Plant Structure & Function

Plant Structure

- Root System
- Shoot System
  - Stem
  - Leaves
  - Flowers

Root System

Function

- Anchors
- Absorption
- Transportation
- Storage

Structure

- Xylem
  - Water & minerals from roots to leaves
- Phloem
  - Sugars from leaves to roots

Root Types

- Taproots
- Fibrous Roots
- Adventitious

Shoot System - Stems

Function

- Supports leaves
- Grows toward light
- Transports substances between roots and leaves

Structure

- Herbaceous
  - Soft and green
  - Do not survive winter
- Woody
  - Increases in size due to vascular cambium
  - Survives winter

Shoot System - Stems

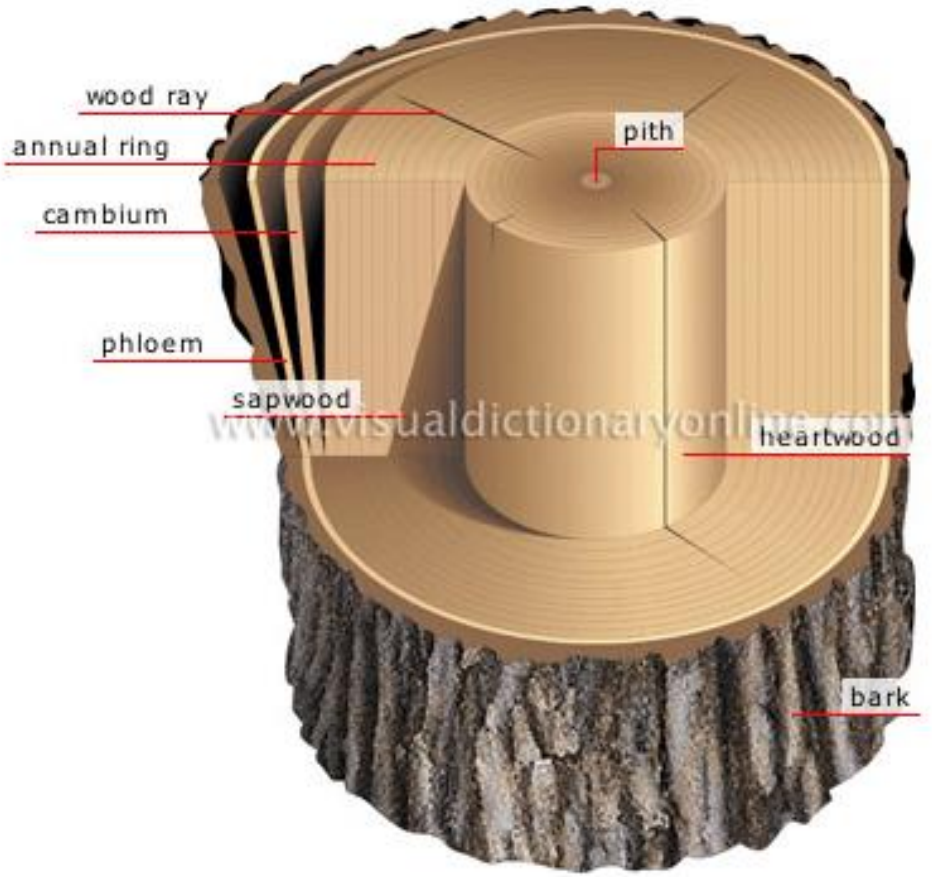
Herbaceous Stem

Woody Stem

Woody Stems

Key terms to know:

- Vascular Cambium
- Sapwood
- Heartwood
- Cork/Bark
- Resin/oil



Shoot System - Leaves

Function

- Photosynthesis
  - Uses carbon dioxide
  - Produces oxygen and glucose

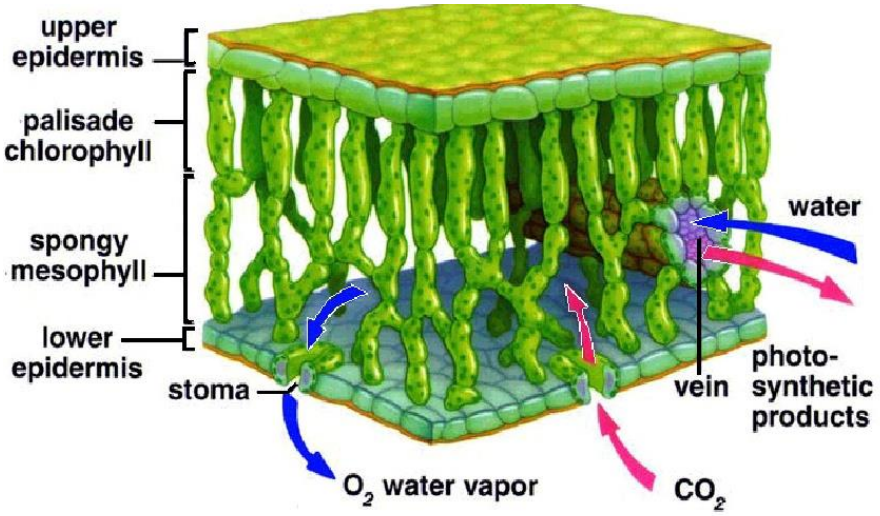
Structure

- Designed to capture maximum light and minimize water loss

Shoot System - Leaves

Key terms to know:

- Cuticle
- Epidermis
- Palisade layer
- Spongy mesophyll
- Veins (xylem & phloem)
- Stoma & guard cells
- Chlorophyll (plastids)
- Turgor pressure



Angiosperms

- Known as the flowering plants
- Divided into two types
    - Monocotyledons (monocots)
    - Dicotyledons (dicots)

Monocots vs. Dicots

	Embryos	Leaf venation	Stems	Roots	Flowers
Monocots	 One cotyledon	 Veins usually parallel	 Vascular bundles usually complexly arranged	 Fibrous root system	 Floral parts usually in multiples of three
Dicots	 Two cotyledons	 Veins usually netlike	 Vascular bundles usually arranged in ring	 Taproot usually present	 Floral parts usually in multiples of four or five