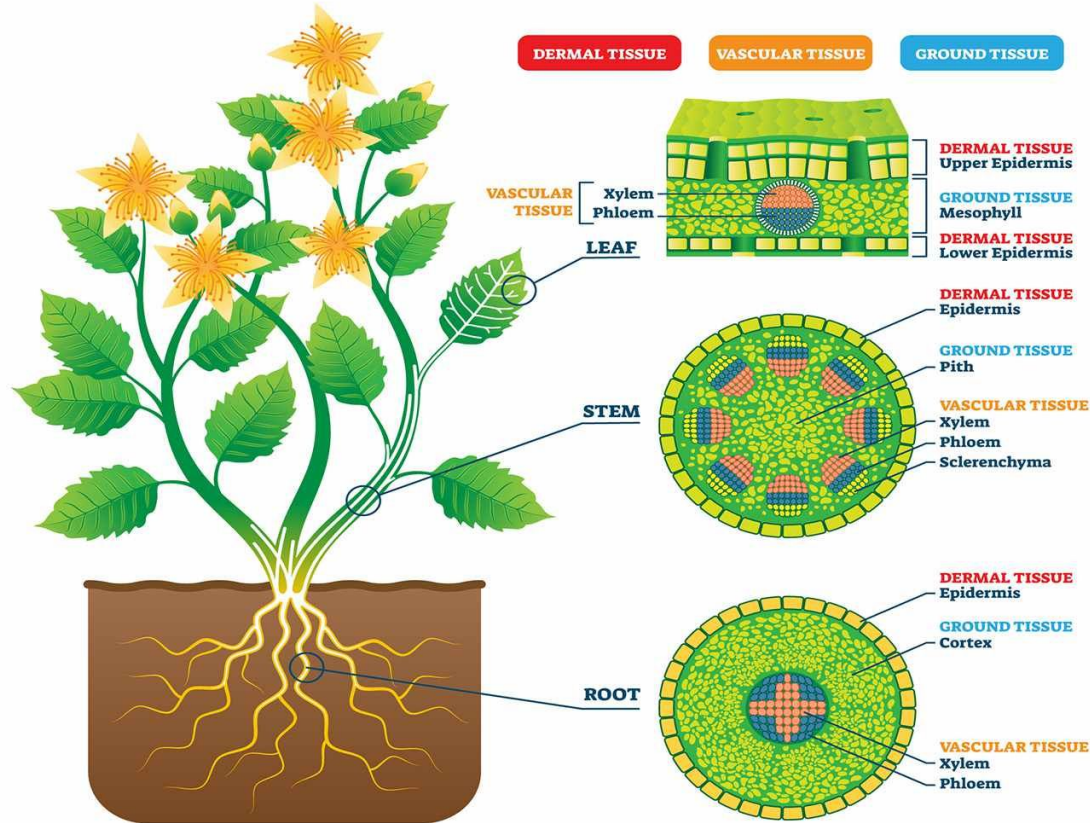


# Plant Structure & Physiology

Unit 8

# Plant Tissues



Meristems- mitotic groups of cells at are in the tips of top and bottom of the plant as well as in the stem of some plants; for growth.

**Dermal Tissue- outermost layer.**

**Vascular Tissue- xylem & phloem (in bundles together)**

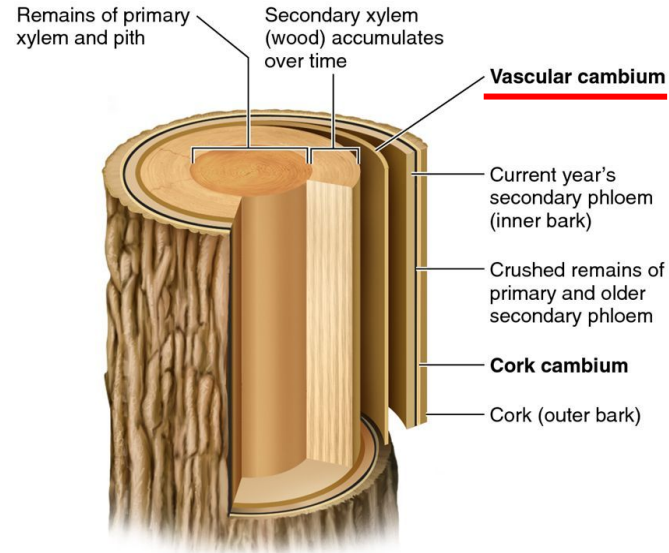
Vascular plants have a transport system including stems, roots, & leaves

