

Plant Parts and Functions

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Covering:

2014A

2014B

2014C

2014D

Parts of The Plant

- Roots
- Leaves
- Stem
- Flower
- Seed

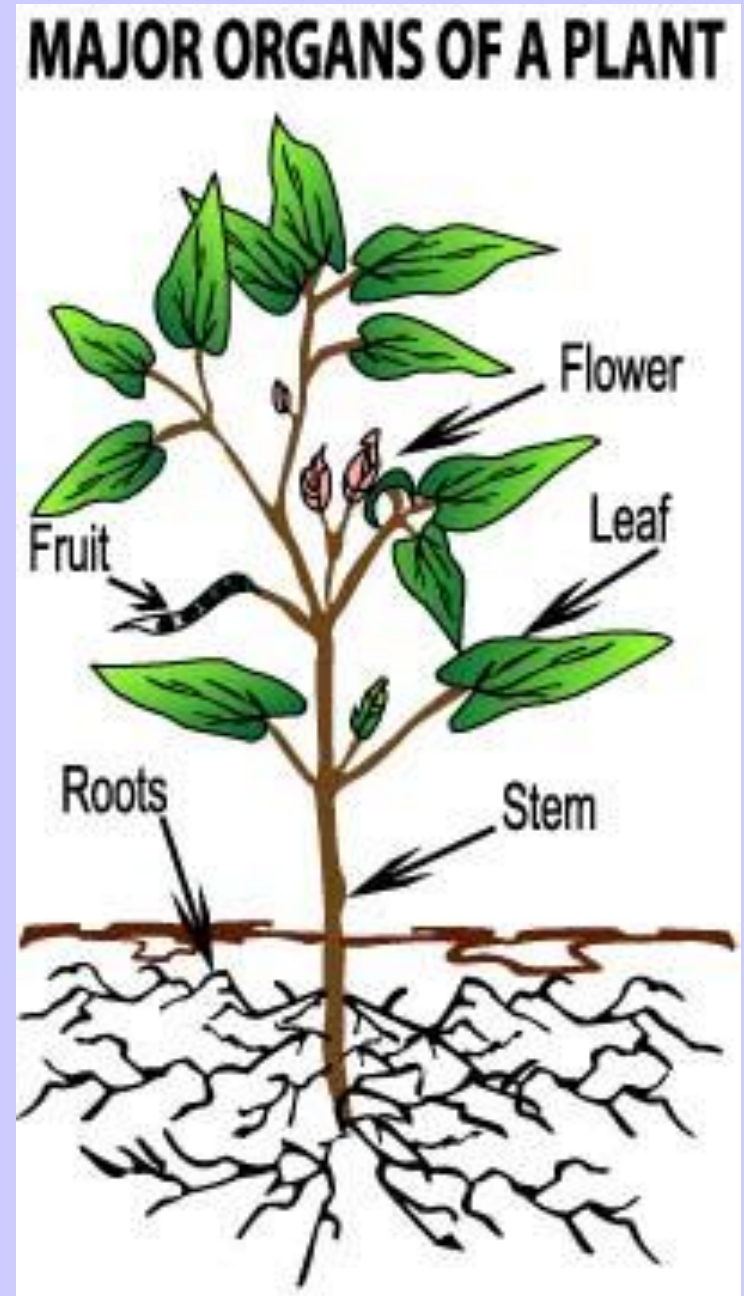
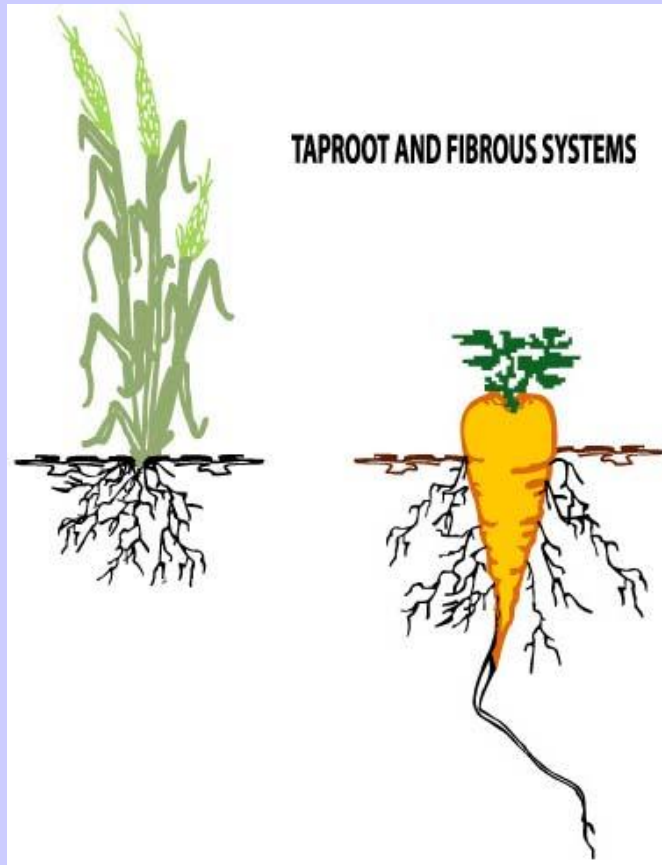


