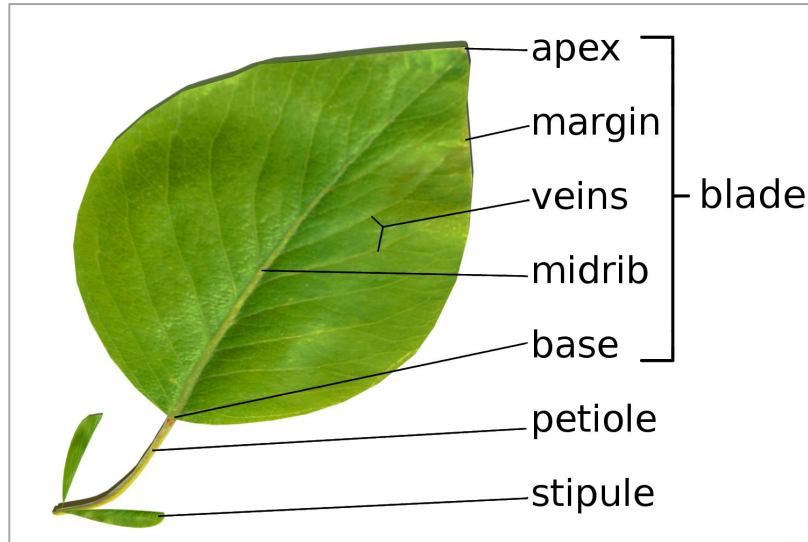


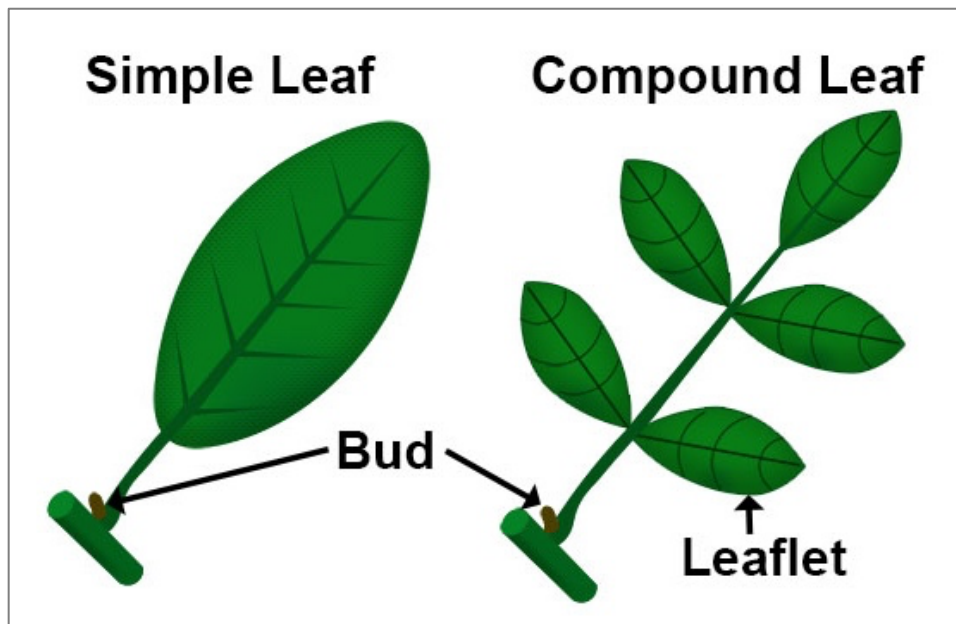
Leaf & Tree Forms, Patterns and Parts

LArch 245 Fall 2023 | Prof. Ken Tamminga



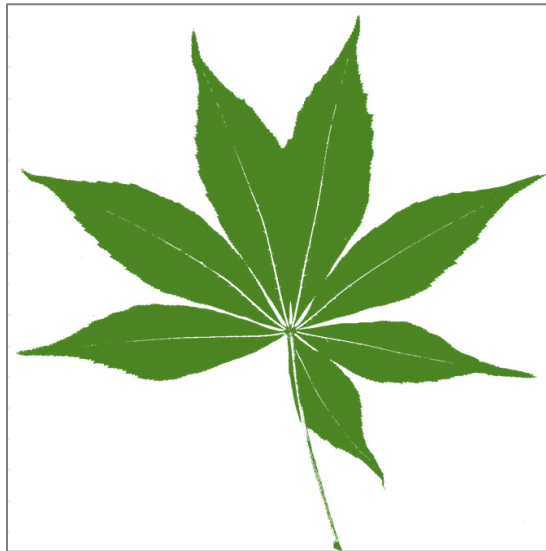
Parts of a Leaf

Source: <https://www.thoughtco.com/plant-leaves-and-leaf-anatomy-373618>



Simple and Compound Leaf Shapes

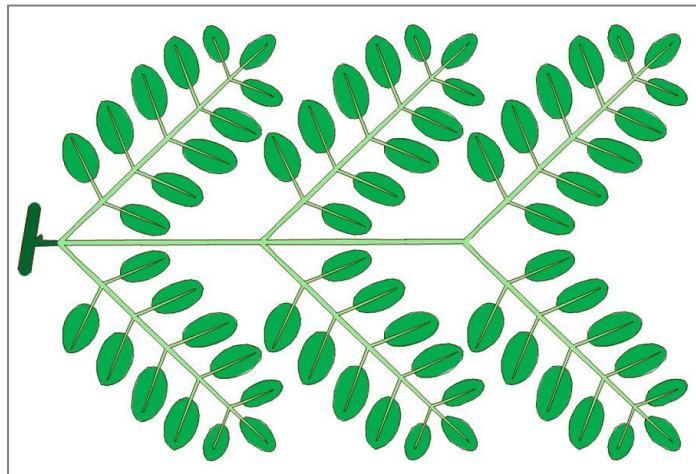
Source: <http://wildadirondacks.org/adirondack-wildflowers-wild-sarsaparilla-aralia-nudicaulis.html>