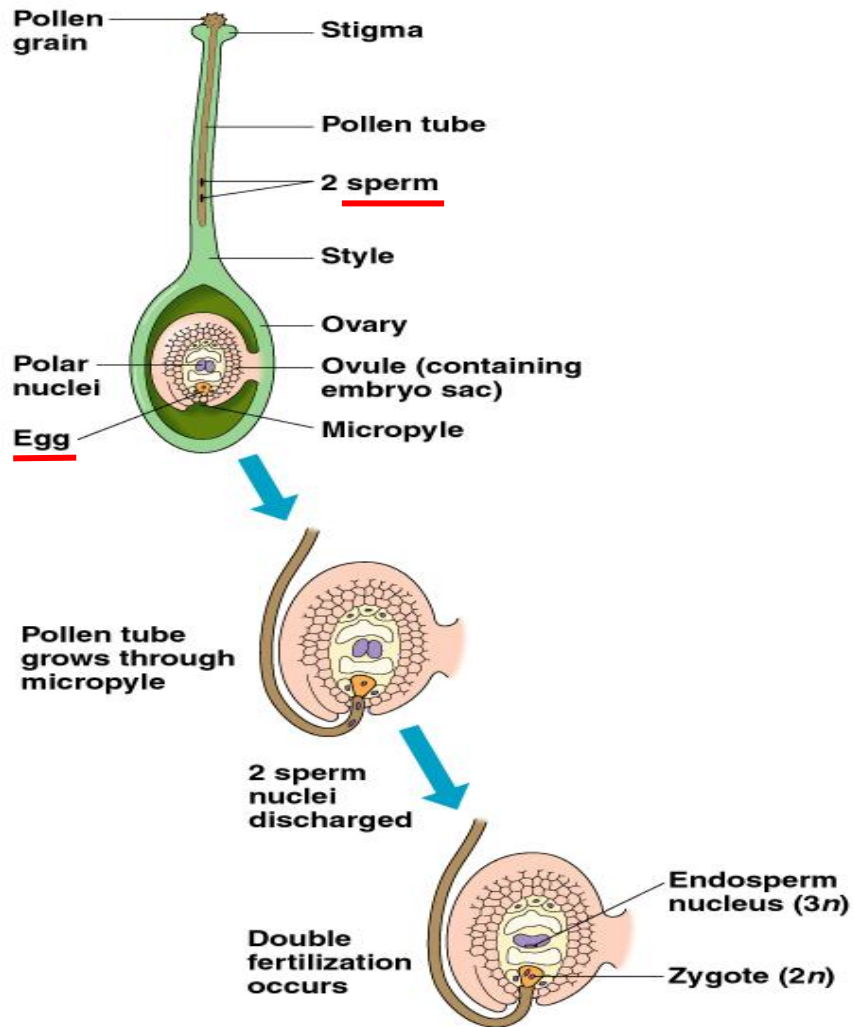
Nonvascular plants are earlier plants that do not have a transport system (mosses & liverworts)