Image found at: www.webinstituteforteachers.org

Roots

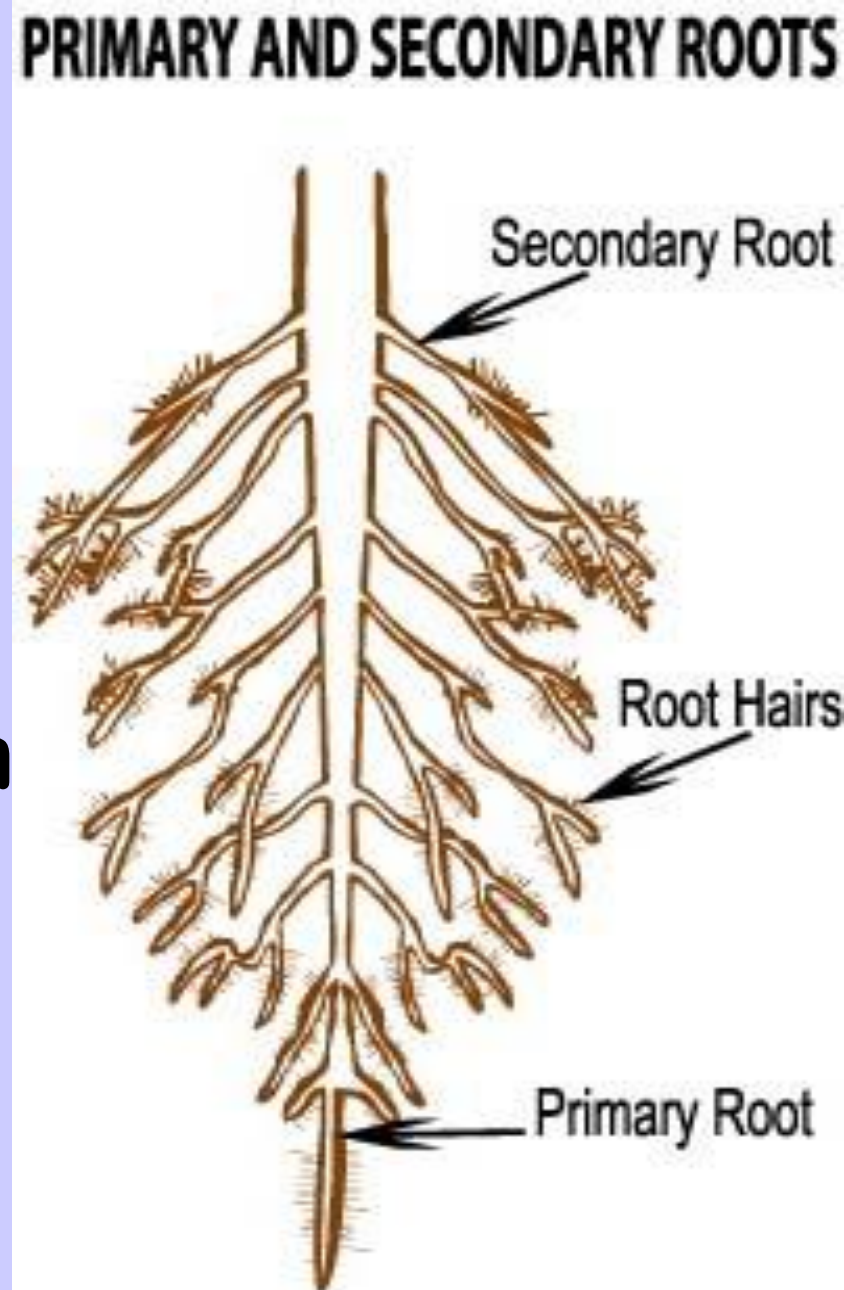
- 2 Types of Root Systems
 - Taproot
 - Fibrous System