Palmately Compound Leaf

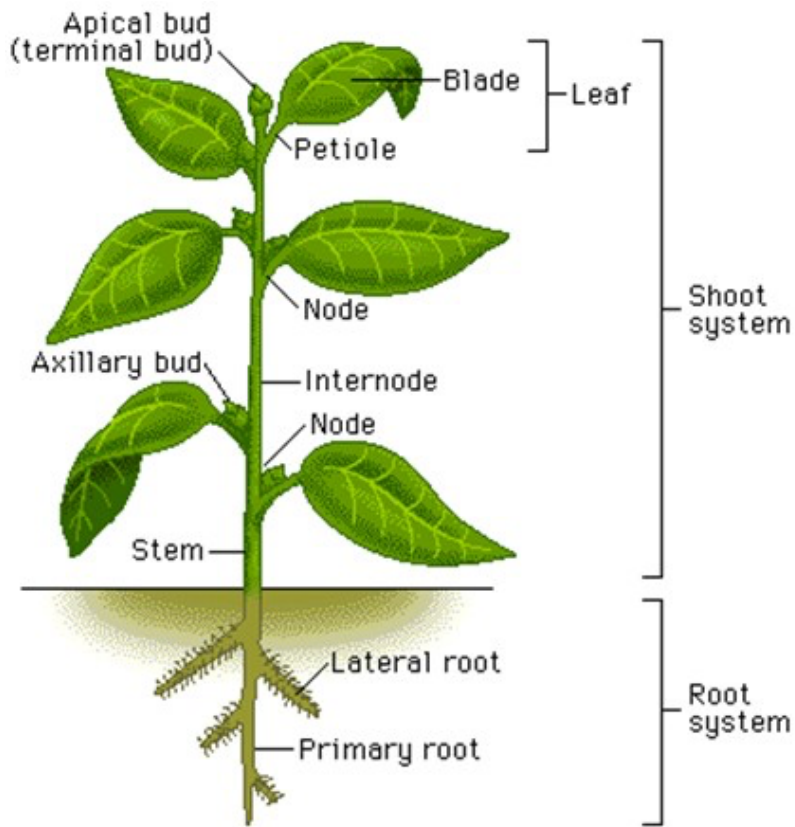


Pinnately Compound Leaves



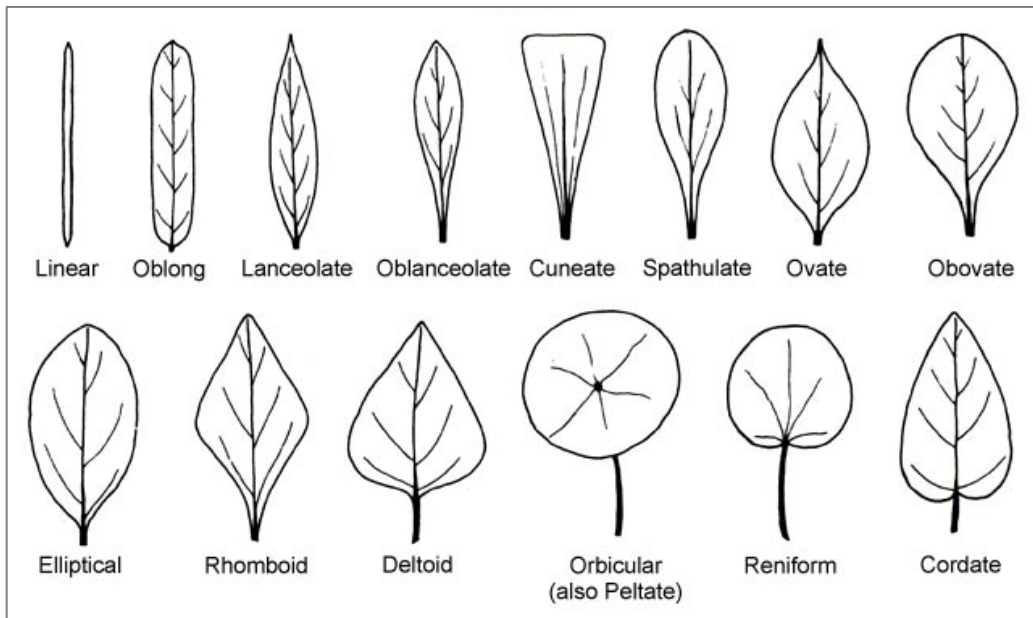
Bi-pinnately Compound Leaf (or, Double Pinnately Compound Leaf)

Source, above 3 images: <https://www.thoughtco.com/simple-and-compound-tree-leaf-4051112>



