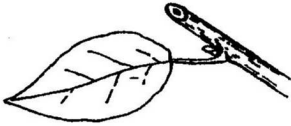


Leaf Characteristics

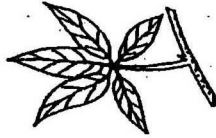
Characteristics of broad leaves (deciduous)

- Simple leaf – leaf having only a single blade

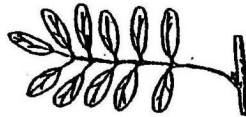


- Compound leaf – leaf having more than a single leaf blade

-Palmately compound leaf – A compound leaf with leaflets radiating from a common point at the end of the stem or petiole, like the fingers of a hand

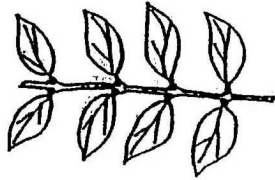


-Pinnately compound leaf – A compound leaf with leaflets that are arranged on either side of a central main stem or petiole.

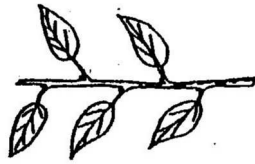


Leaf Arrangement

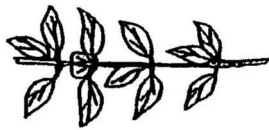
-Opposite leaves – two leaves grow opposite each other at the same location or node



- Alternate leaves – a single leaf grows from its own location or node and the leaves alternate sides along the stem

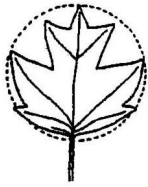


- Whorled leaves – three or more leaves growing from a single location or node.

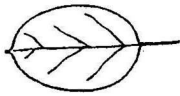


Leaf Shapes

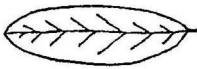
1. Circular or round



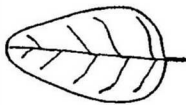
2. Oval



3. Elliptical



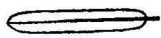
4. Egg or ovate



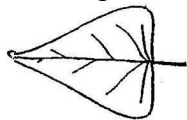
5. Lance



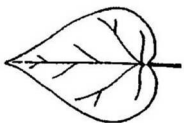
6. Linear



7. Triangular



8. Heart

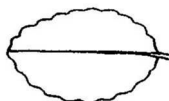


Leaf Margin

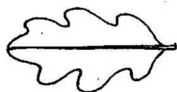
1. Entire or smooth – The edge of the leaf is smooth.



2. Wavy – The edge of the leaf is slightly curved.



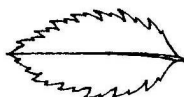
3. Lobed – The edge of the leaf is deeply or mildly indented, number of lobes vary.



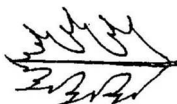
4. Serrate or Toothed – The edge of the leaf is toothed, this may include finely or coarsely toothed.



5. Double Serrate – The edge of the leaf is toothed with small teeth on larger teeth.



6. Bristle tipped and lobed – The leaf edge is lobed in varying degrees and also has hair-like tips.



Leaf Veins

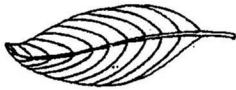
- Parallel veins – Major veins begin at the base, remain more or less parallel, and come together at the tip of the leaf.



- Palmate veins – Main veins begin from the base of the leaf like fingers of a hand.

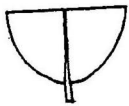


- Pinnate veins – Main veins extend from one large main vein.