Roots

Taproot System

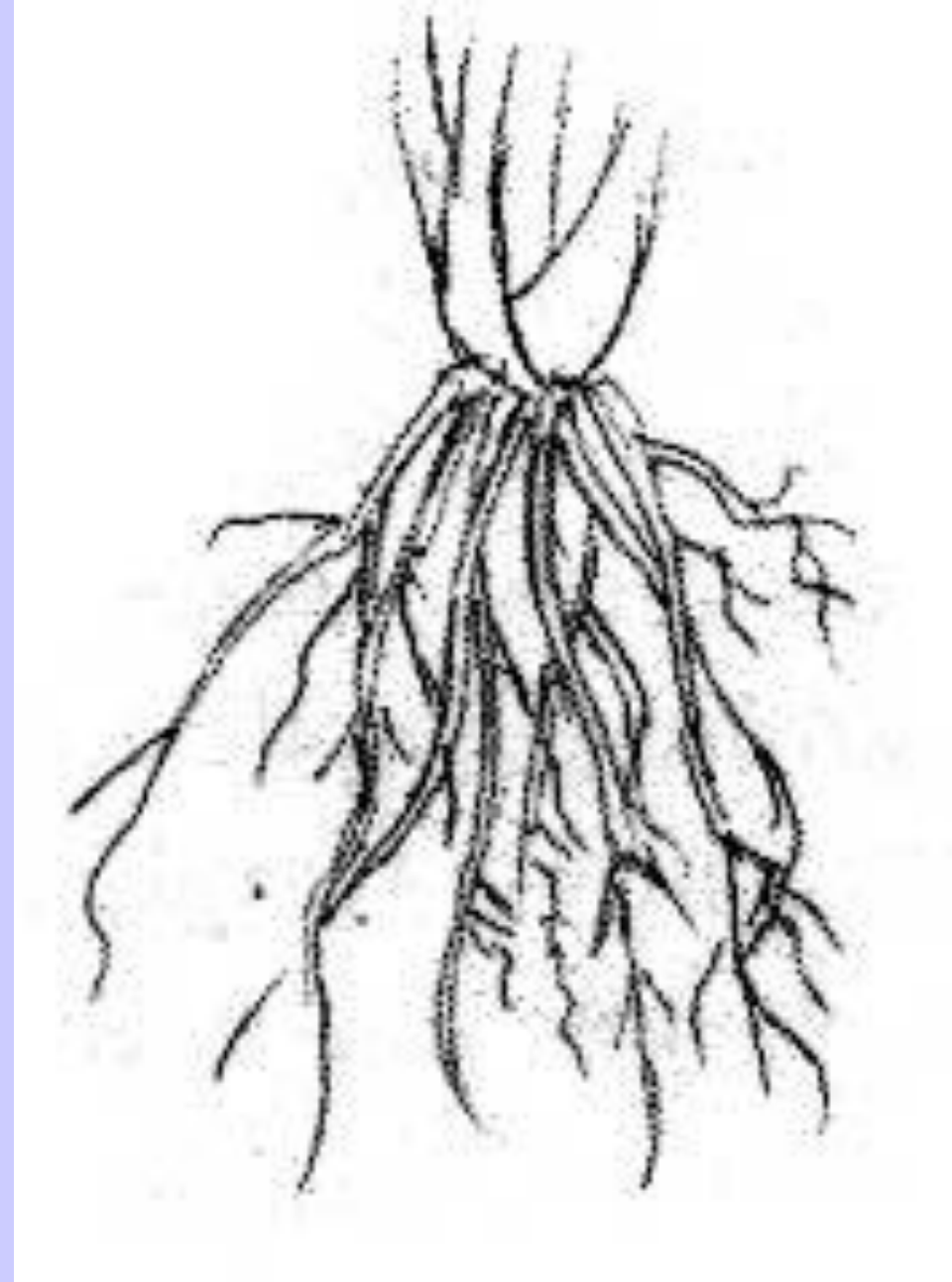
Primary roots grow down from the stem with some secondary roots forming



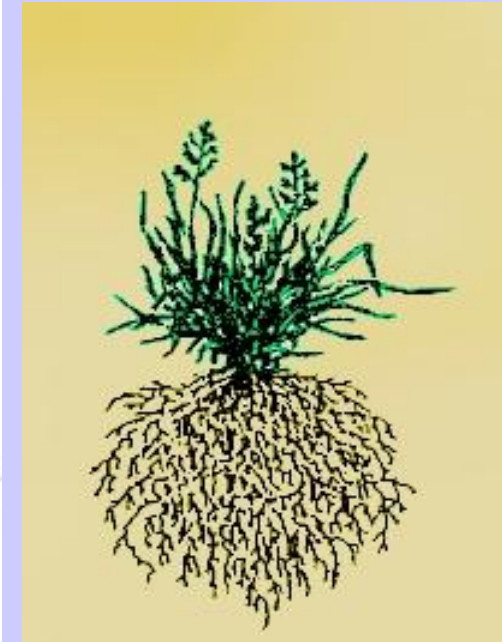
Roots

Fibrous Root System

Small lateral roots that spread out just below the soil surface



Can you identify these root types?



Root Functions

Roots have 4 primary functions

- **Absorption of water and nutrients**
 - performed by root hairs
- **Transportation of water and nutrients to stem**
- **Anchor plant to maintain stability**
- **Store food and water**

Parts of the Root

- **Epidermis**
 - Outermost layer of cells, like the skin of the root
- **Cortex**
 - Tissue inside epidermis that stores starch and other substances for the growth of the root

Parts of the Root

- **Root Cap**
 - Provides protection for the root tip
- **Root Hairs**
 - Site of absorption
- **Vascular Tissue**
 - Within cortex, contains cells that transport water, nutrients, and minerals to all parts of the plant

