

The 6 Kingdoms



Naming the 6 Kingdoms

1. Archaeobacteria



2. Eubacteria



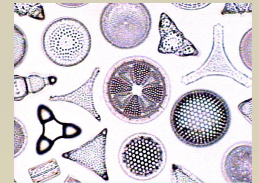
3. Protista



4. Fungi

5. Plantae

6. Animalia



Archaeobacteria [Prokaryote]

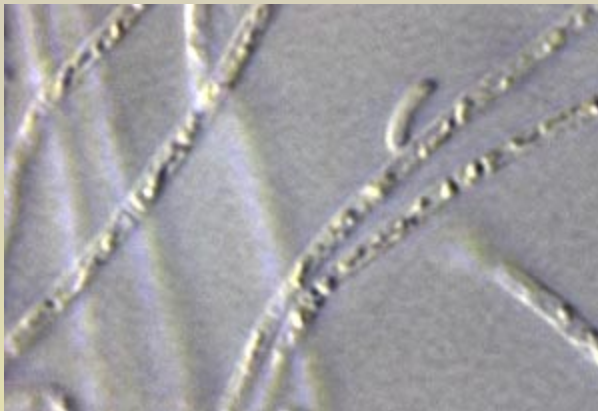
- **Cell walls without peptidoglycan (This makes them different from Eubacteria!)**
- **Unicellular**
- **Autotroph or Heterotroph**
- **Flagella for movement**
- **reproduce asexually (binary fission)**
- **Found in harsh environments (undersea volcanic vents, acidic hot springs, salty water)**
- **Subdivided into 3 groups based on their habitat --- methanogens (produce methane), thermoacidophiles (Like hot and acidic environments), & extreme halophiles (love salt!)**

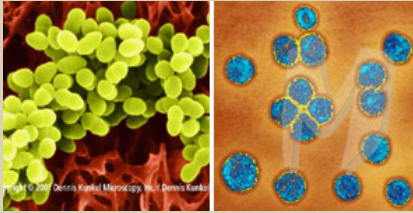


Halophiles (like salt)

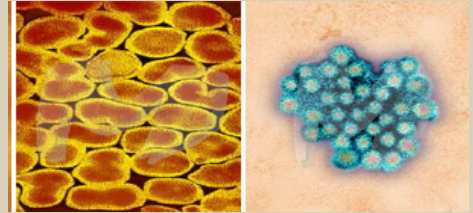


Thermophiles (like heat)





Eubacteria [Prokaryote]



- Cell walls made of peptidoglycan
- All are unicellular
- Most are heterotrophic (can't make their own food) some are autotrophs
- Move with flagella
- reproduce asexually (binary fission)
- Come in 3 basic shapes --- cocci (spheres), bacilli (rod shaped), spirilla (corkscrew shape)
- Can be aerobic (require oxygen) or anaerobic (don't need oxygen) and are unicellular
- Can be identified by Gram staining (**gram positive** or **gram negative**)
-

Eubacteria

➤ *Staphylococcus aureus*



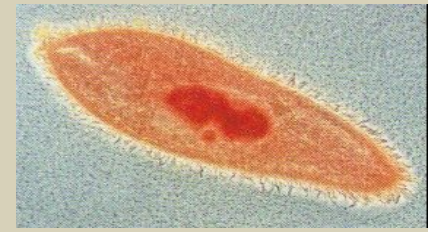
➤ *Bacillus anthracis*



➤ *E. coli*

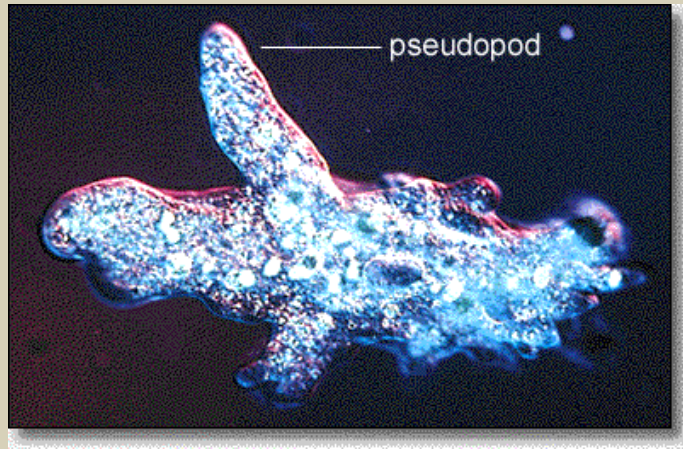


Protista [Eukaryote]



- **Cell walls with cellulose**
- **Most are unicellular**
- **Some are autotrophs and have chloroplast and perform photosynthesis**
- **Some are heterotrophs that ingest small food particles & digest it inside food vacuoles containing digestive enzymes**
- **cilia, flagella & pseudopodia**
- **Can reproduce asexually or sexually**
- **Can be found in pond or stagnant water**

