

Kingdom Plantae

Remember...

1. Eukaryotic
2. Autotrophic (Chloroplasts)
3. Multicellular
4. Cells protected by cell walls (cellulose)

Plant Adaptations

- Plants evolved from algae (in water)
- Why make the move to land?
 1. More CO₂ for photosynthesis.
 2. More sunlight.
 3. Soil has more minerals.

Plant Adaptations

- What are the obstacles of living on land?
 1. Dehydration - water is needed for photosynthesis
 2. Method of reproduction

Synthesis

- Photosynthesis
 - converts sunlight into chemical energy (carbohydrates)
 - Chloroplasts

Transport

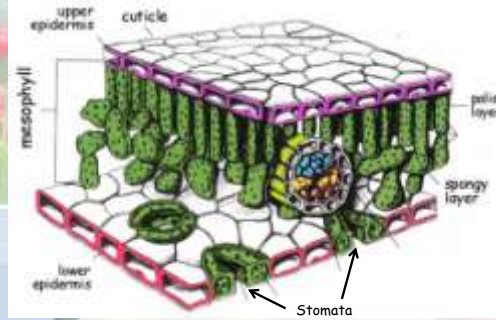
- Vascular plants have two types of tissue that make up the veins.
 - Xylem - carries water up from the roots to photosynthesis in the leaves.
 - Phloem - carries the sugar made in photosynthesis to where it is needed in the plant.
 - Roots = storage
 - Growing parts of the plant

Excretion

- **Stomata**

- pores (holes) in the skin (epidermis) of the leaf
- allow CO₂ to enter the leaf
- allow OXYGEN to exit the leaf

Stomata



Nutrition

- **Autotrophic** - self-feeder

- makes own carbohydrates through photosynthesis
- What's the equation?

Growth

- cells divide by mitosis
- higher rate of cell division in roots/stems

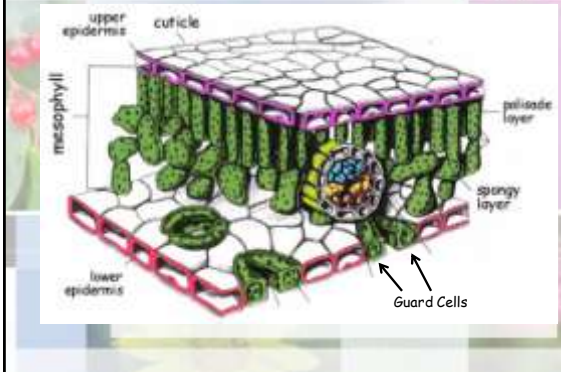
Growth



Regulation

- Guard cells - specialized cells that control the **OPENING** and **CLOSING** the stomata
- Helps regulate water loss with the need for CO₂ for photosynthesis
 - Transpiration - loss of water through the stomata.

Guard Cells



Regulation

• HORMONES



Reproduction

- **Asexual**
 - Vegetative propagation
- **Sexual**
 - Sperm
 - Egg
 - Pollen
 - Spores
 - Flowers
 - Cones

Angiosperms

- “flowering” plants
- seeds are **STORED INSIDE OF FRUIT**
 - **FRUIT = OVARY**

Gymnosperms

- “naked” seeds = **NOT** in **FRUITS**
- seed inside **CONES**
- Ex. Pine tree

Seeded Plants

Angiosperms



Gymnosperms



Angiosperm Reproduction

- Flowering plants
(“Flowers for Angie”)
 - Flowers are the reproductive structure with male/female parts
 - Pollen = sperm
 - Pollen + egg = fertilization
 - Baby embryo is stored inside of a seed.

Flower Structure

