Major Types of Cells:

Prokaryote/Eukaryote cells:

Define the following: unicellular, multicellular, prokaryote, eukaryote

Prokaryote examples: bacteria, cyanobacteria (blue-green bacteria)

Eukaryote examples: protists, algae, fungi, plants, animals

Prokaryotes vs. Eukaryotes

Floral yoles vs. Eural yoles	
Have no nucleus (pro- rhymes with no)	Have a true nucleus (eu- rhymes with true)
DNA is in a nucleoid which is a dense area, but has no protective membrane, usually a single, circular chromosome	DNA is large amount and can have multiple strands, ie human DNA is a double helix. Protected by nuclear envelope with pores which regulates what goes in and out of the nucleus
No membrane bound organelles	Have many membrane bound organelles, such as mitochondria, ER, Golgi body, etc.
Smaller than eukaryotes 0.5 um-20 um (um stand for micrometers)	Larger than prokaryotes 10-100 um
Have ribosomes but they are smaller in size, found in cytoplasm Don't have microtubules in flagella/cilia so may not	Ribosomes are larger, also in cytoplasm. Larger size needed for producing more and larger proteins Have microtubules in flagella/cilia
have as forceful movements Cell membrane made of peptidoglycans (protein-sugars)	Cell membrane made of phospholipids (phosphate based lipids (fats))
Cell division by binary fission or budding. These are forms of asexual reproduction. Some bacteria can have conjugation where genetic material is exchanged. This is sexual reproduction.	Cell division in the body cells is mitosis; cell division in sex cells is called meiosis. Have asexual and sexual reproduction.
No tissue development. These organisms do not have complexity beyond the cell level. Cellular respiration sometimes occurs in cell membrane since no mitochondria	Some cells combine to make tissues, this can lead to extensive development in organs and organ systems. Cellular respiration in mitochondria
Aerobic or anaerobic	Most cells are aerobic, some such as yeast, are anaerobic
All unicellular	Unicellular and multicellular
Nutrition can be autotrophic, heterotrophic, or chemotrophic	Nutrition can be autotrophic or heterotrophic
Structures in bacteria:	Structures in: Protists Plants Animals