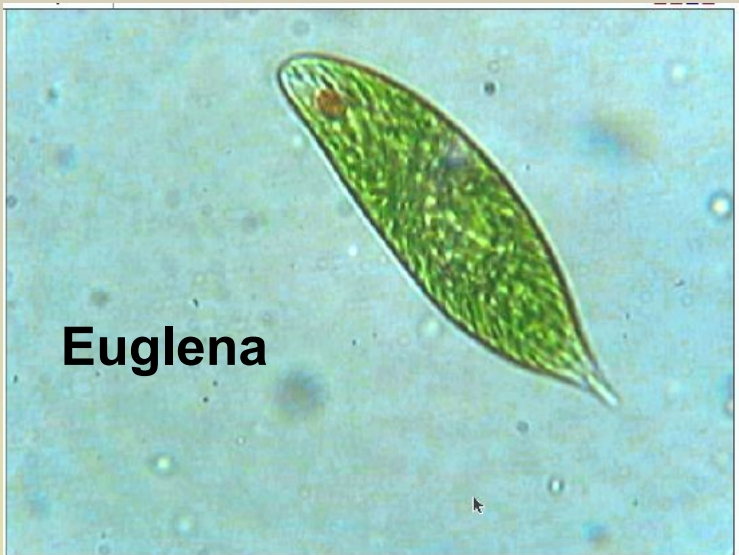
Amoeba



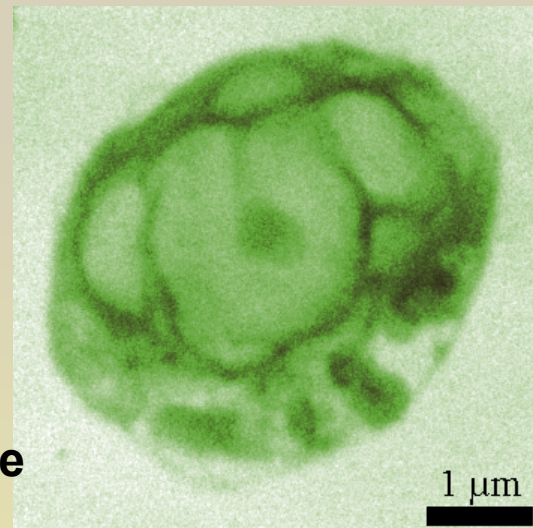
Rotifer



Euglena

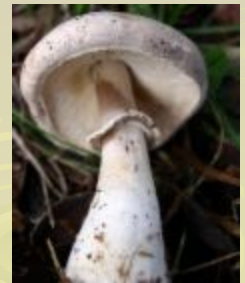


Algae



Fungi [Eukaryote]

- Cell walls are made of chitin (a complex polysaccharide)
- Most are multi-cellular, but some are unicellular like yeast
- Most are saprobes – live on other dead organisms
- Non-motile [no movement]
- Can reproduce sexually or asexually
- Do not contain chlorophyll (They are NOT plants!!)
- Store food energy as glycogen
- Important decomposers & recyclers of nutrients in the environment
- Lack true roots, stems, & leaves

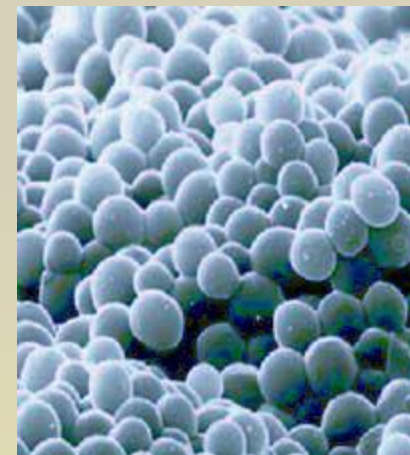


Mushrooms



Mold

Ringworm



Yeast

Plantae [Eukaryote]



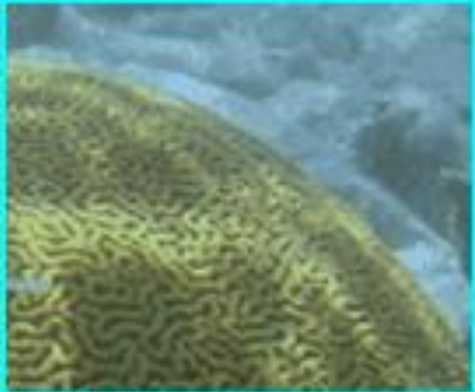
- Cell wall made of cellulose
- All plants are multi-cellular
- Autotrophs – They trap energy from the sun by photosynthesis & store it in organic compounds
- No movement
- Reproduce sexually or asexually
- Contain **chlorophyll** inside of chloroplasts



