Bacteria & Protista

K. Monera
all unicellular
prokaryotic
has cell wall, plasma membrane, flagella
does **not** have nucleus or any other membrane-bound organelles (review notes from cells and mitosis)
many habitats—thermal springs, glaciers, deep oceans, human body
photosynthetic autotrophs (Cyanobacteria)
heterotrophs (Eubacteria)
3 basic shapes—coccus, sprillum, bacillus
Can produce visible colonies (derived from cell division of one bacterium)

Observe: 1) 4 agar plates w/ colonies and categorize
2) Make dental plaque slides, stain w/ nigrosine (bacteria will appear clear on gray background)
3) Cyanobacterium *Oscillatoria*—photosynthesis and nitrogen fixation (N_2 is converted to ammonia and ammonium that serves as food source for plants and then animals; important for amino acids and proteins)

K. Protista
commonly referred to as "Protozoans"
eukaryotic—have a nucleus and membrane organelles
may or may not have cilia or flagella or cell walls
mostly heterotrophic
some photosynthetic
some parasitic
fresh and salt water
classified by movement

Observe:

1) *Paramecium* (Phylum ciliophora)—
   a) add methyl cellulose to see movement by cilia
   b) add Congo red-stained yeast to observe holozoic feeding (if acidic, will turn blue-green)

2) *Amoeba* (Phylum Sarcodina)
   movement and acquisition of food by pseudopodia

3) *Plasmodium* (Phylum Sporozoa)—parasitic, causes malaria; demo slide
   Understand life cycle
   2 hosts—mosquito (female *Anopheles*) and humans
4) *Euglena* (Phylum Mastigophora)—photosynthetic and heterotrophic. Move by flagella.