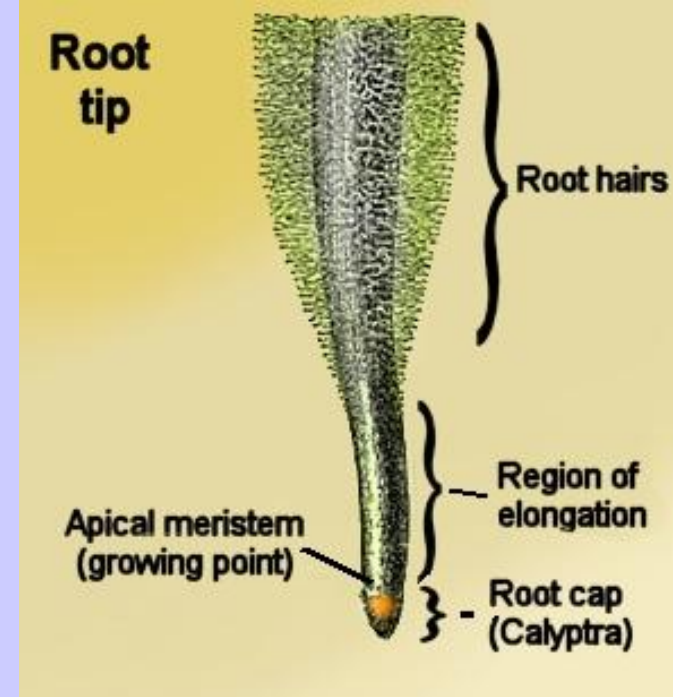


Image found at: www.cactus-art.biz

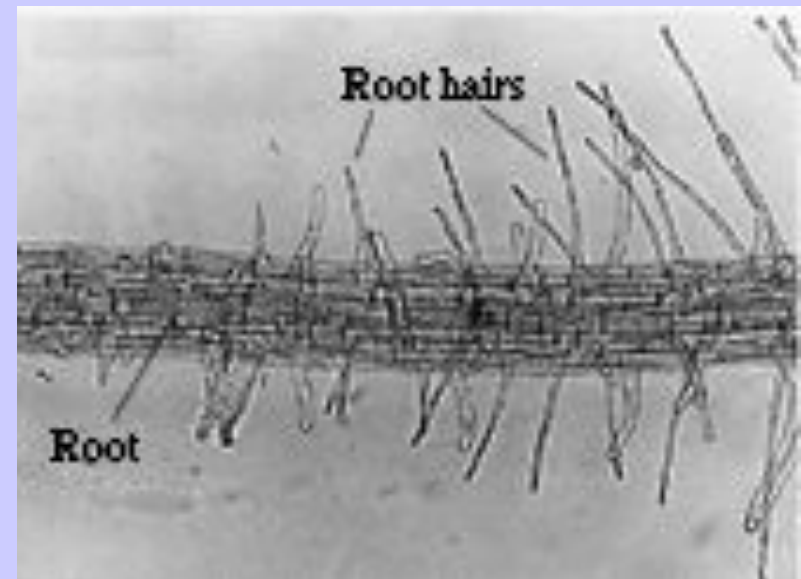


Image found at: www.bio.psu.edu

Important Functions of Leaves

- **Photosynthesis**

- Process that plants use to produce their food



- **Transpiration**

- Loss of water and exchange of carbon dioxide

Leaf Parts

- **Blade**
 - Main body of leaf
- **Petiole**
 - Attaches blade to stem
- **Midrib**
 - Large central vein

