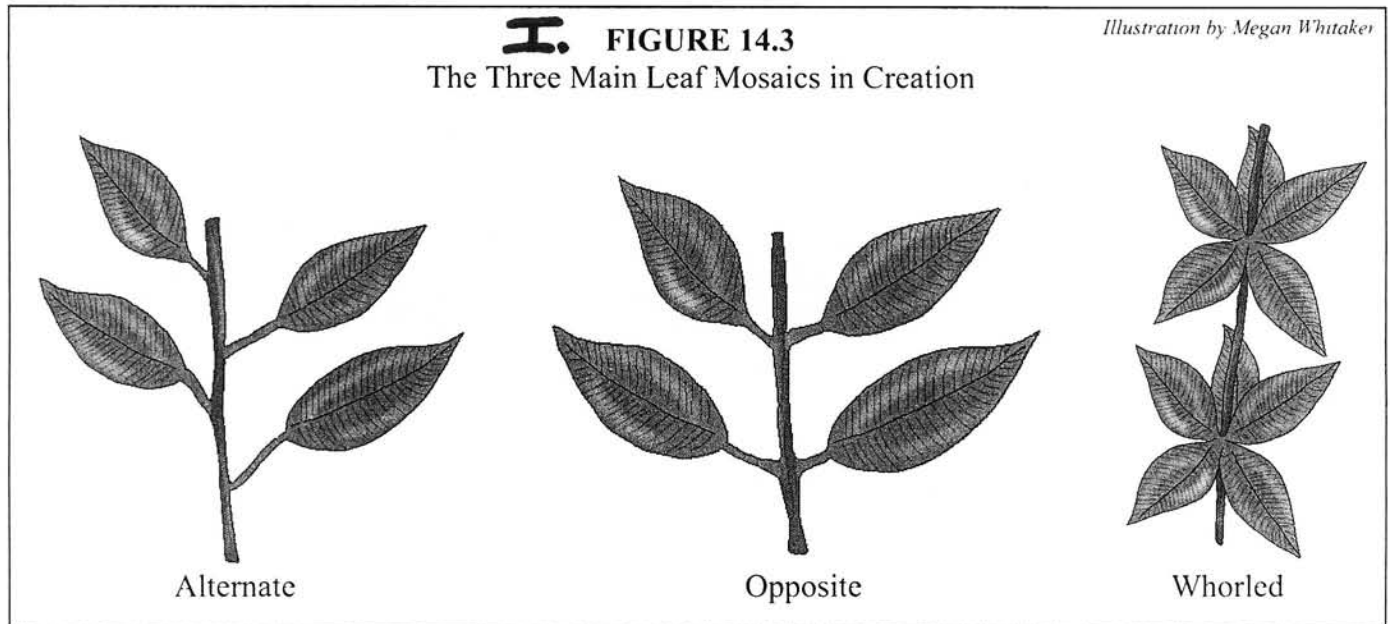
Lab 14.1 Leaf Project



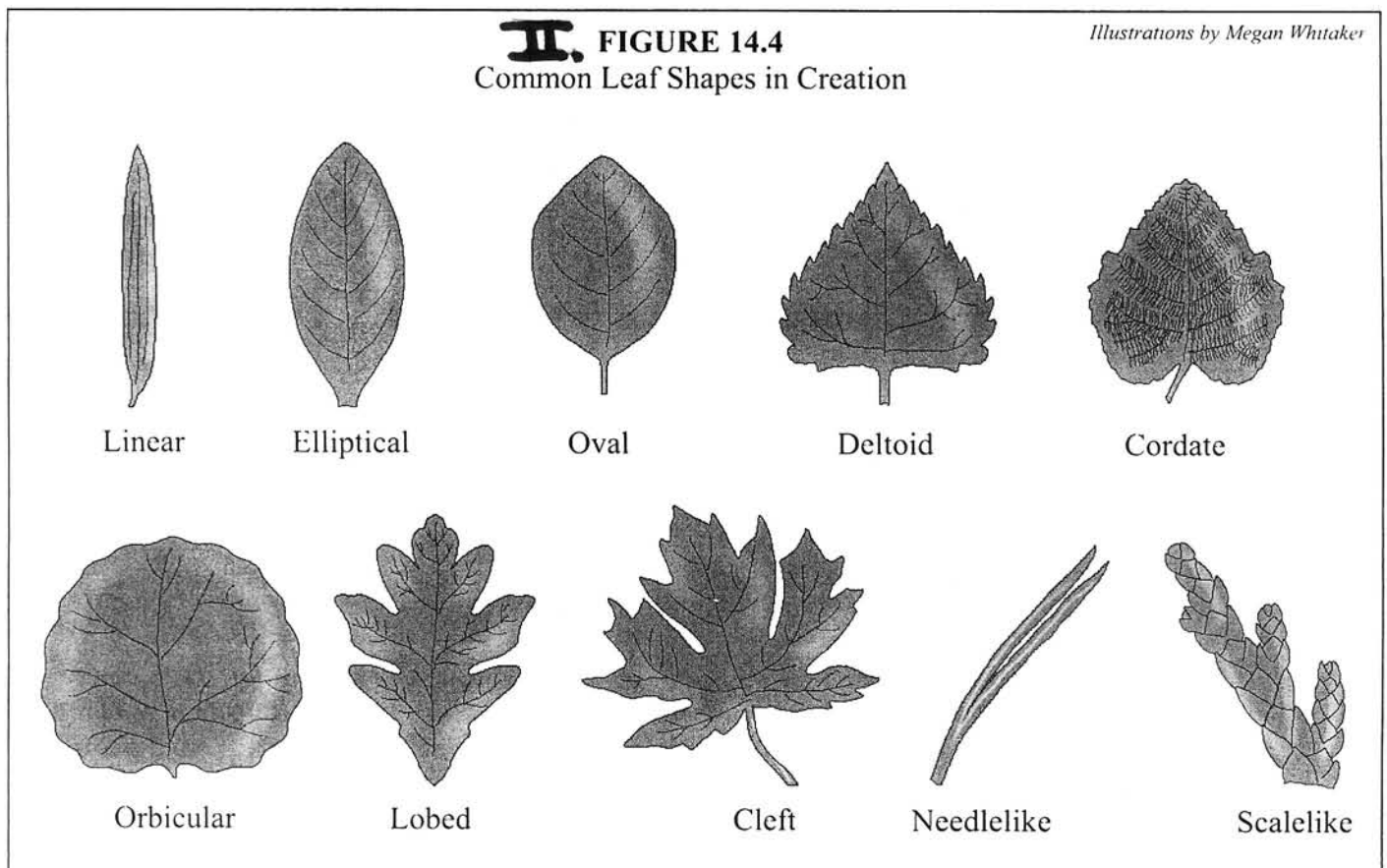
The following from your book will assist in properly identifying what is required. The color illustrations in the book will be more helpful, but this can be used as a guide in the field.

