LEAF STRUCTURE

Learning outcomes

- **To Students will be able to Know**

1. Different types of leaf, forms and their shapes

2. Taxonomic classification of the plants based on the leaf structure.

What are leaves?

- The leaf is the primary photosynthetic organ of the plant.
- It consists of a flattened portion, called the blade, that is attached to the plant by a structure called the petiole.
- Sometimes leaves are divided into two or more sections called leaflets.

Main Functions of the Leaf

- **Photosynthesis:** Process by which plants use the sunlight energy to **produce glucose** from carbon dioxide and water

- **Cellular Respiration:** involves using the sugars produced during photosynthesis plus oxygen to **produce energy** for plant growth

- **Transpiration:** the loss of water from the plant through evaporation at the leaf surface

External Structure of Leaves

- **Lamina (Leaf Blade):** It is the large broad green surface of the leaf
- **Petiole (Leaf Stalk):**Petiole is the thin stalk that attaches the leaf to the main stem or branch
- **Leaf apex (Leaf Tip):** It is the terminal part of the leaf
- **Midrib (Main Vein):** It is the large central thick vein of the leaf that runs through the leaf blade from its base to its apex.
- **Veins:** Leaf veins branch from the midrib of the leaf and contain vascular tissue of the leaf (xylem and phloem)
- **Leaf margin (Leaf Edges):** the edge of the leaf lamina lying between the apex and base

LEAF TYPES

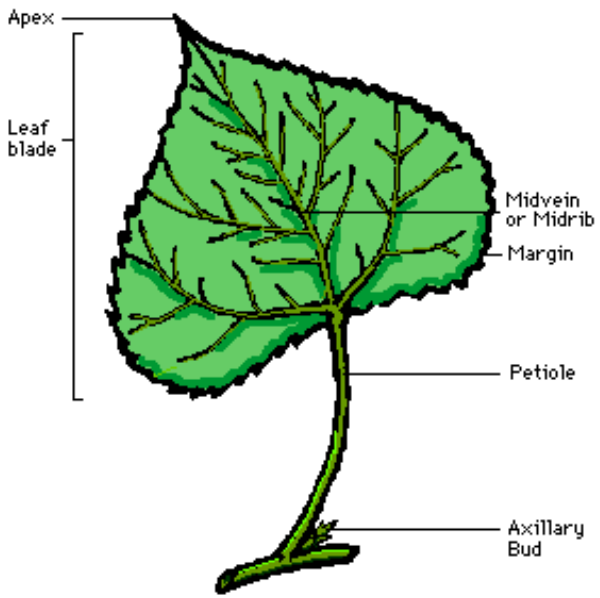
Simple

Compound

Peltate

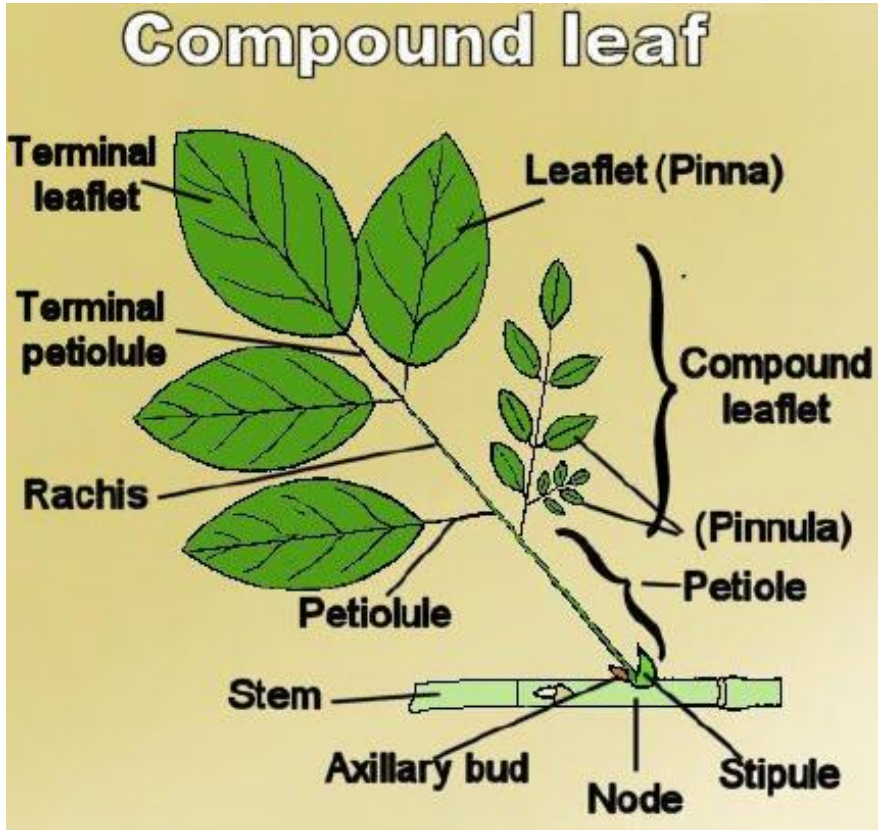
Perfoliate

Simple leaf = undivided blade with a single axillary bud at the base of its petiole.



Simple Leaf: Poplar

Compound leaf = blade divided into leaflets, leaflets lack an axillary bud but each compound leaf has a single bud at the base of its petiole



Peltate leaves = petioles that are attached to the middle of the blade

Perfoliate leaves: a leaf with the base united around--and apparently pierced by the stem

Draw the four different types of leaves

Give example of each of the plant

Give taxonomic classification of each of the plant

REFERENCE

1. Plant anatomy by James D. Mauseth

2. Plant Anatomy (A Concept-Based Approach to the Structure of Seed Plants)

1. Plant Anatomy: An Applied Approach / Edition 1 by David F .


thank you!