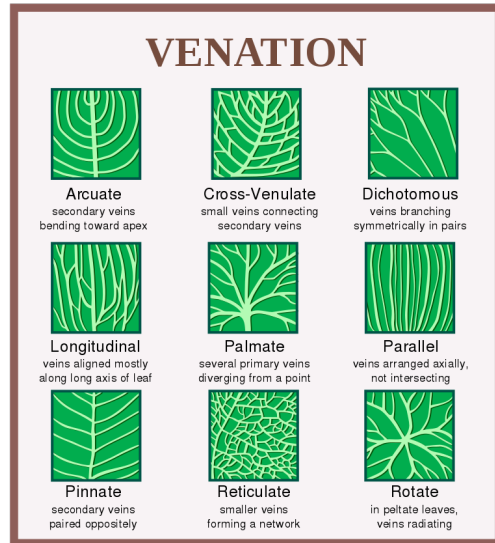
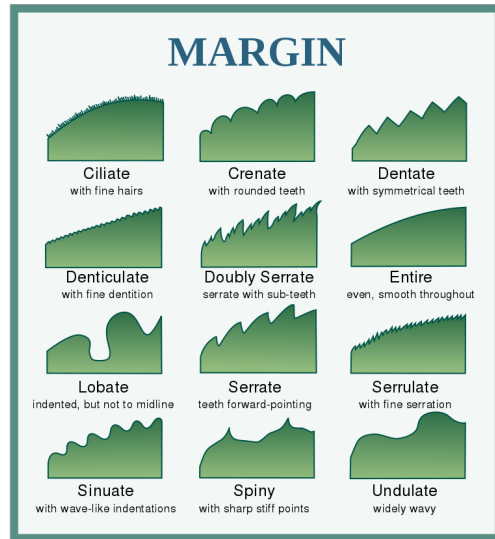
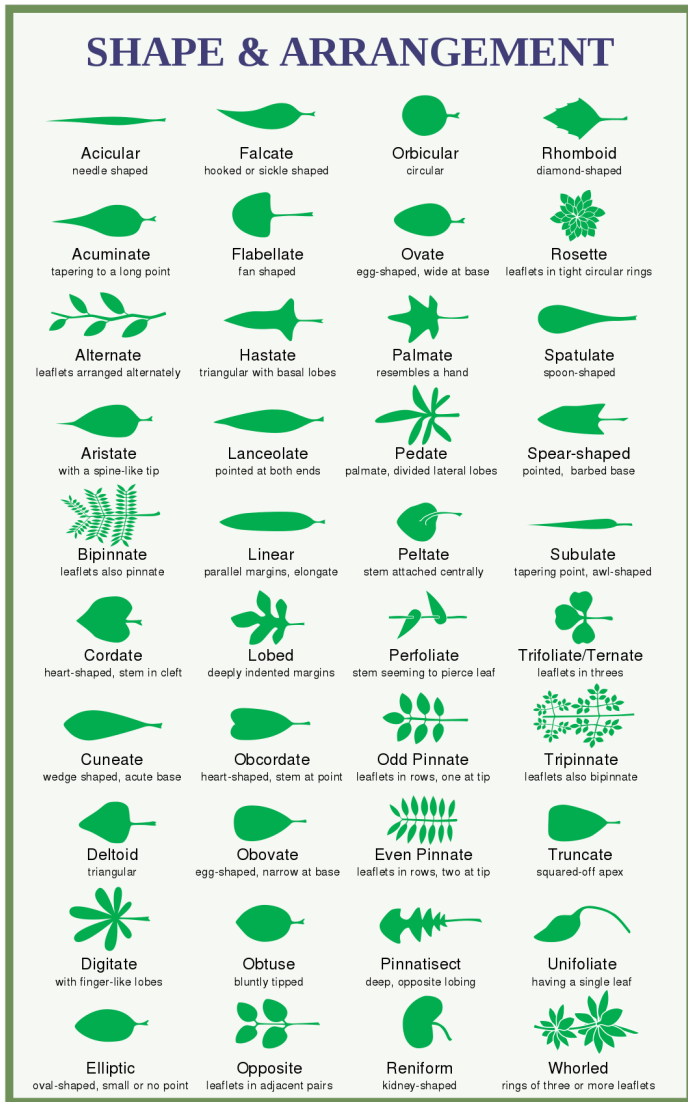
Plant Parts

<https://slideplayer.com/slide/5775952/>



Leaf Shapes

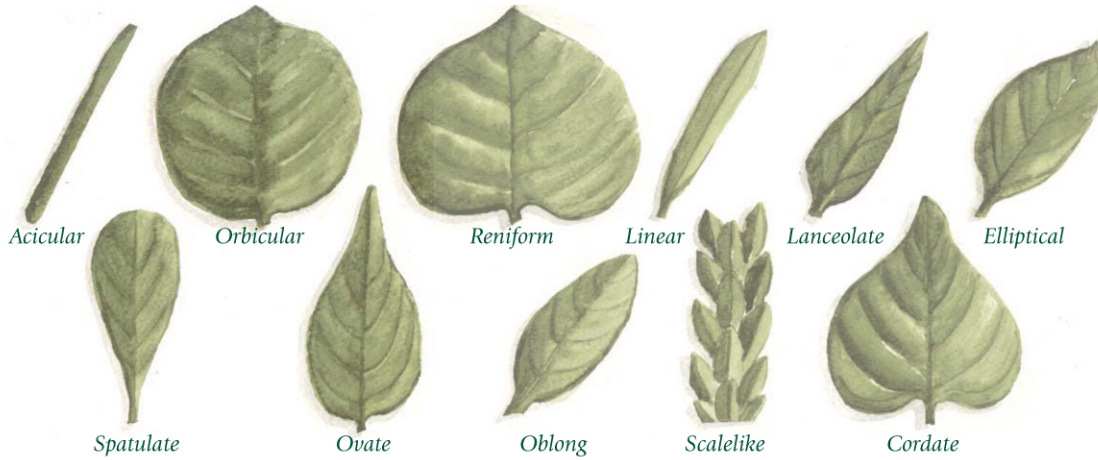
Source: <http://www.liberaldictionary.com/reniform/>