Leaf mosaic – The arrangement of leaves on the stem of a plant

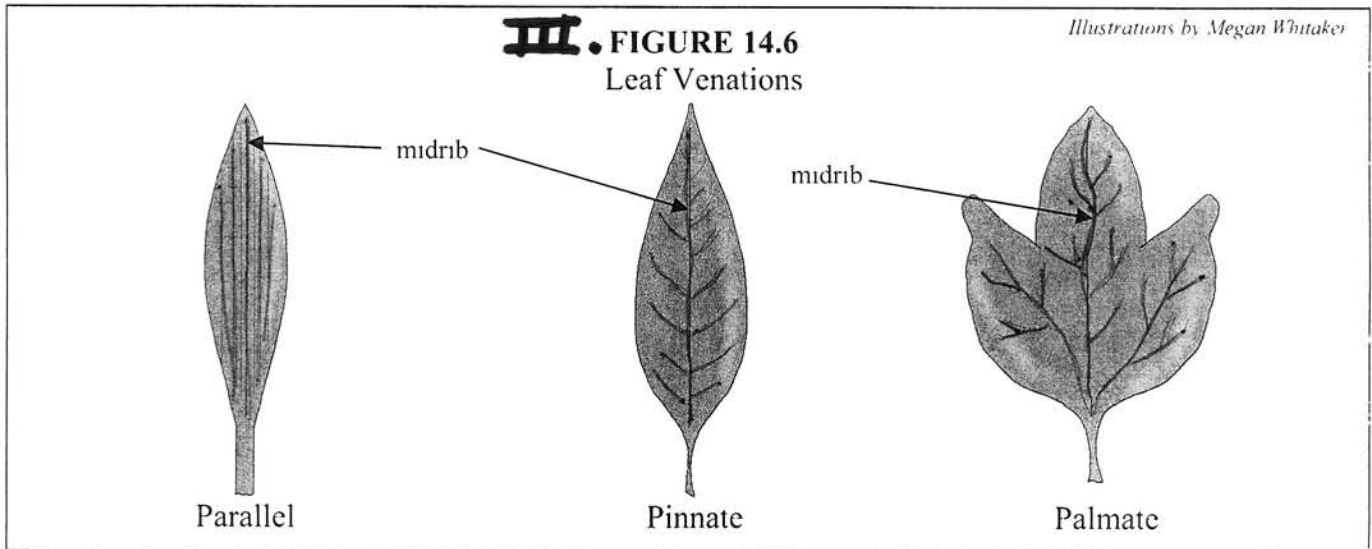
There are many different leaf mosaics in creation, but we will concentrate on the three main types, which are illustrated in the figure below.



Although leaves come in many shapes, we can show you the common ones in creation.

