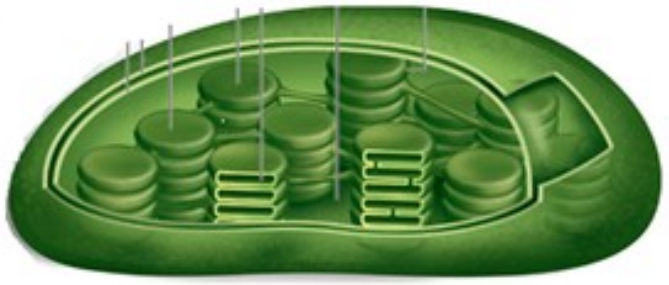
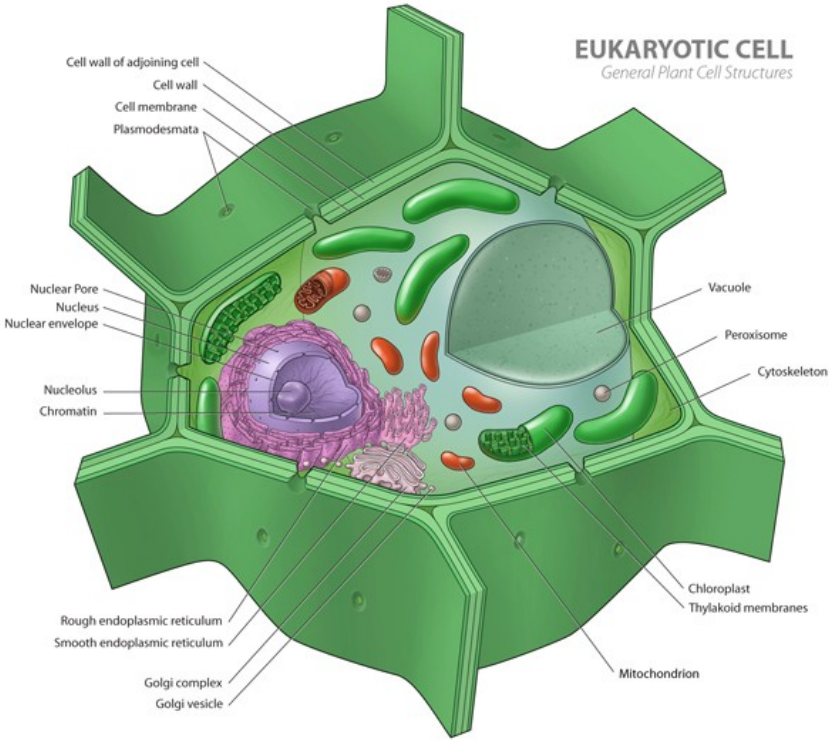
Kingdom Plantae

Characteristics

Characteristics

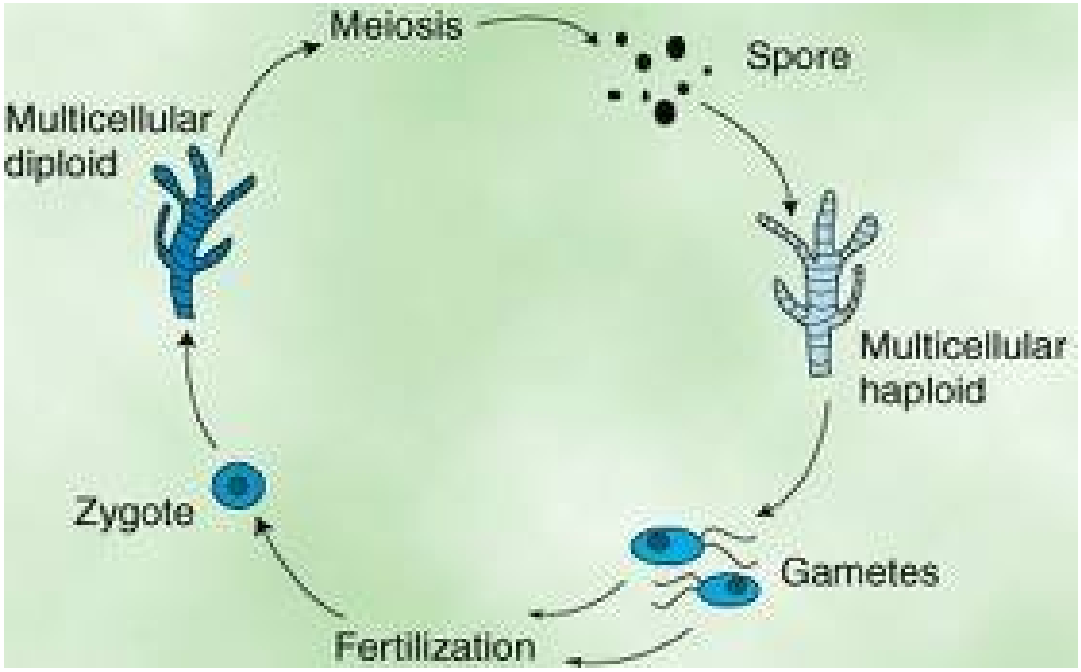
- Eukaryotes
- Autotrophs – have chlorophyll in chloroplasts for photosynthesis
- Cell walls made of cellulose
- Unicellular & multicellular





Characteristics continued:

- Sexual & asexual reproduction
- A life cycle (L. C.) called alternation of generations



