

The Archaea, Protista, and eubacteria include mostly or entirely microscopic single-celled, or unicellular, organisms.

Monophyletic is a kingdom that has one origin, one lineage, one ancestor

➤ **Eubacteria (monophyletic)**

- Prokaryotic
- Single celled
- No organelles
- Cell walls contain unique compound (peptidoglycan)
- Reproduce asexually
- Can be pathogenic
- Autotrophs or heterotrophs

➤ **Archaea (monophyletic)**

- Prokaryotic
- Single celled
- No organelles
- Autotrophic or heterotrophic
- Asexual

Different from Eubacteria by..

- Cell walls are different
- Not pathogenic
- Extremophile

➤ **Fungi (monophyletic)**

- Eukaryotic "true nucleus"
- Cell walls are made of chitin (sugar derived molecule)
- Most are multicellular
- Heterotrophic
- Sexual and asexual
- Can be pathogenic
- Decomposers
- Terrestrial (most)
- Sessile (stationary)

➤ **Plants (monophyletic)**

- Autotrophic – photosynthetic
- Eukaryotic
- Multicellular
- Have chloroplast
- Sexual and asexual
- Cell walls are made of cellulose (sugar)
- Can cause allergic reaction
- Sessile (stationary)

➤ **Animals (monophyletic)**

- Multicellular
- Heterotrophs
- Motile (at some point)
- Sexual

➤ **Protista (other)**

- Eukaryotic
- Single or multicellular
- Most diverse group
- 3 main → plant-like, animal-like, and fungi-like
- Autotrophic or heterotrophic
- can be pathogenic
- Asexual or sexual