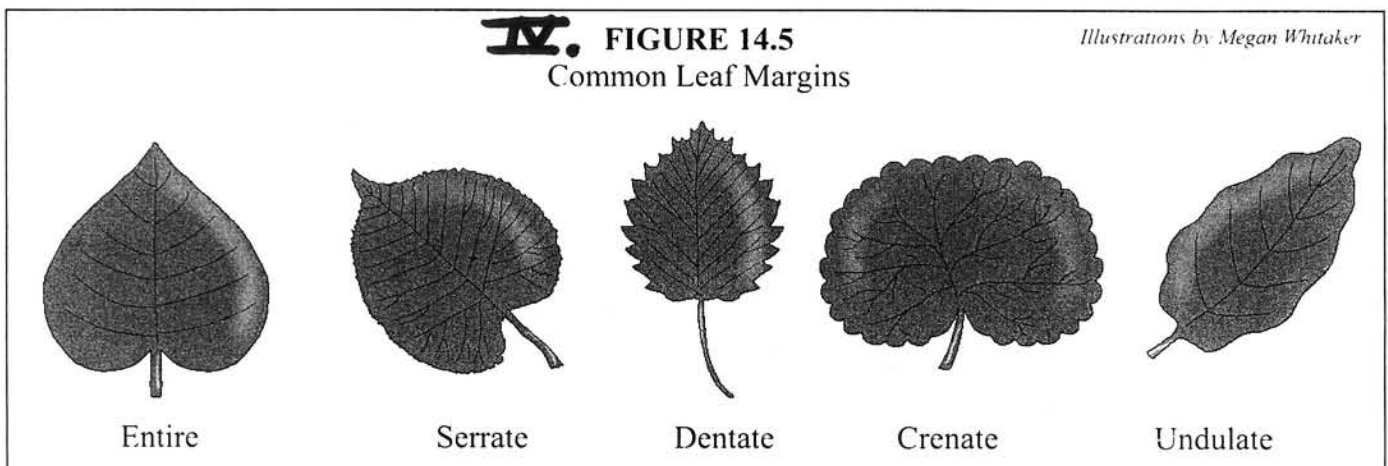


The other characteristic used to classify leaves is leaf venation. If you look closely at a leaf, you will find that there are veins that run through it. These veins (composed of xylem and phloem) form different patterns in different leaves. Generally, a leaf has a large, central vein that extends from the petiole. It is called the **midrib**. When a leaf's veins run up and down the leaf parallel to the midrib, we say that it has **parallel venation**. When a leaf's veins all branch out from the midrib, we say that the leaf has **pinnate venation**. Finally, when a leaf's veins not only branch out from the midrib, but those branches also have branches on them, the leaf has **palmate venation**. These three types of venation are illustrated below.



Leaf margin – The characteristics of the leaf edge

The figure below illustrates the common leaf margins in creation.



If the outer edge of a leaf is smooth with no indentations or teeth, it has an **entire** margin. If, on the other hand, the leaf has tiny, sharp teeth along its outer edge, it has a **serrate** (seh' rayt) margin. With serrate margins, the teeth usually point upwards towards the apex of the leaf. If a leaf's outer edge has more pronounced teeth that also point outward rather than just towards the apex, it has a **dentate** margin. If the teeth are rounded rather than pointed, the margin is called **crenate** (kree' nayt). Finally, if the leaf's edge doesn't have teeth but tends to be wavy, we say that it has an **undulate** (un' joo layt) margin.

V. Bark – Describe (Extra points if bark rubbing is made and included)

- Color
- Rough or somewhat smooth
- Other characteristics

VI. Fruits

- None OR
- Type of fruit or nut

VII. Tree ID – EXTRA CREDIT – Use your Tree ID handout for assistance

- Common name and / or scientific name

Student Name: _____

Date: _____

Module 14 Test

Biology Science Project – Module 14 Test
 Lab 14.1 – Leaf Collection

NOTE: Projects are intended for you to learn in depth about the subject. If you just follow the outline to “get by” and don’t apply time and effort, then a B is the highest grade you will earn.

15 Leaves required to identify. Each item correctly identified is 1 point. **Fill out & turn in with leaf project.**

| Leaf Mosaic | Shape | Venation | Leaf Margin | Bark | Fruits If none, then put "none" | EXTRA (0.25) Tree ID |
|---------------------|-------------|-----------|-------------|-----------|------------------------------------|-------------------------|
| 1. | | | | | | |
| 2. | | | | | | |
| 3. | | | | | | |
| 4. | | | | | | |
| 5. | | | | | | |
| 6. | | | | | | |
| 7. | | | | | | |
| 8. | | | | | | |
| 9. | | | | | | |
| 10. | | | | | | |
| 11. | | | | | | |
| 12. | | | | | | |
| 13. | | | | | | |
| 14. | | | | | | |
| 15. | | | | | | |
| EXTRA Leaves | 0.25 points | / section | correctly | completed | (1.5 / leaf) | (1.75 with ID) |
| 16. | | | | | | |
| 17. | | | | | | |
| 18. | | | | | | |
| 19. | | | | | | |
| 20. | | | | | | |

+ 3.75

+ 8.75

If all **extra credit** is done correctly, 12.5 extra grade points are possible.

Points earned / Possible Points _____ / _____ 90

Grade Total _____