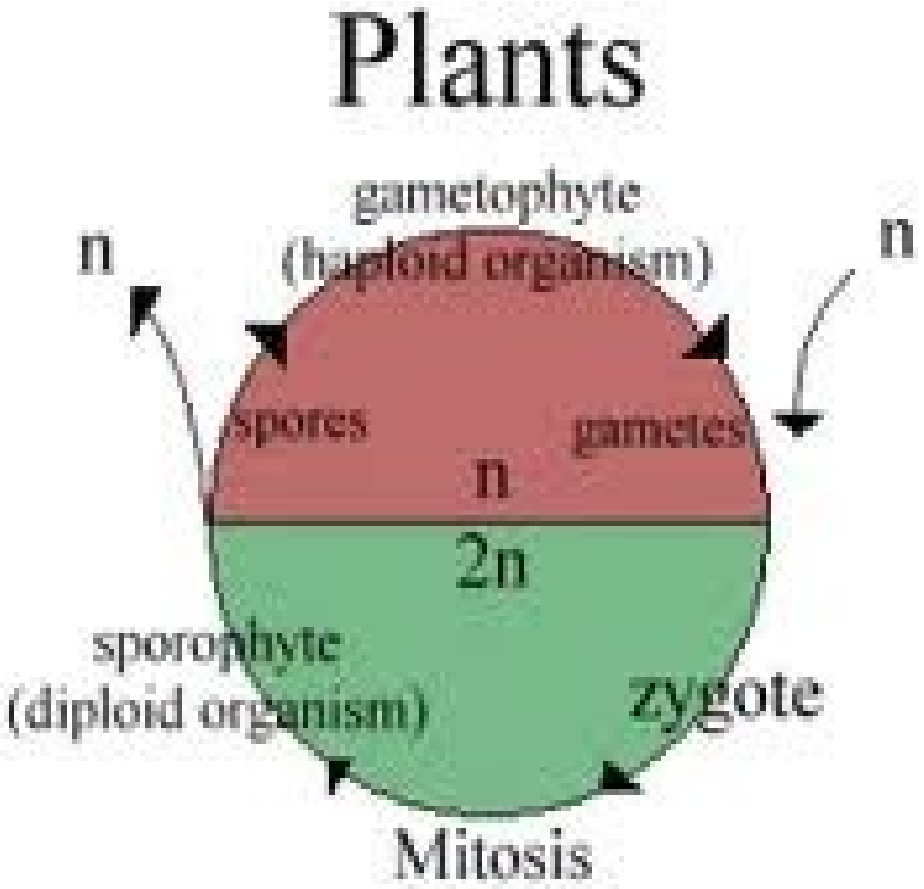
Alternation of Generations

Plant switches back and forth between the sporophyte and the gametophyte generations (they alternate)

2 phases:

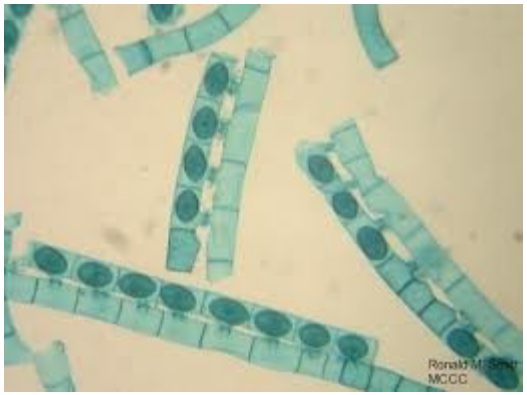
1. **Sporophyte generation** = diploid (2N) & produces spores by meiosis
2. **Gametophyte generation** = haploid (N) & produces gametes (sex cells)

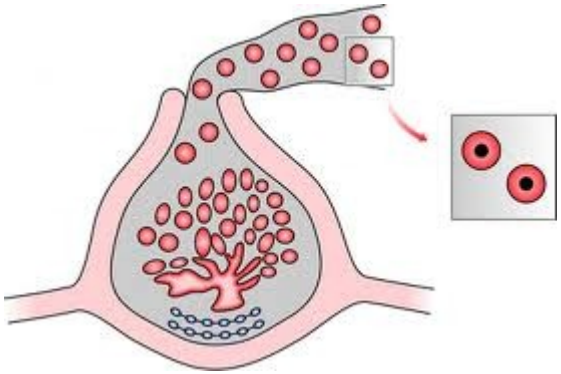
Alternation of Generations



3 Types of Asexual Reproduction in Algae

1. Fragmentation – piece breaks off and grows into a new individual
2. Asexual spores = haploid
3. Mitotic division = simple cell division





Sexual Reproduction in Algae

- The two gametes fuse to form a zygote

- There are two types of gametes:

1. **Isogamy** = identical gametes or isogametes = same size & structure. When isogametes fuse = conjugation. Isogametes are differentiated by + and – (like fungus)
2. **Heterogamy** = gametes differ in size & structure. Larger = egg; smaller = sperm. When egg & sperm fuse called fertilization

Aquatic Plants = Algae

- Algae have **accessory pigments**

Function:

- Protect chlorophyll
- Absorb additional light for algae's photosynthetic machinery. This allows algae to live in deeper water than chlorophyll alone
- Gives algae its colour

3 phylums for algae

1. Chlorophyta = green algae
2. Phaeophyta = brown algae
3. Rhodophyta = red algae