* Prokaryote: unicellular organism with relatively simple cell structure
  + Two types of bacteria
    - Eubacteria (true bacteria)
    - Archaea (ancient bacteria)
      * Genetic processes similar to eukaryotes
      * More closely related to eukaryotes
      * Have histone-like proteins
  + As closely related as they are to eukaryotes
  + DNA floats with rest of cellular contents
  + Genes on single circular molecule of DNA
    - Sometimes more than one molecule of DNA
      * plasmid
* Eukaryote: compartmentalized cell structure with components bounded by intracellular membranes
  + Unicellular or multicellular
  + Have nucleus
    - Separates DNA from other cellular contents
    - More control over genes
  + DNA closely associated with histones
    - Proteins wind DNA to form chromatin
    - Limit access to enzymes to read DNA
    - Enable DNA to fit in nucleus
  + Genes located on multiple linear molecules of DNA
    - Require mechanisms to ensure each chromosome copied and given to each new cell
  + Organelles may have own molecule of DNA
* Virus: neither prokaryotic nor eukaryotic
  + No true cellular structure
  + Reproduce only within host cells
  + Closely related to hosts
    - Evolved from hosts, not other viruses