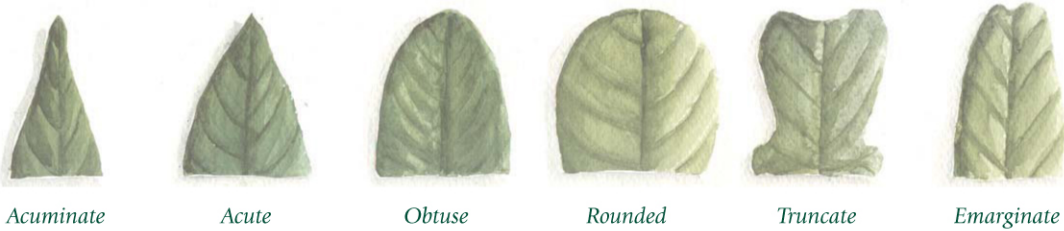
Leaf Shape, Arrangement, Margins (edges) and Venation (veins)

Source: McSush. <https://commons.wikimedia.org/w/index.php?curid=7681206>

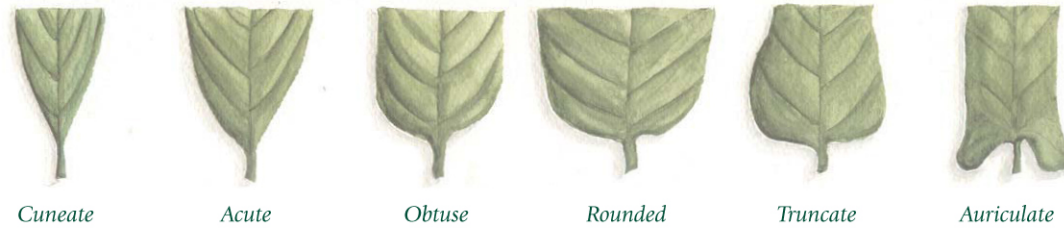
SHAPES



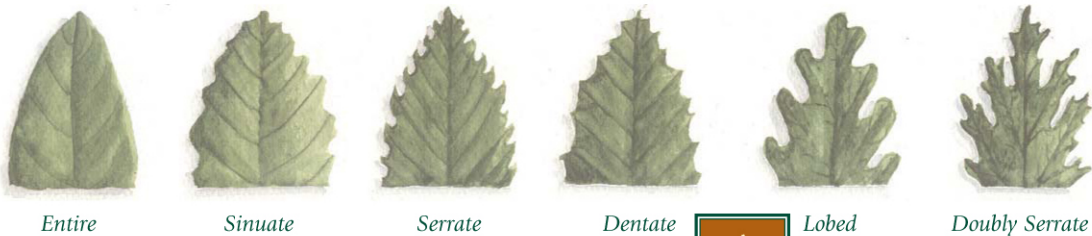
TIPS



BASES



MARGINS



VENATION

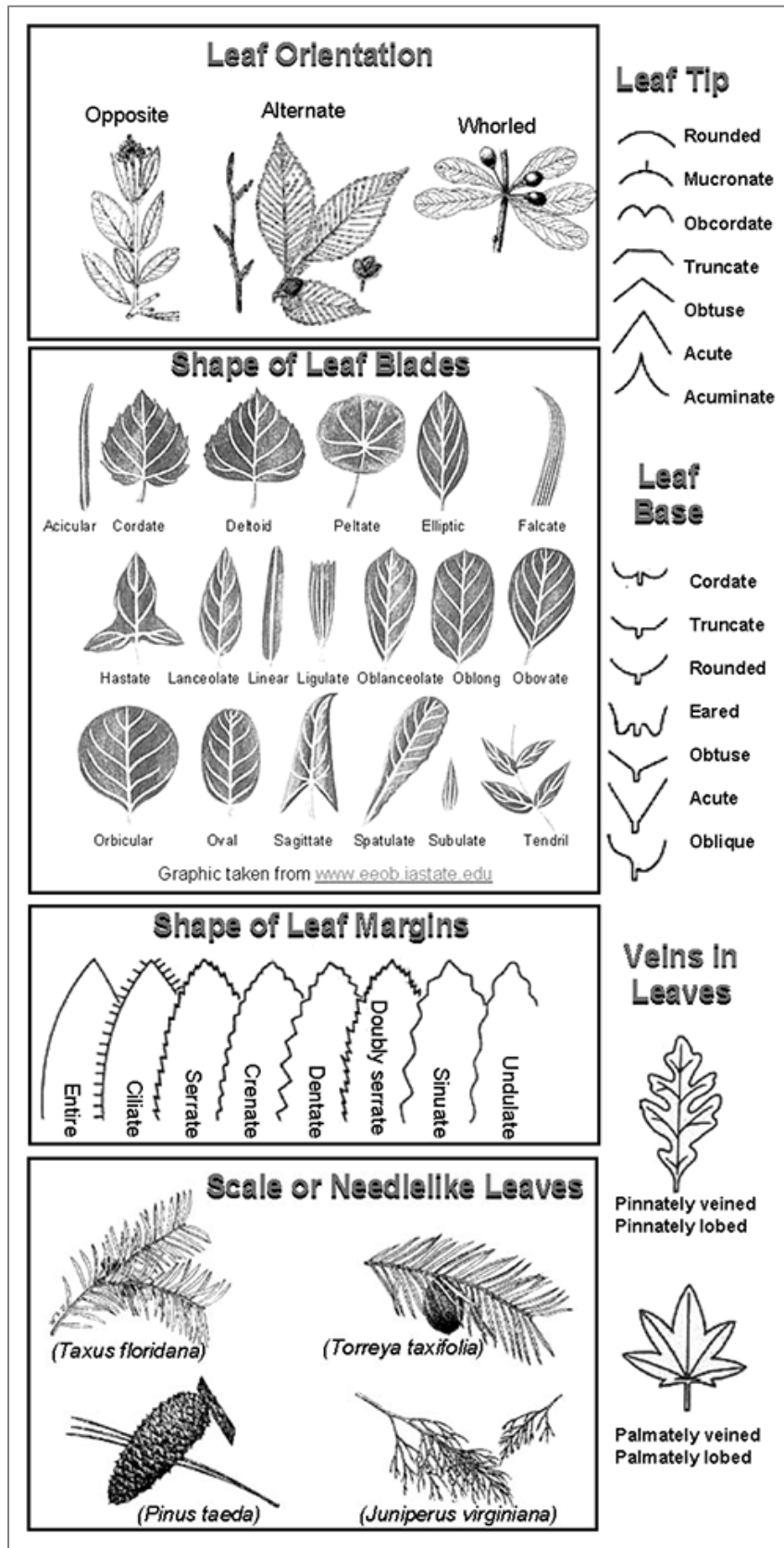


Although leaves of different tree species have the same basic parts — blade, veins, tip, base, petiole, stipule, margin — the appearance of these parts varies among species. Because these variations are easy to distinguish, examination of the leaves is the most common way to identify trees. First look at the overall shape of the leaves. Then look at the characteristics of the individual parts. What does the leaf's edge, or margin, look like? How are the