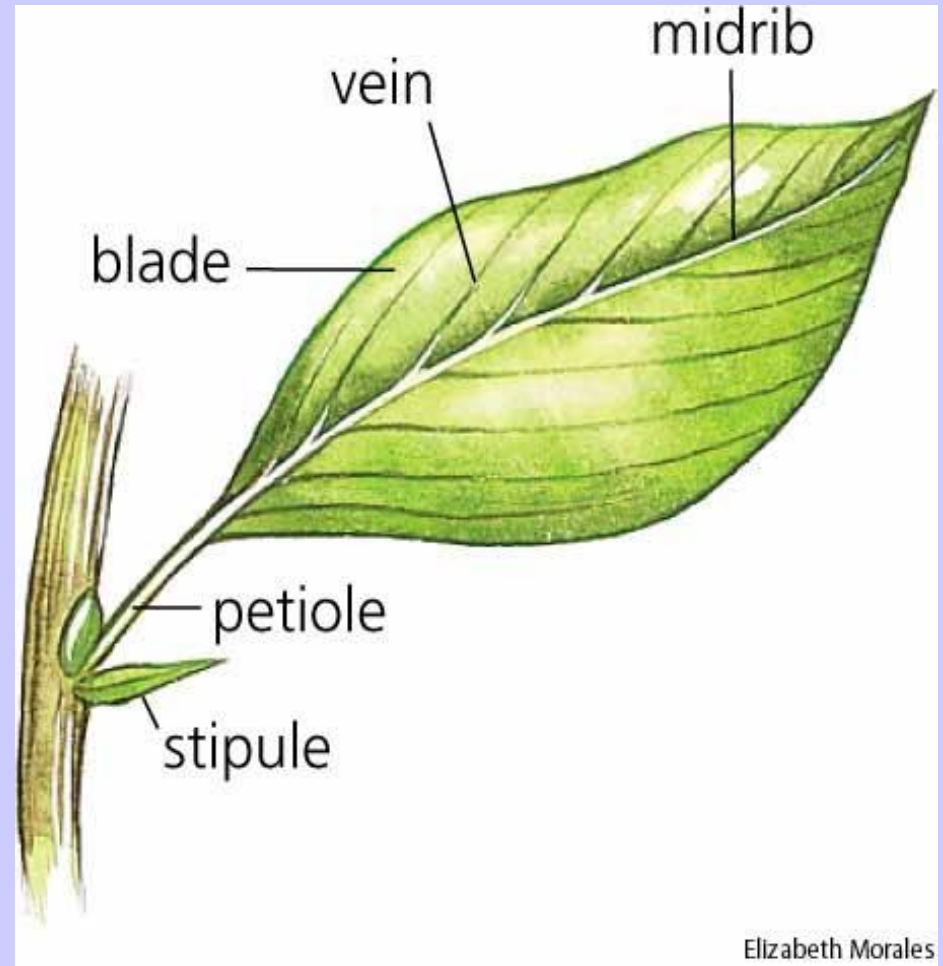


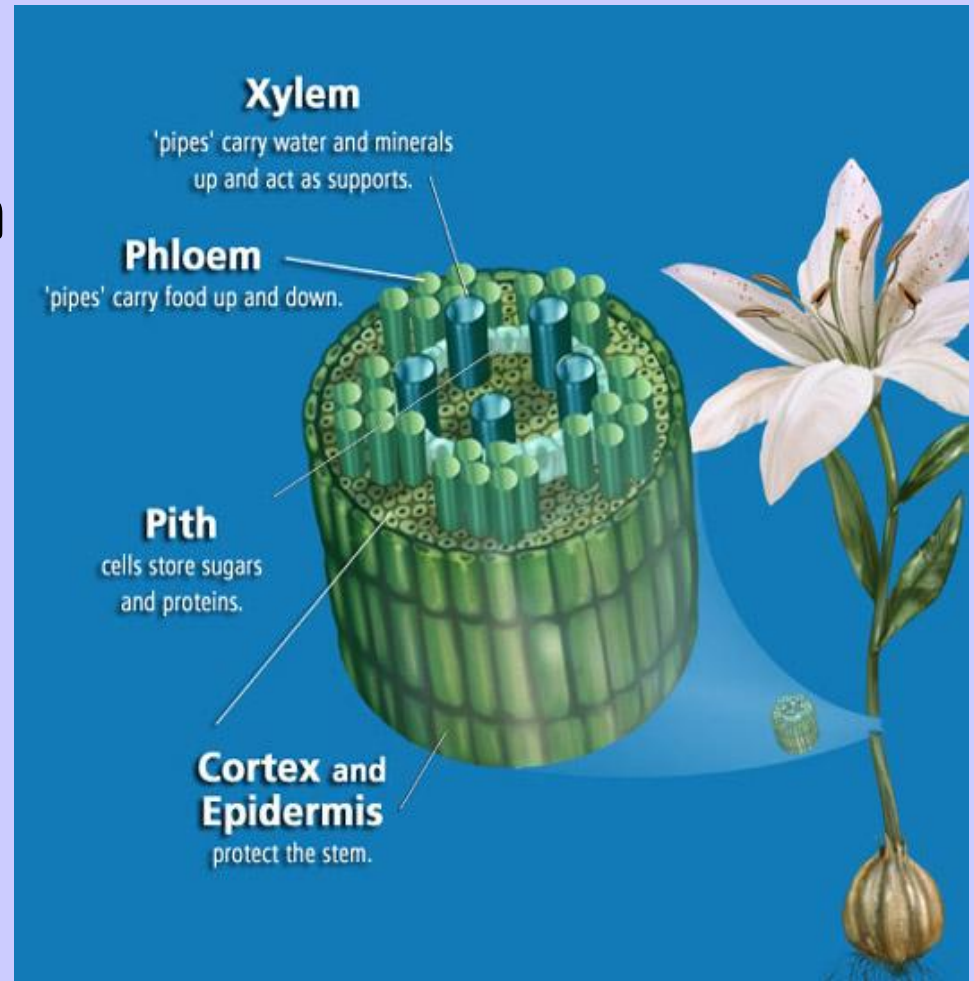
Image found at: www.yourdictionary.com

Leaf Parts

- **Apex**
 - Tip of leaf
- **Base**
 - Attaches to petiole – if petiole is absent, attaches directly to stem
- **Margin**
 - Edge of leaf
- **Epidermis**
 - “Skin” of leaf - responsible for gas exchange
- **Stomata**
 - Outside layer of leaf opening in epidermis where gas and water exchange
- **Mesophyll**
 - Middle layer of leaf where photosynthesis occurs