**Ground Tissue- everything else**

# Meristems

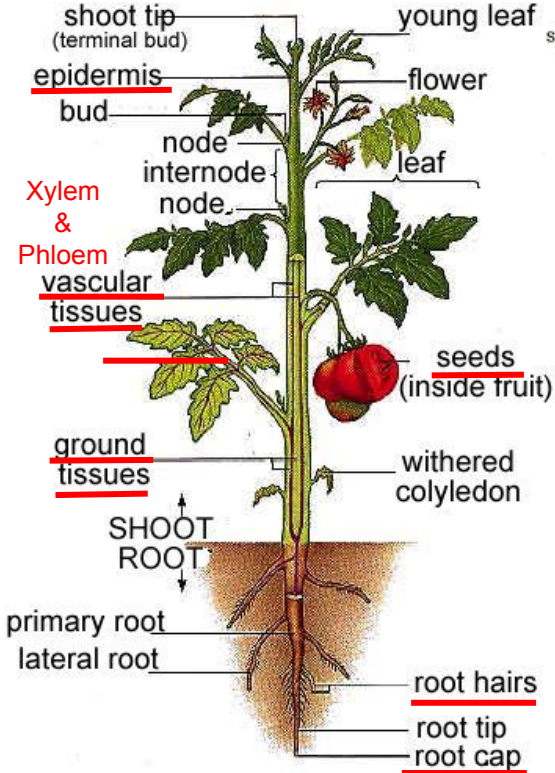
- **Regions where cell divisions produce plant growth**
- **Apical meristems**
  - Indeterminate (not set) lengthening of stems, roots, and development of leaves
  - Responsible for *primary* growth
- **Lateral meristems**
  - Increase width of stems
  - Responsible for *secondary* growth





# Plant Parts

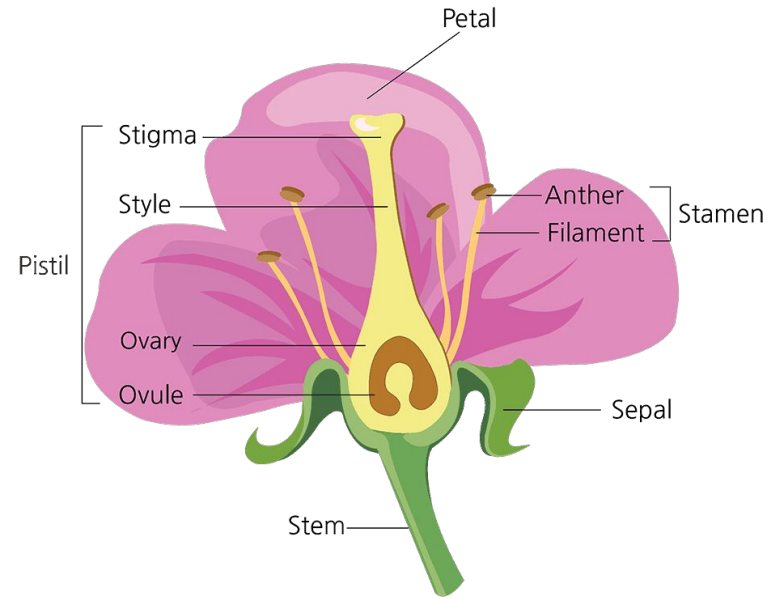
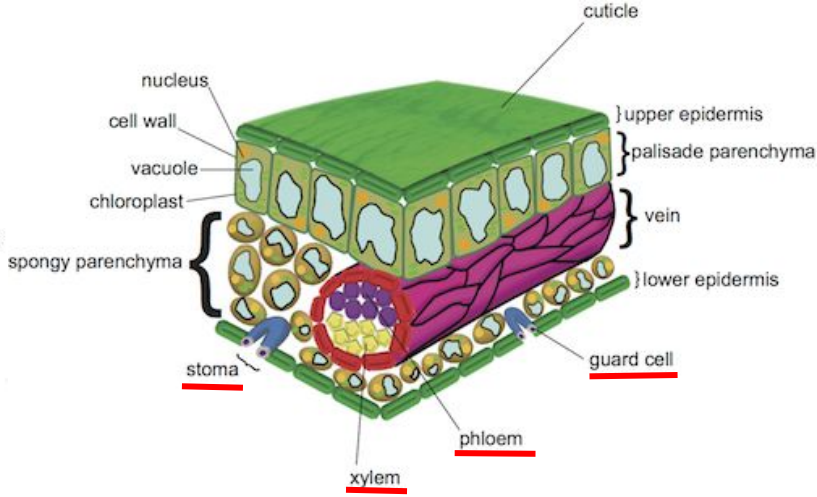
**Meristematic Tissue**