Animalia [Eukaryote]



- **Cells lack cell walls**
- **All multi-cellular (metazoans)**
- **Heterotrophs (take in food & internally digest it)**
- **Can Move**
- **Reproduce sexually**
- **Show levels of organization including cell, tissue, organ, & system**
- **Cells are specialized for particular functions**
- **Cells contain a nucleus and membrane bound organelles**



Ticket – Kingdoms

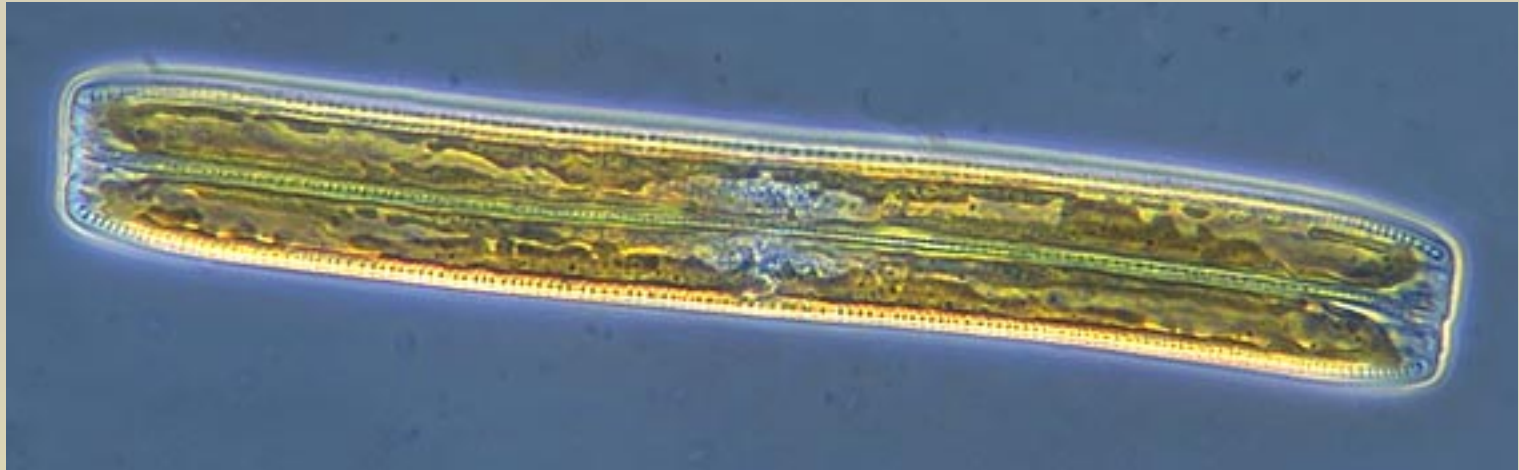
Take out a sheet of paper and tear it in half. Share with a neighbor. You may use the notes you just took.

Are you ready?