leaf's veins arranged? What is the shape of the leaf's base and tip? By considering each of these characteristics, you can usually determine the tree's identity.

NCEA
 North Carolina Forestry Association
 1600 Glenwood Ave., Raleigh, NC 27608
 (919) 834-3943 or (800) 231-7723
 Web site: www.ncforestry.org

Partial funding for this project was provided by the N.C. Division of Forest Resources and 1219A Forest Service, Southern Region through the Urban and Community Forestry Grant program.

Leaf Shapes



Leaf Shapes and Patterns

Source: http://ftof.freshfromflorida.com/tree_key1.php



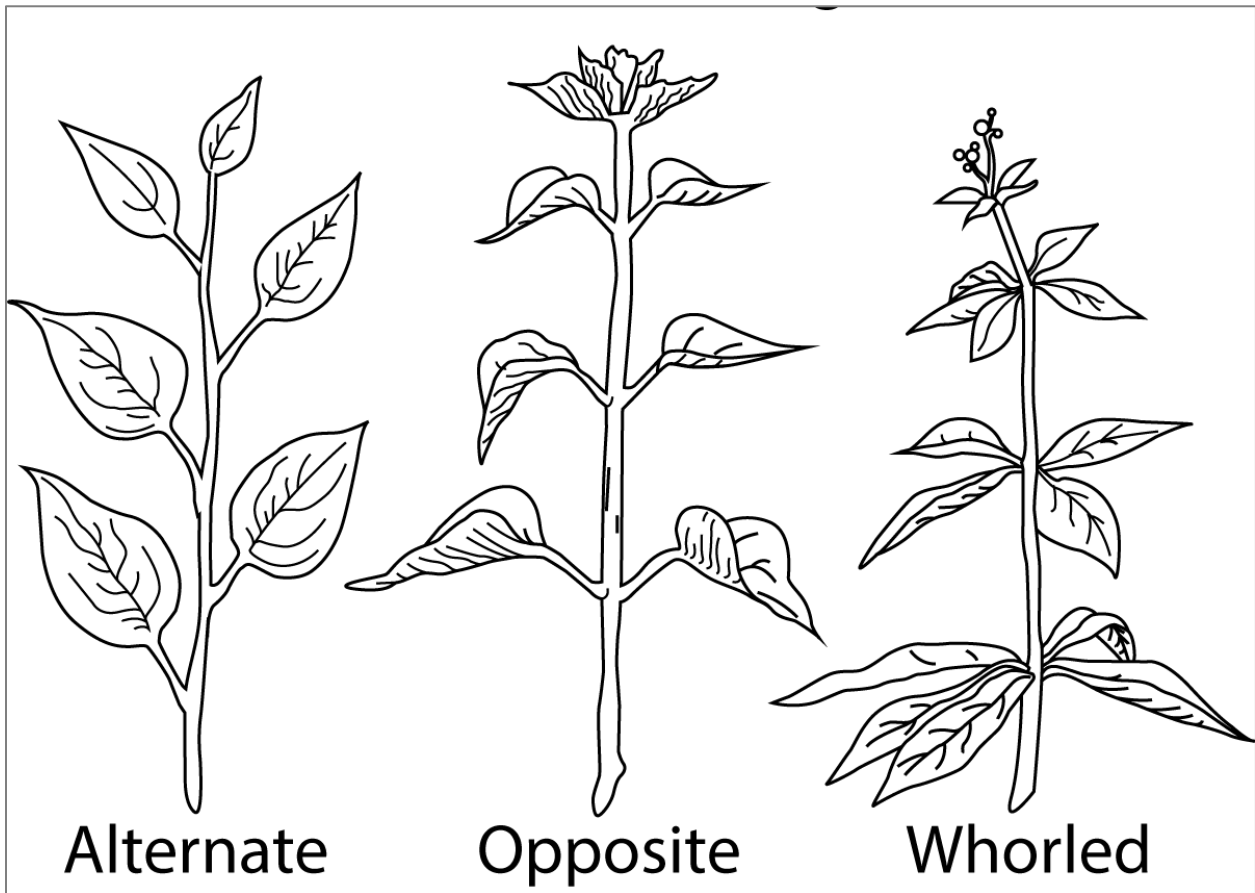
**ALTERNATE
BUDS**

**OPPOSITE
BUDS**

**SPIRAL
BUDS**

Common Leaf Bud Arrangements

Source: <https://www.familyhandyman.com/landscaping/how-to-identify-tree-species/>