**Meristematic Tissue**

**Xylem & Phloem vascular tissues**

**ground tissues**



**ALL of these**

<b>Structure</b>	<b>Function</b>
Cambium	Growth (diameter)
Guard cells	Transpiration (mainly), Photosynthesis, & Respiration
Phloem	Photosynthesis (products)
Root hairs	Photosynthesis (water uptake)
Root cap	Growth
Seed	Reproduction
Stomata	Transpiration (mainly), Photosynthesis, & Respiration
Xylem	Transpiration & Photosynthesis (water movement)
Stamen	Reproduction ('male' part)
Pistil	Reproduction ('female' part)
Ovary	Reproduction (part of pistil; becomes the fruit)

<b>Structure</b>	<b>Function</b>
Petals	Reproduction (attracts pollinators)
Sperm	Reproduction
Egg	Reproduction
Sepal	Growth (covers flower before it blooms)
Filament	Reproduction (part of stamen)
Anther	Reproduction (part of stamen)
Style	Reproduction (part of pistil)
Stigma	Reproduction (part of pistil)

Click image for link

# Plant Tissues & Organs

## Leaf

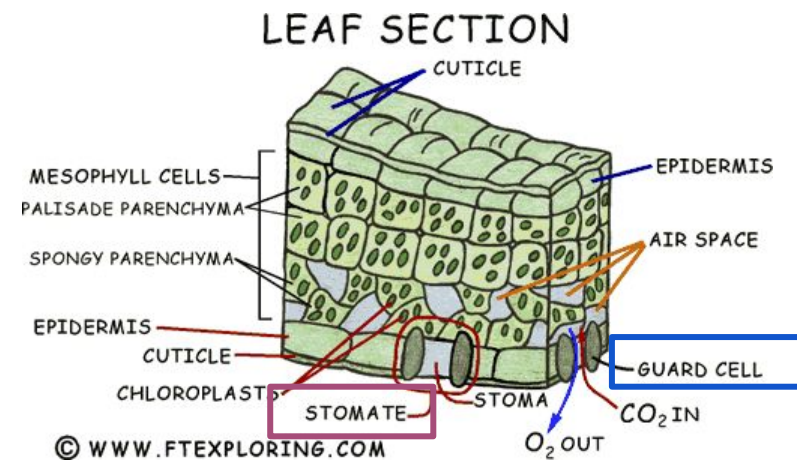
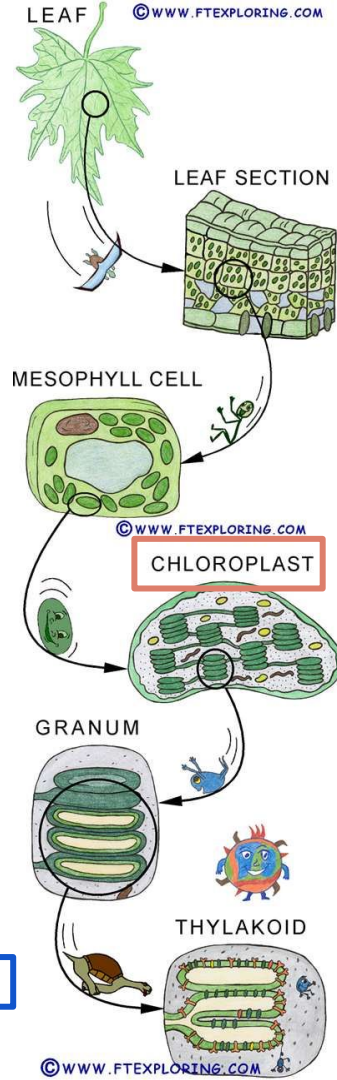
Guard Cells: open and close stomata

