

Leaf Anatomy

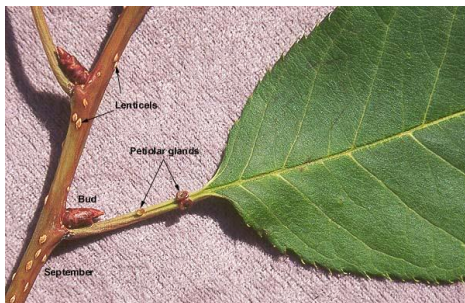
Leaves are the primary _____ of the plant.

They are designed to efficiently _____ and use that light energy to _____.

The main sun-collecting structure on the leaf is a large broad flat surface called the _____

The tip of the leaf blade is known as _____

The edges of the leaf blade is known as the _____



The blade is held away from the stem and supported by a leaf stem called the _____

The petiole is not exactly like a stem, but it does have _____ so it can transport water and sugar.

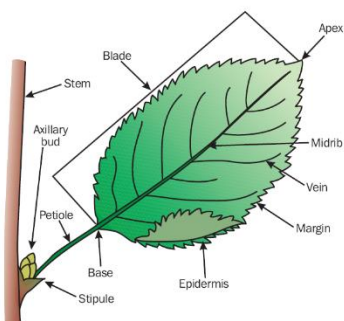
Many leaves are organized with _____ running down the middle of the blade.

This vein is called the _____

All of the veins, the petiole, and the midrib help position the blade in a way that it is _____.



PARTS OF A SIMPLE DICOT LEAF



Veins of flowering plants are found in _____.

Most of these patterns can be categorized into _____.



Monocots have leaves with

_____.

While the veins may not be parallel in a strict mathematical sense, none of the veins on the leaf

_____.

It may look like they are

_____ at the

_____ of the blade.

Corn and grass plants are good examples of monocot leaves.

Dicots have veins that

_____ from each other.

Veins in a branching pattern are called

_____.

Some leaves with netted veins have several smaller veins branching out of a dominant midrib, which is a condition known as

_____.



Other leaves have several dominant veins branching out from the petiole.

This condition is known as _____.

A few plants have a spreading vein pattern called

_____; a ginkgo leaf is an example.

A leaf is organized to _____, through photosynthesis, into food.

The leaf blade has many layers of

_____ to allow this to happen.

On top of the leaf is a waxy non-cellular layer called the _____

The cuticle is on the leaf to _____

The next layer on the leaf is also there for

The _____ is the skin like layer of cells found on both the top and the bottom surface of the leaf.

The epidermis may be _____ thick.

Directly beneath the upper epidermis is a layer of cells that are

These standing cells are responsible for most of the

_____ in the leaf and are called the **palisade mesophyll**.

Located under the palisade mesophyll are loosely packed cells called the

The **spongy mesophyll** forms air spaces that hold raw materials to be used and products of photosynthesis.

The lower epidermis has _____ in it for

The holes, _____, can open and close.

The opening and closing is controlled by the _____, which surround each stoma.

Many different types of leaves exist.

Some leaves have _____ to hot, dry climates by

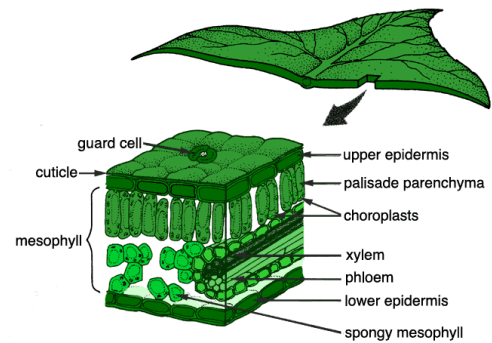
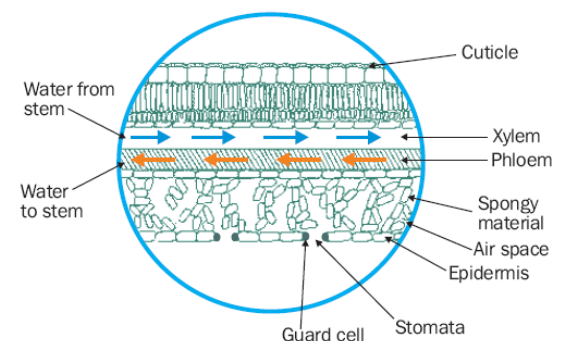
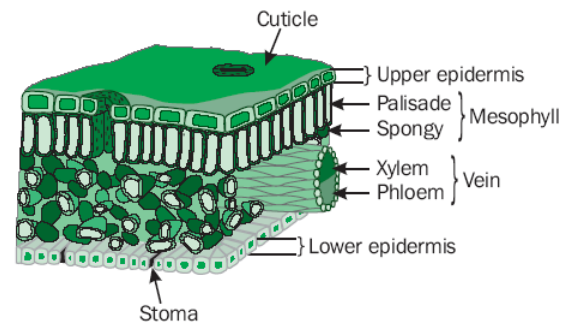