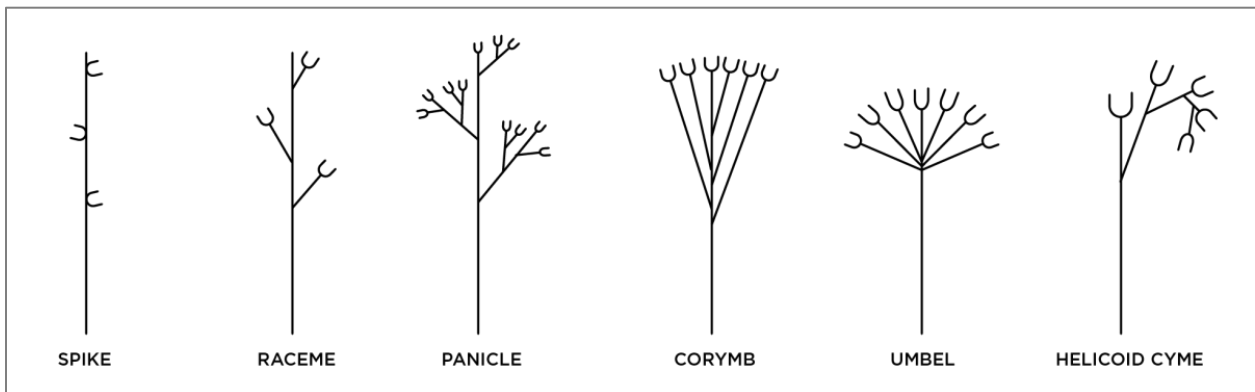
Alternate

Opposite

Whorled

Common Leaf Arrangements

Source: <https://cropwatch.unl.edu/soybean-management/dicot>



SPIKE

RACEME

PANICLE

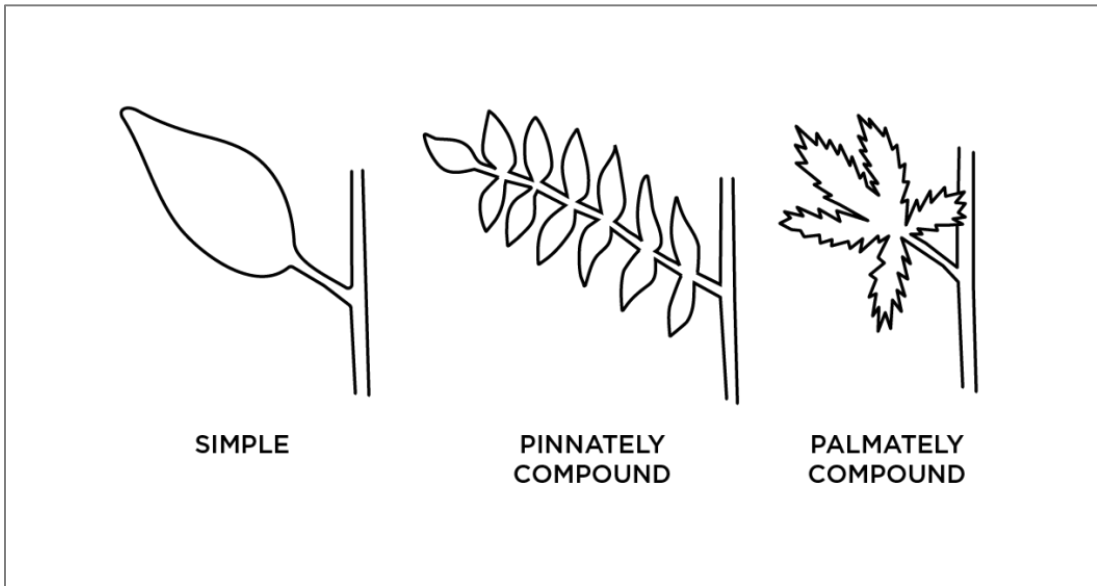
CORYMB

UMBEL

HELICOID CYME

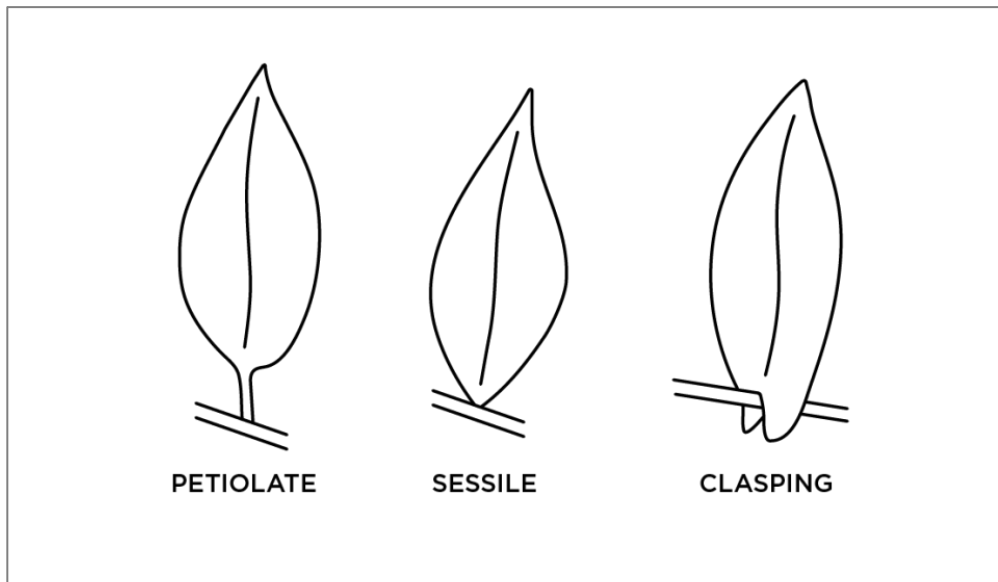
Inflorescence (flower) Types