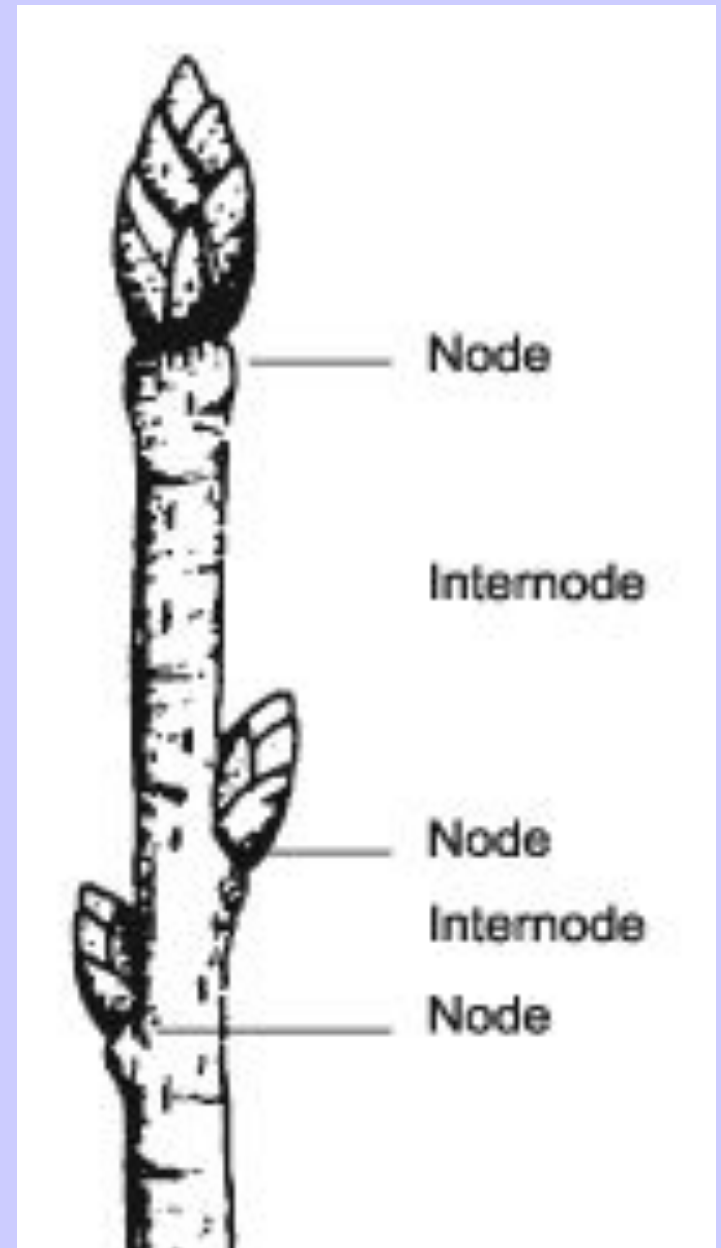
Functions of the Stem

- Transport water and nutrients from roots to leaves
- Supports leaves, fruit, and flowers
- Food storage



Parts of the Stem

- **Node**
 - Areas where side branches and leaves develop
- **Internode**
 - Area between nodes
- **Xylem**
 - Carries nutrients up
- **Phloem**
 - Carries nutrients down
- **Pith**
 - Stores food



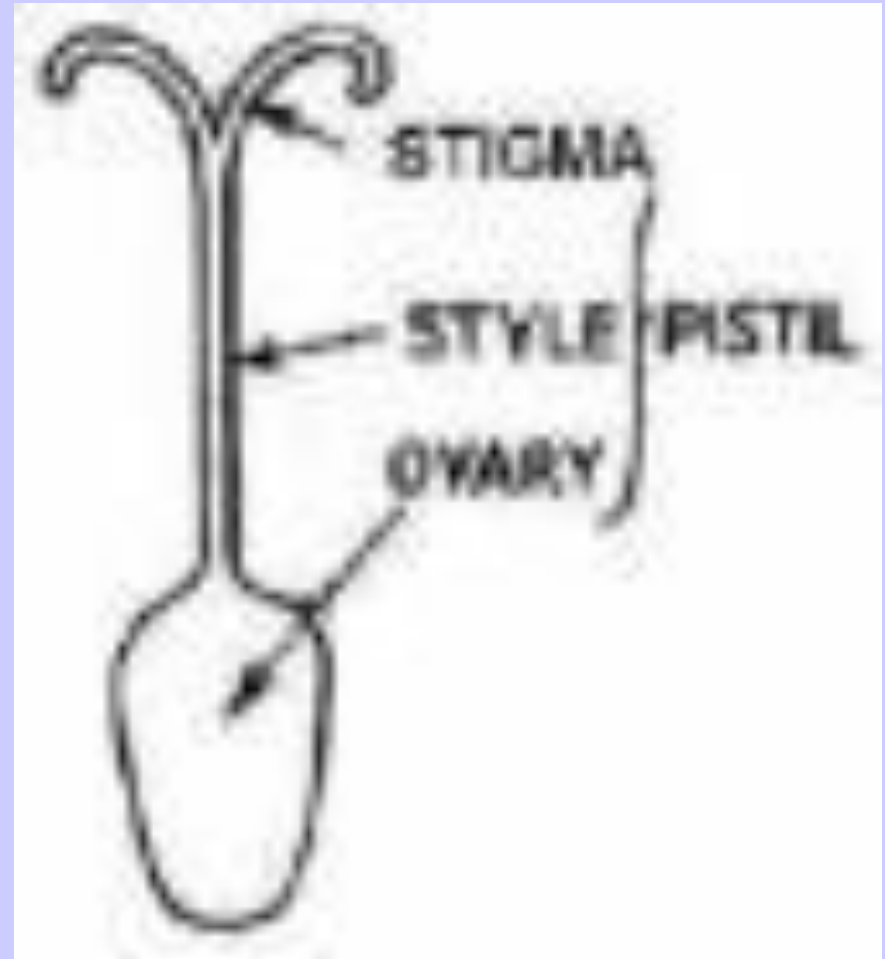
Flower Function

Sexual Reproduction!!!!