1. Which Kingdom do I belong to?

I am single celled
My Cell wall is made of cellulose



Protista

2. Which Kingdom do I belong to?

I am multi-cellular
I don't have a cell wall



Animalia

3. Which Kingdom do I belong to?

I am single celled



Protista

4. Which Kingdom do I belong to?

I am single celled

My Cell wall is made of peptidoglycan



Eubacteria

5. Which Kingdom do I belong to?

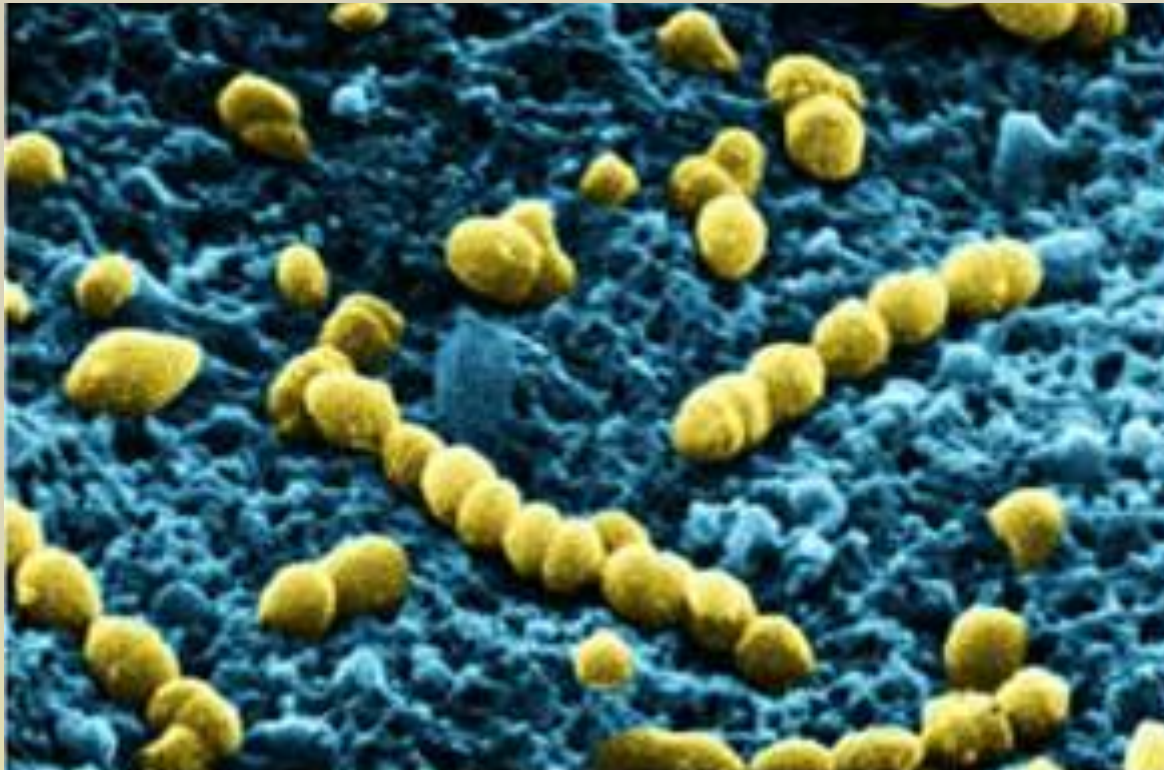
I am multi-cellular
I can't move



Plantae

6. Which Kingdom do I belong to?

I am single celled
I am a halophile



Archaeobacteria

7. Which Kingdom do I belong to?

I am single celled
I move by cilia



Protista

8. Which Kingdom do I belong to?

I am multi-cellular



Animalia

9. Which Kingdom do I belong to?

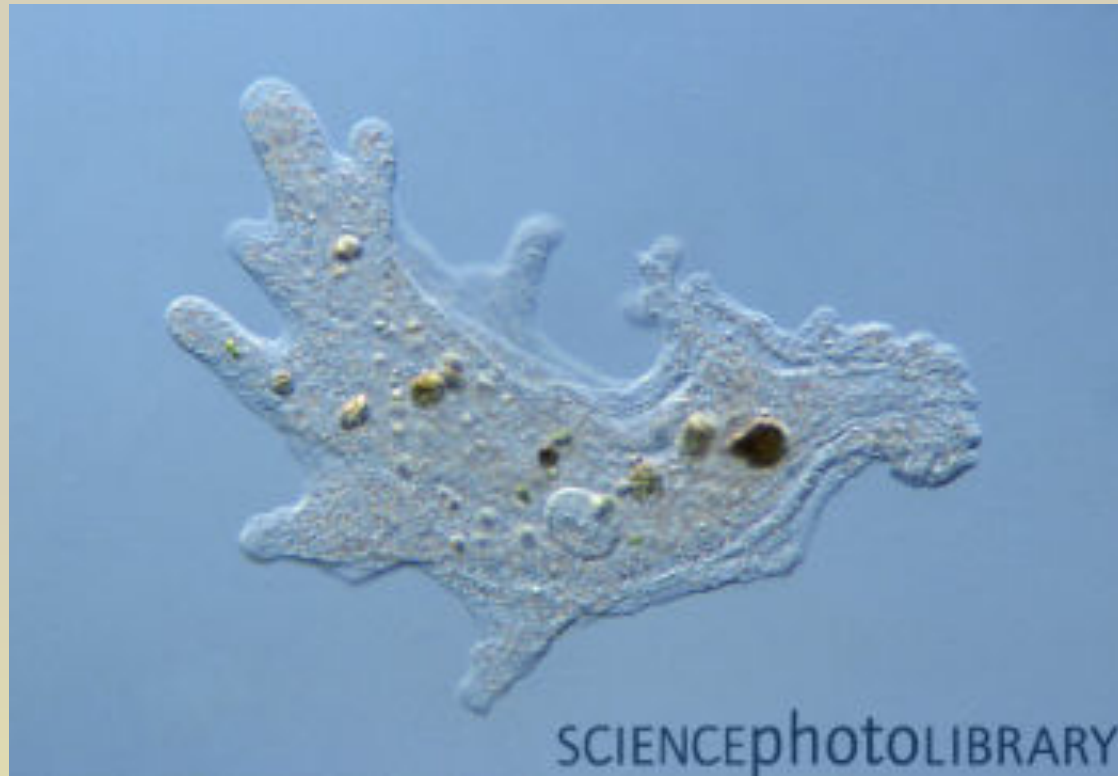
I am a thermoacidophile



Archaeobacteria

10. Which Kingdom do I belong to?

I move by pseudopod



Protista