PlantGrowth & factors affecting it

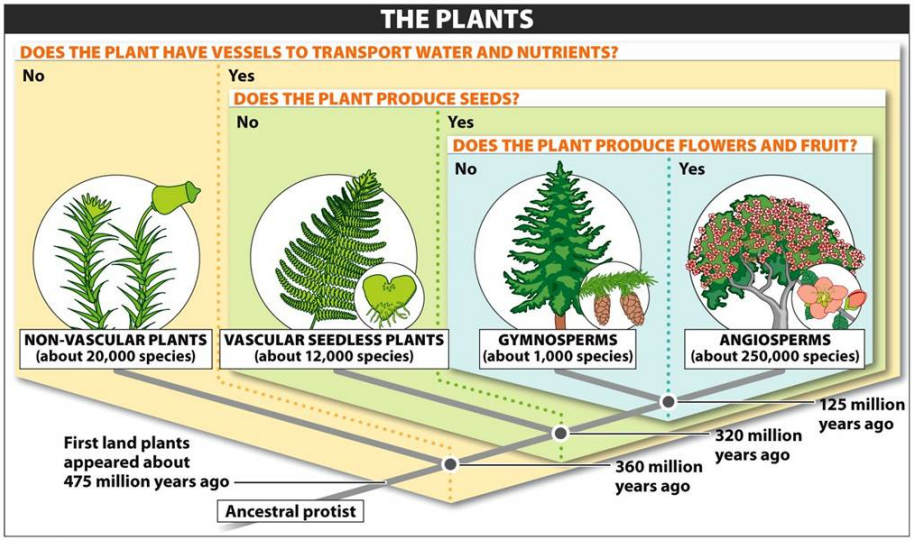


Figure 12-4
What Is Life? A Guide To Biology, Second Edition

-binomial nomenclature : Genus, species

PLANT GROUPS

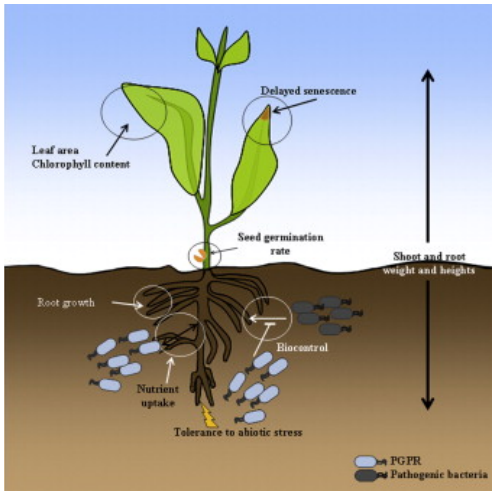
1. **Bryophytes**
   - Phylum Bryophyta
   - Non-vascular plants (do not conduct tissue) , limited size
   - Damp places
   - Ex : moss
2. **Ferns**
   - Vascular
   - Reproduces by spores
   - No true leaves : only fronds
3. **Gymnosperms**
   - Reproduce with seeds found in comes
   - Conifer
   - Evergreen
4. **Angiosperms**
   - Reproduces by flowers
   - Monocot: flower parts in multiples of3
   - Dicot: flower parts in multiples of 4

Agronomic crops: grown for grain, feed, for processing into oil, starch, protein, flour, rice, sugarcane, spice and herbs, cotton, tobacco
Horticultural crops: garden plants, fruit vegetables, ornamentals

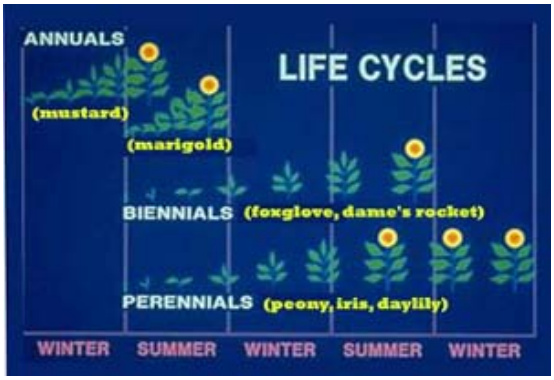
PLANT GROWTH

-plant increase by cell division and enlargement

- **Measuring growth**: increase in fresh weight&dry weight, volume, length, surface area
- **Shoot growth**: determinate, indeterminate



- **Plant growth pattern**: annuals(life cycle= 1 growing season), biennuals(life cycle= 2 growing season), parennials(life cycle= more than 2 growing season)



<u>BASIC REQUIREMENTS FOR PLANT GROWTH</u>
oxygen, co2, light (photosynthesis, photomorphogenesis), water, minerals, appropriate temperatures, hormones

Tropisms(growth responses to a stimuli): phototropism(light), gravitropism(gravity), thigmotropism(touch)

Root system:

- primary root system(tap root, lateral root)
- fibrous root system(adventitious root)

Root function:

- absurd water and nutrients
- provide stability
- synthesise plant hormones
- store energy produced by plants

Hormones:

- Auxin: cell elongation
- Cytokinins: apical dominance, delay left senescence(process leading to death)
- Gibberellins: seed germination, stem elongation
- Abscisic acid: seed dormancy, stress hormone
- Ethylene: fruit ripening






	Germination	Growth to Maturity	Flowering	Fruit Development	Abscission	Seed Dormancy
Gibberellin	✓	✓	✓	✓	✗	✗
Auxin	✗	✓	✓	✓	✗	✗
Cytokinins	✗	✓	✓	✓	✗	✗
Ethylene	✗	✗	✓	✓	✓	✗
Abscisic Acid	✗	✗	✗	✗	✓	✓