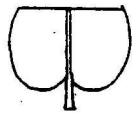


Leaf Base

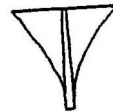
Rounded



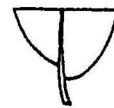
Heart-shaped



Tapering



Uneven



Characteristics of coniferous leaves

1. Needle-like

-cluster or bundle



-single

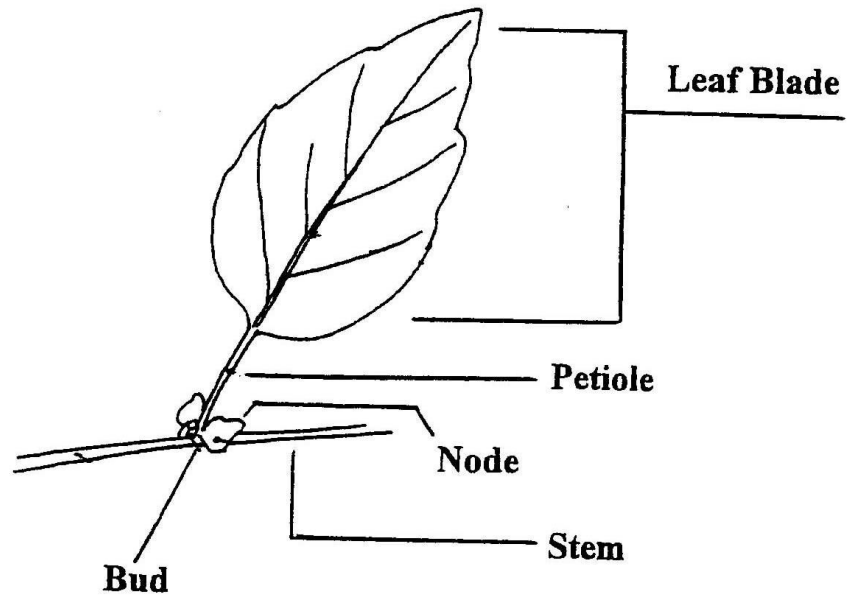


2. Scale like

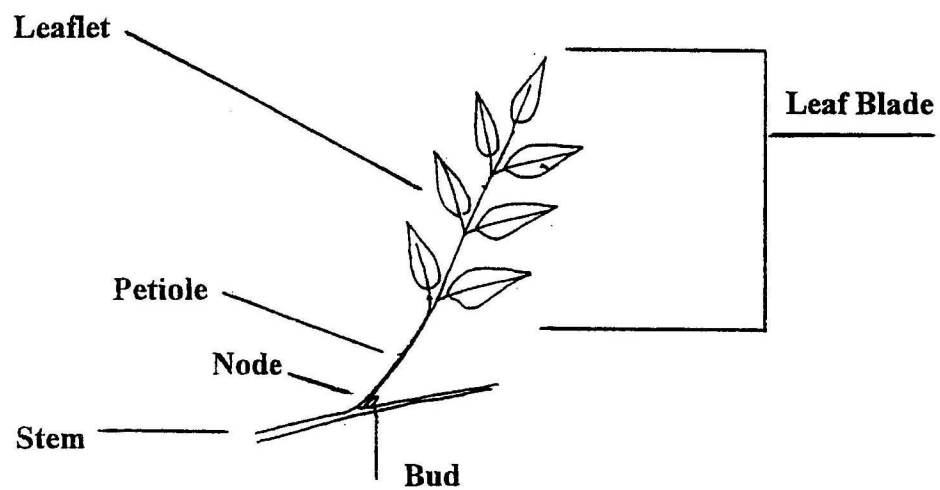


Leaf Structures

Leaf parts of a simple leaf



Leaf parts of a compound leaf



Glossary

Bud	A structure that will become a leaf, a flower, or a new shoot.
Compound Leaf	A leaf that is made up of 2 or more leaflets on the same petiole.
Coniferous	Any cone bearing tree species. Usually trees with needles.
Deciduous	Refers to trees that drop their leaves (broad leaf or needles).
Evergreen	Refers to trees that retain green leaves throughout the year. Life span of an individual leaf may be 2-15 years depending on the species and environmental conditions.
Leaf Blade	The broad, flat part of a leaf.
Leaflet	A leaf like part or blade of a compound leaf. There is no bud at the base of its petiole.
Node	The point on a shoot where a leaf, flower, or bud is attached.
Petiole	Leaf stalk
Simple Leaf	A leaf that contains one blade.
Stem	The primary structure that holds the foliage and flowers.
Terminal Leaflet	The leaflet located furthest from the bud, typically only determined on a pinnately compound leaf.
MAD HORSE	A tool to remind students which trees have opposite and whorled leaf arrangements. Maple , Ash , Dogwood , are opposite leaf arrangements and HORSE chestnut is whorled leaf arrangement.