- **Flowers are pollinated by:**
 - **Wind**
 - **Insects**
 - **Birds**

Flower Parts

- **Pistil**
 - Female part of plant
 - Containing:
 - Stigma
 - Style
 - Ovary



Flower Parts

- **Stamen**
 - Male reproductive part
 - Contains
 - Anther
 - Filament

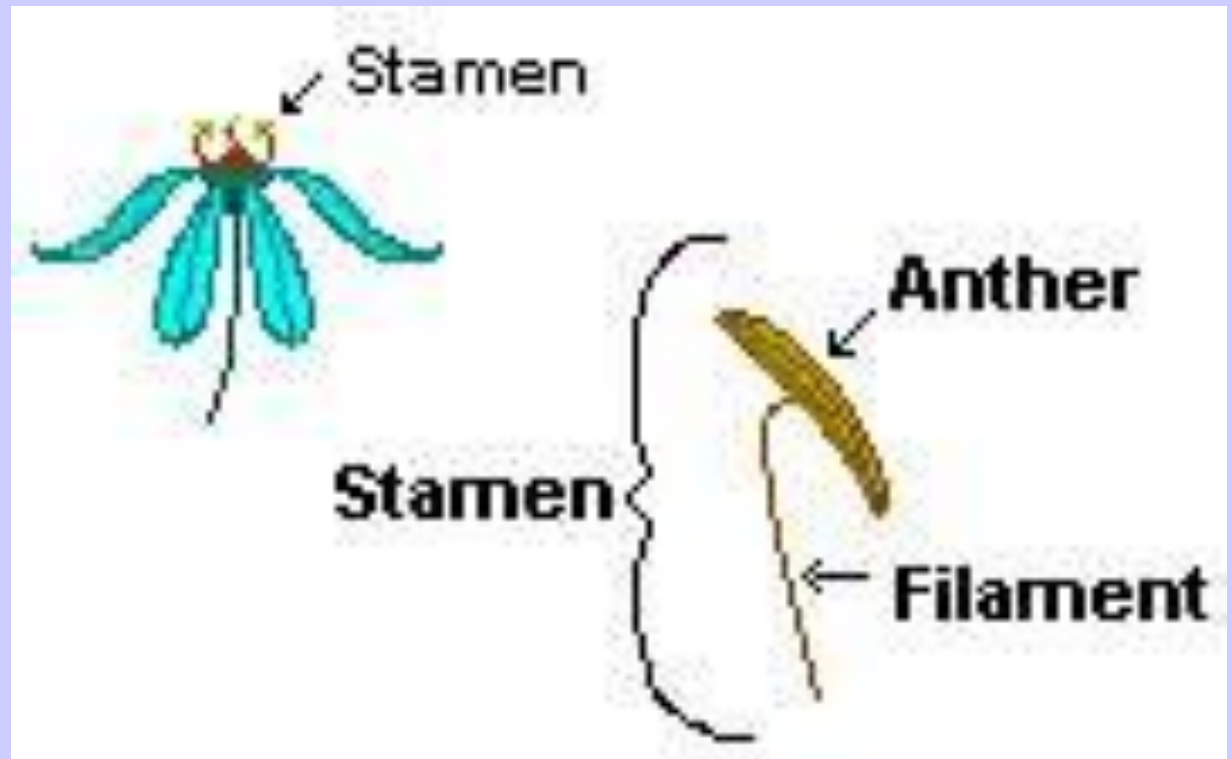
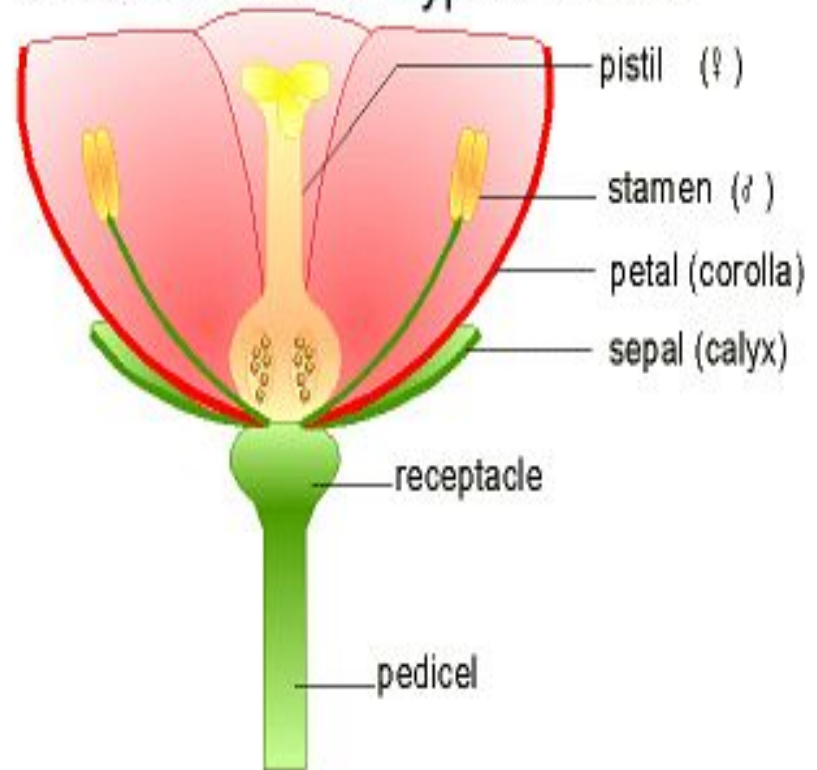