Stomata: pores for gases and water

Chloroplast: site of photosynthesis

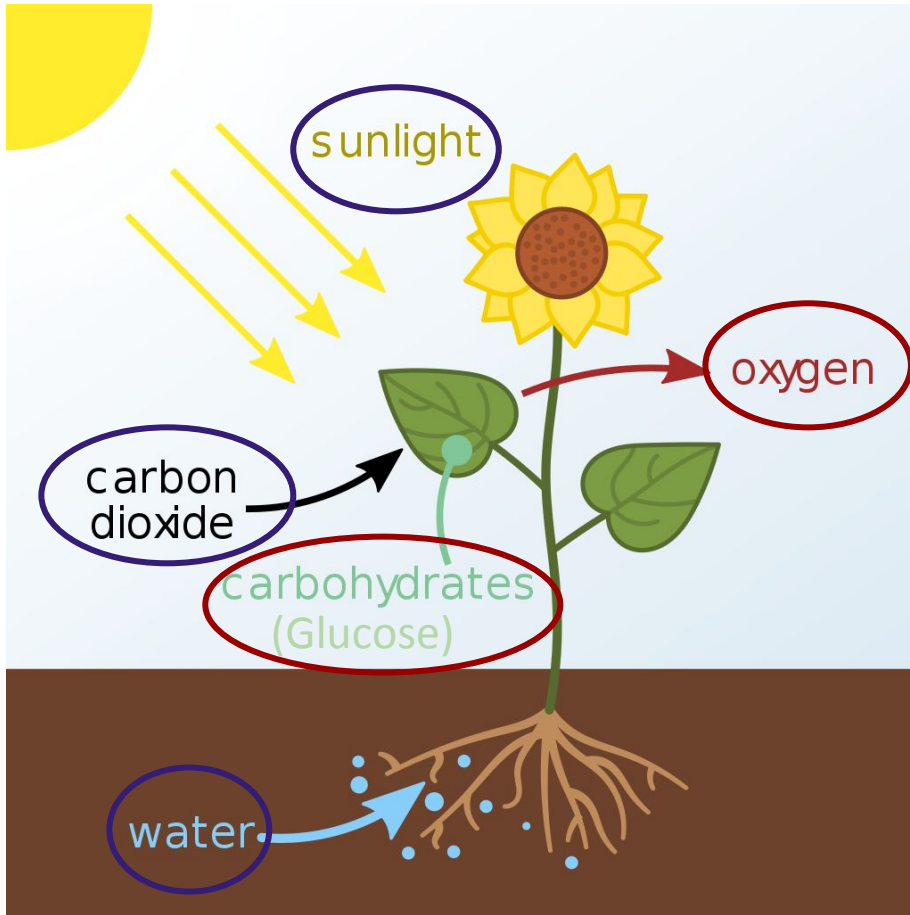
Chlorophyll: pigment in chloroplast that absorbs light

Root: anchors plant & absorbs water





# Photosynthesis



Reactants (what goes in)-  
CO<sub>2</sub>, Water, Light

Products (what comes out)-  
Oxygen and Glucose

- Glucose can be stored as starch or used to make cell walls as cellulose.