Source: <https://cropwatch.unl.edu/soybean-management/dicot>



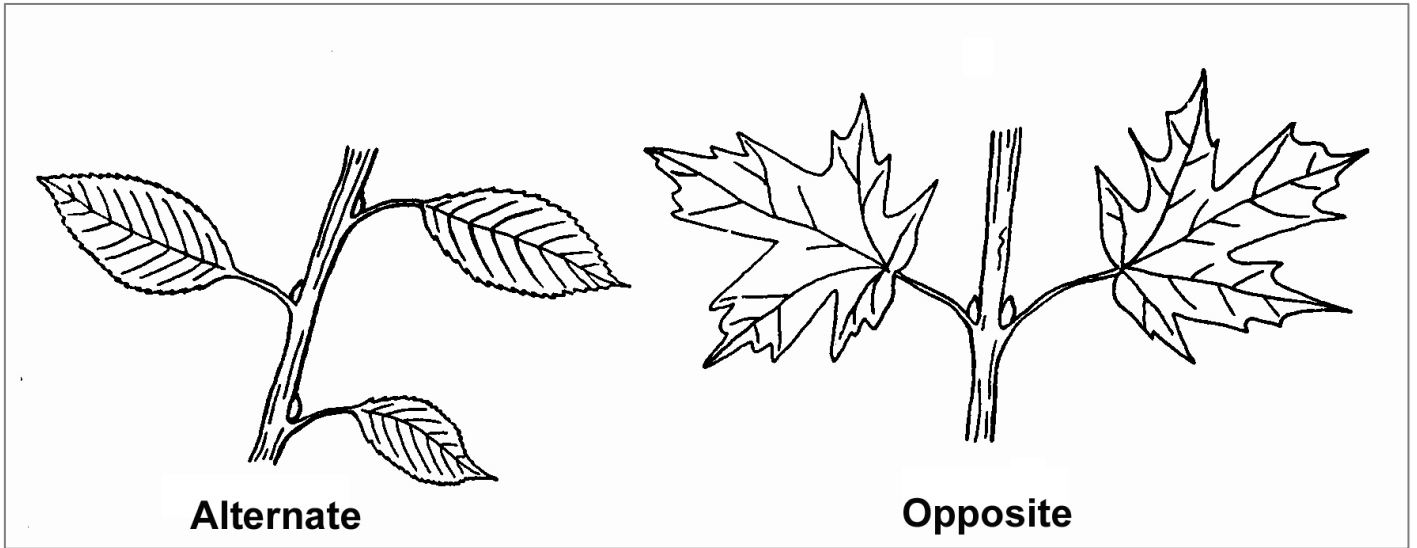
Common Leaf Types

Source: <https://cropwatch.unl.edu/soybean-management/dicot>



Common Leaf Attachment Patterns

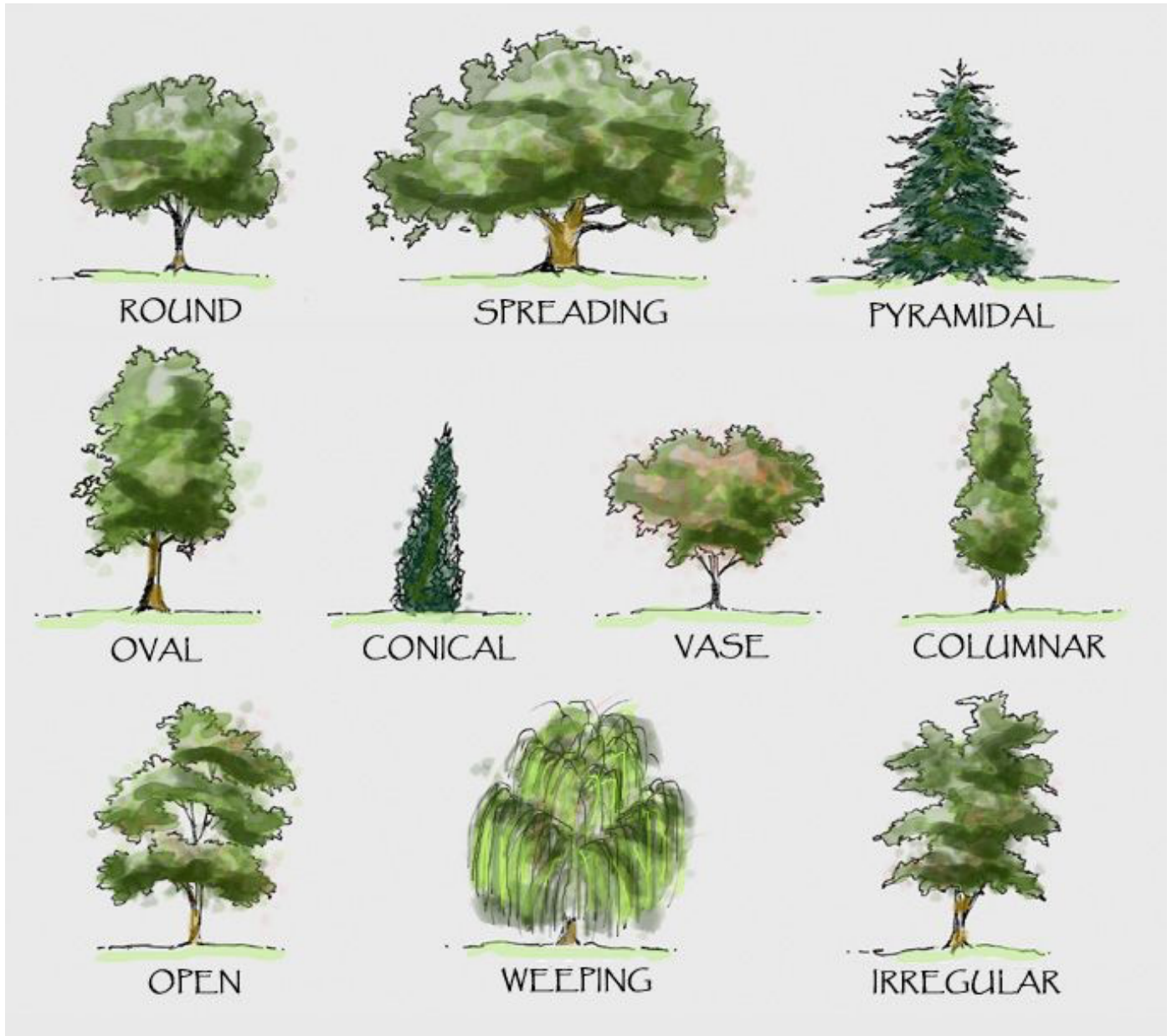
Source: <https://cropwatch.unl.edu/soybean-management/dicot>