Image found at: www.botanyworld.com

Flower Parts

- **Petals**
 - Highly colored part of the flower, may contain perfume and/or nectar glands
- **Sepals**
 - Small green structures on the base of a flower that protect the flower bud

ANGIOSPERM FLOWERS
Cross Section of Typical Flower



Parts of the Seed

- **Embryo**
 - Growing part of seed containing:
 - Plumule – “Shoot”
 - Hypocotyl – Stem
 - Radical – “Root”
- **Endosperm**
 - Tissue that provides nutrition for the developing seed
- **Cotyledon**
 - Food Storage
- **Seed Coat**
 - Protective outer covering of the seed

Parts of the Seed

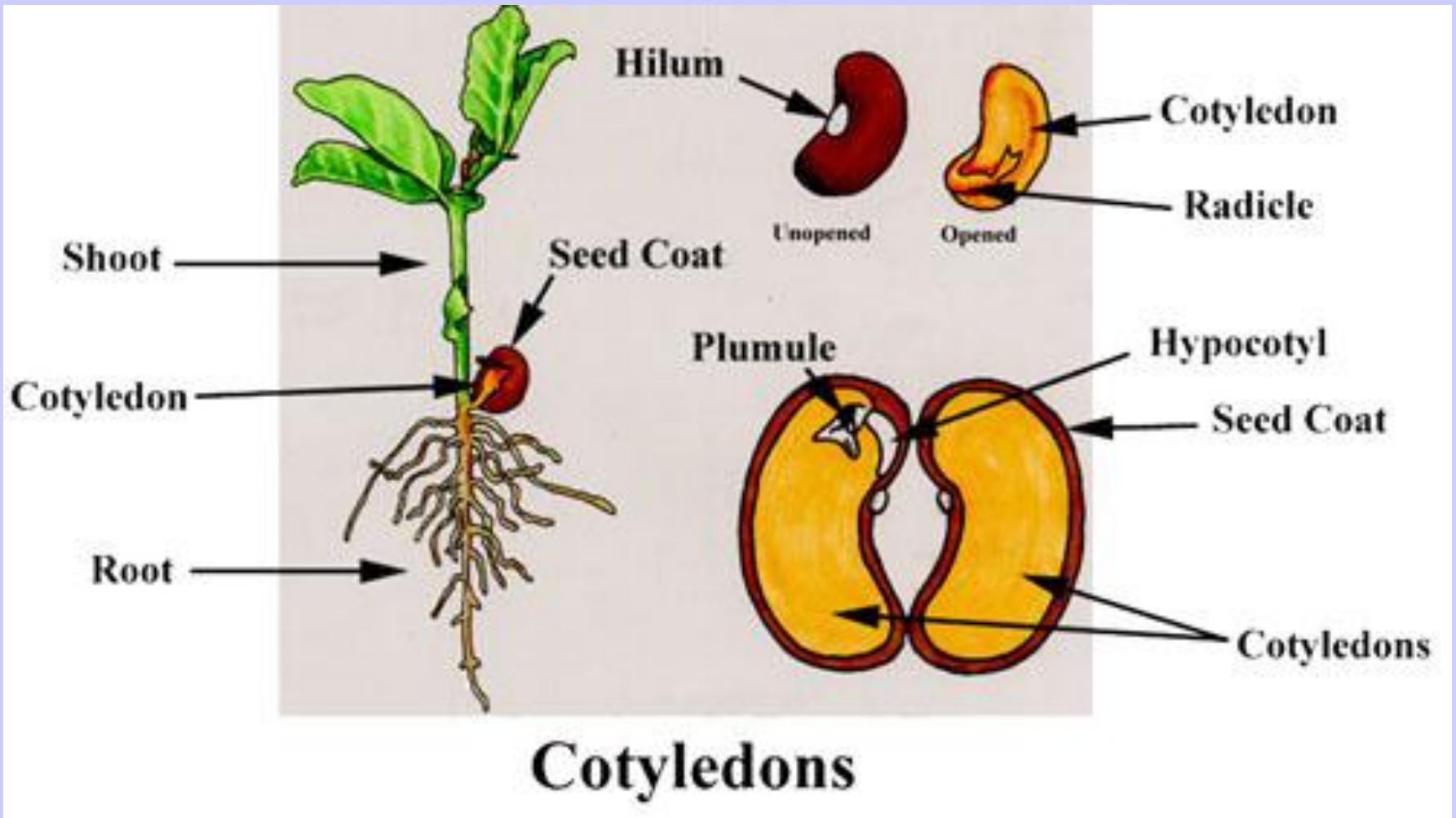


Image found at: www.puc.edu