# Alternation of Generations

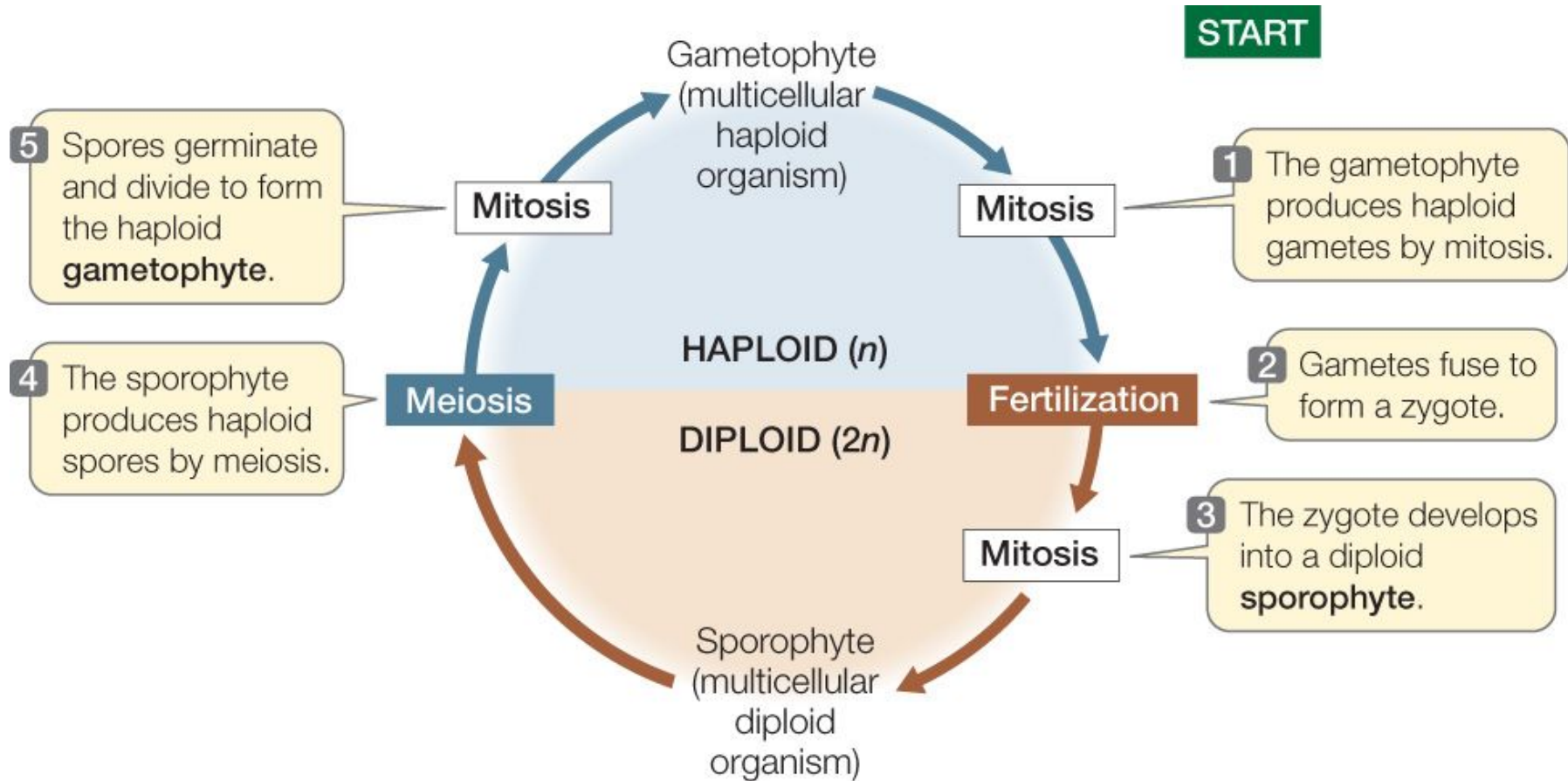
**Sporophytes** are multicellular organisms made up of *diploid* cells that produce haploid spores by meiosis.

↓  
**Spores** are *haploid* cells that perform mitosis to make a multicellular organism composed of *haploid* cells called a **Gametophyte**

**Gametophytes** produce **gametes** by mitosis (since they are already *haploid*).

↓  
*Haploid gametes* fuse to make a zygote which is a *diploid* organism that grows by mitosis to form a **Sporophyte**.

# Alternation of Generations



# Alternation of Generations