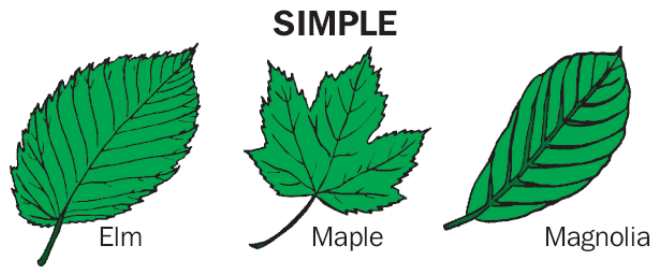
Figure 12a. Leaf cross section



Some leaves have very large blades to

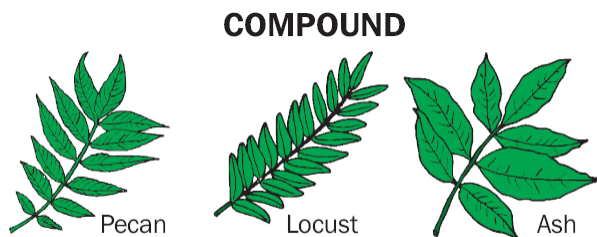
In some leaves, the blade is broken into several sections.

A leaf that has only _____ on its petiole is called a _____. Most plants have simple leaves.



In some leaves, the blade is divided into three or more sections.

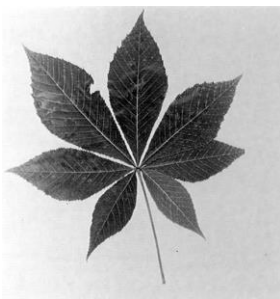
A leaf with _____, called _____, is said to be a _____.



There are many different kinds of compound leaves.

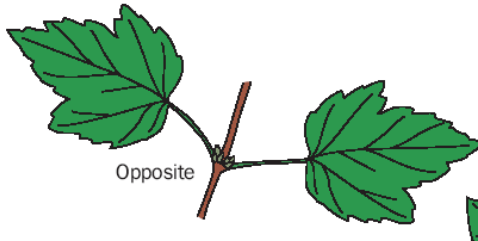
A _____ leaf has all its leaflets attached to a common point.

A _____ leaf has multiple leaflets attached along a rachis or axis.



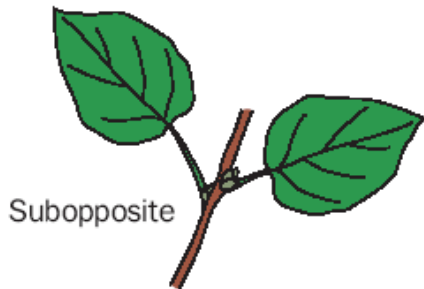
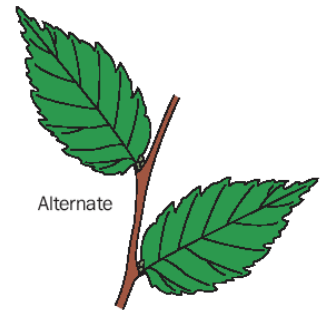
The arrangement of leaves on a stem varies from one genus to another.

Leaves are arranged along stems in _____ major ways.



When leaves and buds are arranged directly across from each other on a stem they are said to be _____.

Leaves and buds that are spaced along a stem in an alternating fashion are termed _____.



A third arrangement is _____, which refers to a condition where leaves and buds are not spaced far enough apart to be called alternate nor perfectly opposite.

When three or more leaves and buds are attached at a node, the arrangement is called _____.

