Plant Leaves
Venations, Margins, and Arrangements

Basic Leaf Structures:
• Blade - what we all call a leaf (lamina)
• Petiole - attaches blade to stem
• Veins
• Midrib - main vein

Petiolate or Sessile?
• Petiolates - leaves attach to the stem with a petiole.
• Sessile - leaves lack a petiole and the blade attaches directly to the stem.
Simple or Compound?

• Simple - a single blade (with or without a petiole) attached to the stem

• Compound - the blade of the leaf is divided into multiple smaller blades called leaflets (each leaflet does not attach to the stem)

Venation

• Parallel

• Pinnate

• Palmate

Parallel Venation

• there are several veins that run parallel to each other

• the veins run from the base of the leaf to the leaf tip.
Pinnate Venation
- Single centrally positioned midrib
- Numerous smaller veins branch out from the midrib
- Veins produce a feather-like appearance

Palmate Venation
- Multiple main veins
- All the main veins arise from a common point at base of leaf and radiate outward
- Think of palm of your hand—all fingers connect at the palm and radiate outward

Margins
- Smooth / Entire
- Serrate
- Lobed
- Palmatifid
Smooth / Entire

Serrate

Lobed
**Palmatifid**

**Arrangement**
- Relates to how the leaves are located around the stem of the plant
- Alternate
- Opposite
- Whorled

**Alternate**
- Leaves alternate (one up and one down)
Opposite
• Leaves are positioned directly opposite one another on the stem of the plant.

Whorled
• Three or more leaves are located in a circle around the stem of the plant.

What venation does this plant have?
What can you tell about this plant? Hint: those are leaves—not leaflets.