Alternate: Each node has only one bud or leaf. Plants can also have sub-alternate branching when there is an uneven spacing between nodes.

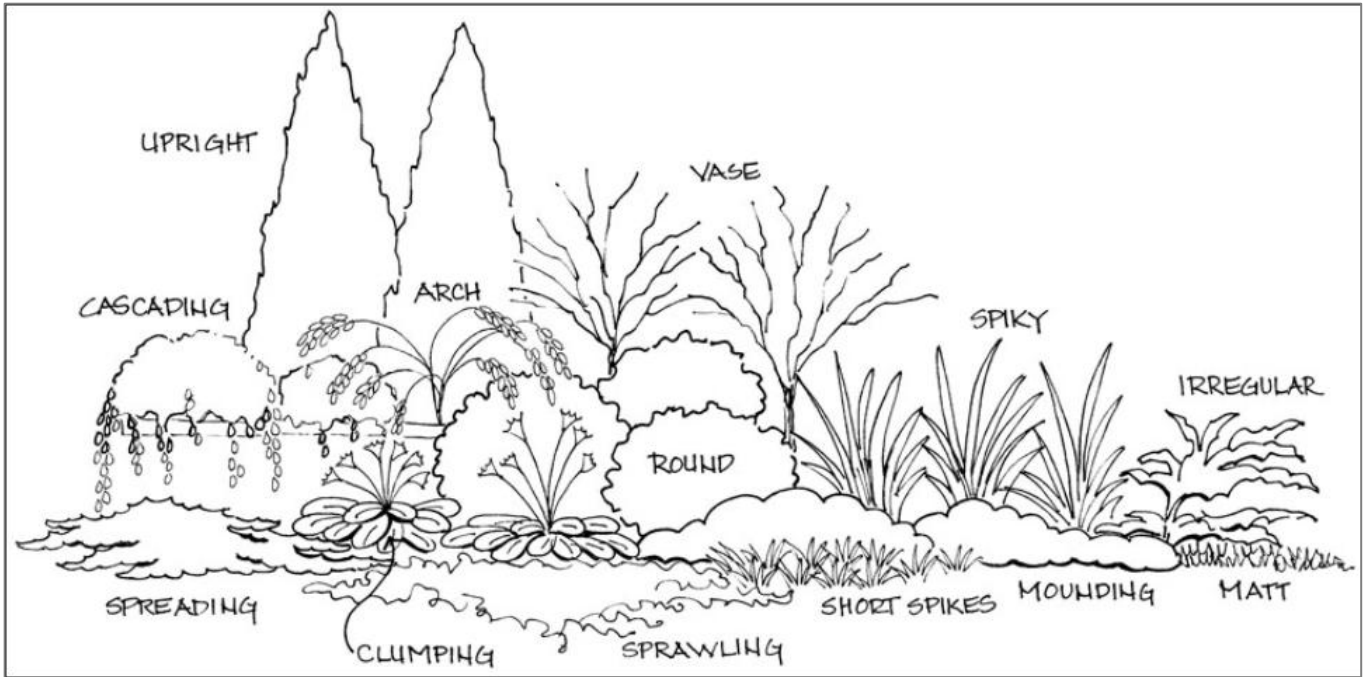
Opposite: Pairs of buds or leaves occur at each node.

	<p>Terminal Bud: The bud that forms at the end of the twig, after a full year of growth.</p> <p>Lateral Buds: The other buds along the length of the twig.</p> <p>Pseudo-terminal Bud: A lateral bud at the end of a twig where the branch has broken or died. It can be distinguished from a terminal bud by the presence of a leaf scar (see below).</p> <p>Bud Scales: Pseudo-leaves that protect the vascular tissue inside the bud.</p> <p>Lenticels: Dot-like pores that allow for gas exchange. Depending on the plant, these may or may not be visible.</p> <p>Leaf Scar: A structure below the bud where the previous year's leaf was attached.</p> <p>Bundle Scar: Markings inside the leaf scar from where the veins of the previous leaf were connected to the twig.</p> <p>Ring Scar: The scar from the previous year's terminal bud.</p> <p>Node: The location on the stem where buds and leaves attach.</p> <p>Internode: The space between two nodes.</p> <p>Pith: The soft tissue in the center of the twig.</p>
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Tree Forms

Source: <https://www.pinterest.com/pin/366128644683099486/?lp=true>



Shrub and Herbaceous Forms

Source: <https://edis.ifas.ufl.edu/>