

# *DIVERSITY OF PLANT FORMS*



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*General Botany*



# Classification of Plants

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- **Artificial classification**

- A. Based on whether or not they can manufacture food out of inorganic nutrients.**

- **Autotrophic / independent plant**- can produce their own food through photosynthesis.
      - all green plants
    - **Heterotrophic or dependent plant** – cannot manufacture their own food
      - i. parasite – nutritionally dependent on other living organism
      - ii. Saprophytes – nutritionally dependent on dead organic matters



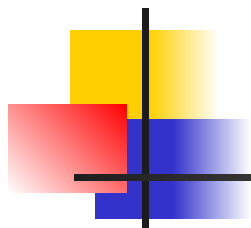
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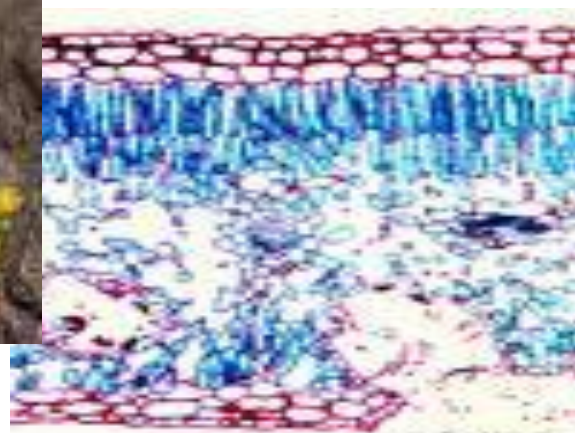
## **B. Based on environmental location**

- **Aquatic plants** - live on water
- **Terrestrial plants** - live on land
- **Epiphytes** – found above the grounds & attached to plants

## **C. Based on water requirements**

- **Xerophytes** – live in dry places
- **Mesophytes** – require moderate supply of water
- **Hydrophytes** – lives in watery or moist places & require abundant supply of water







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## D. Based on lifespan

- **Annuals** – a plant that complete its life cycle during a single growing season & then dies.
- **Biennials** – typically herbaceous plants, requires 2 growing seasons. Produce flower & seeds in the 2<sup>nd</sup> season.
- **Perennials** – a plant that grows for many years, woody or herbaceous.

## E. Based on appearance or habit

- **Tree** – woody w/ single main stem, about 10 ft high
- **Shrub** – woody w/ a relatively short main stem w/c gives rise to many branches
- **Herb** – soft stemmed w/c is relatively short; short-lived
- **Vine** – either creeping along the ground or climb upright.





■ annual plants

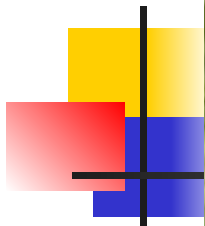


■ biennial plants

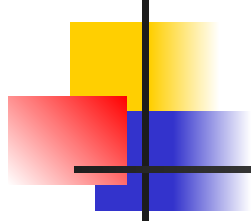


■ perennial plants









## ■ **Natural classification**

- based on morphological & structural relationships.

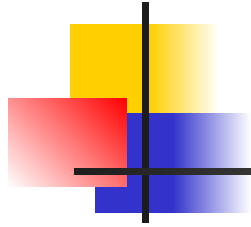
### **A. Non-vascular plants** –lack conducting tissues (phloem & xylem)

#### a. **thallophytes**- simplest forms of plants

thallus – is their body composed of undifferentiated roots, stem, leaves. Ex: algae, fungi, lichens (alga & fungi)

#### b. **bryophytes** – mosses, liverworts, & hornworts.

- usually found in moist places, rocks, & trees.



- B. Vascular plants – have conducting tissues
- a. **Pteridophytes** – produces spores
    - ex: ferns
  - b. **Gymnosperms** – seed bearing plants w/c do not produce flowers.
    - ex: cycads (pitogo), pine trees, & spruces
  - c. **Angiosperms** – flowering plants that produce seeds
    - ex: gumamela, santan, etc.



# Angiosperms

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- Monocotyledonae (Monocot)
  - has one seed leaf or cotyledon
- Dicotyledonae (Dicot)
  - contains two seed leaves



In seeds, two cotyledons (part of the embryo)



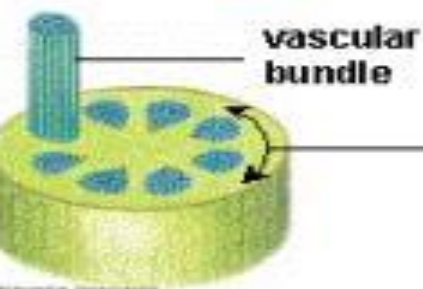
Usually four or five floral parts (or multiples of these)



Usually a netlike array of leaf veins



Basically, three pores or furrows in pollen grain



vascular bundle

Vascular bundles arrayed as a ring in stem

**DICOTS**



In seeds only one cotyledon



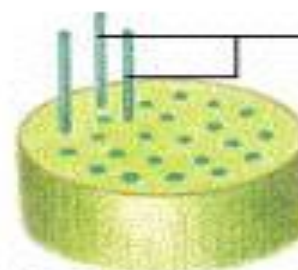
Usually three floral parts (or multiples of three)



Usually a parallel array of leaf veins



Basically, one pore or furrow in pollen grain



Vascular bundles distributed ground tissue of stem

**MONOCOTS**