

## Prokaryote

A prokaryote is a single-celled organism that lacks a nucleus and other membrane-bound organelles, prokaryotes are divided into two domains: *Bacteria* (formerly Eubacteria) and *Archaea* (formerly Archaeobacteria). Organisms with nuclei are placed in a third domain. Prokaryotes also lack mitochondria, or most of the other membrane-bound organelles that characterize the eukaryotic cell. Prokaryotes while being unicellular, some prokaryotes, such as cyanobacteria, may form large colonies. Others, such as mycobacteria, have multicellular stages in their life cycles. Prokaryotes are asexual, reproducing without fusion of gametes, although horizontal gene transfer also takes place.

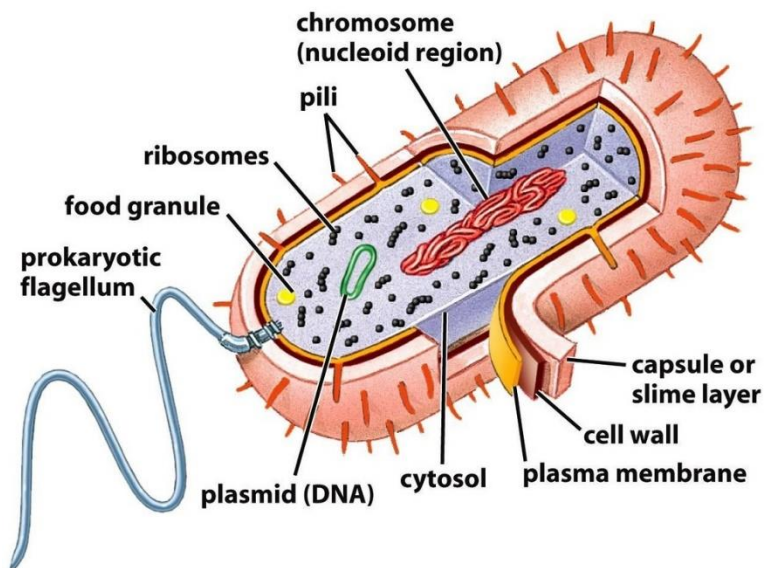
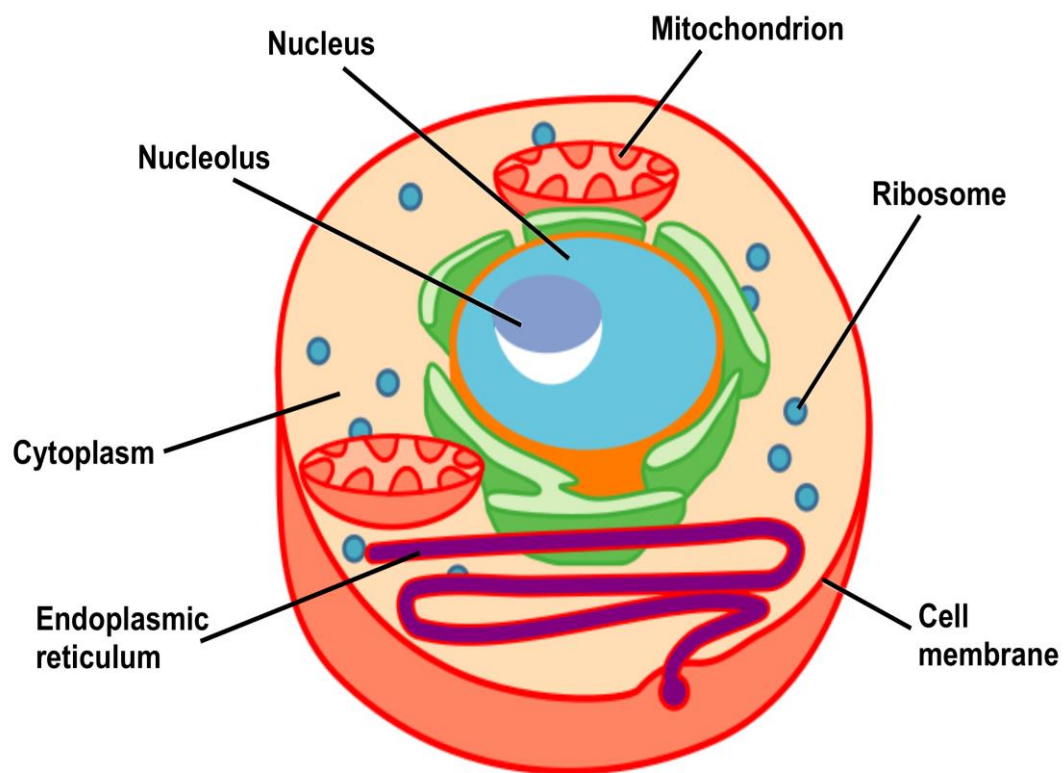
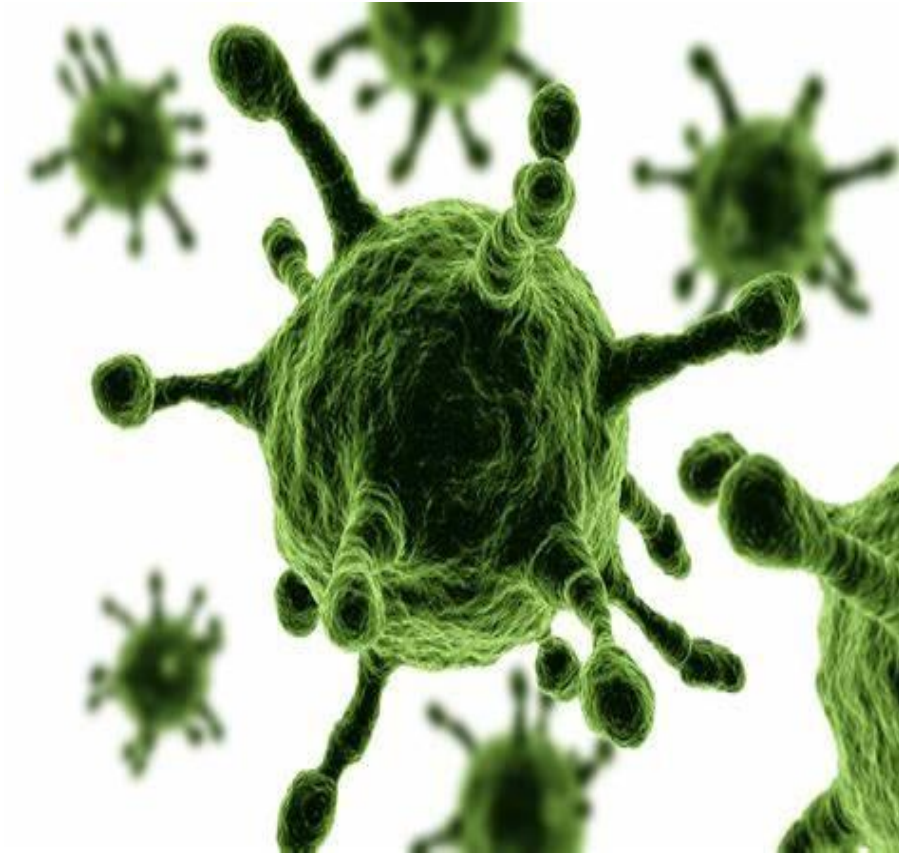


Figure 4.20a Biology: Life on Earth, 8/e  
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## **Eukaryotic**

cells are defined as **cells containing organized nucleus and organelles which are enveloped by membrane-bound organelles.** Examples of eukaryotic cells are plants, animals, protists, fungi. Their genetic material is organized in chromosomes.

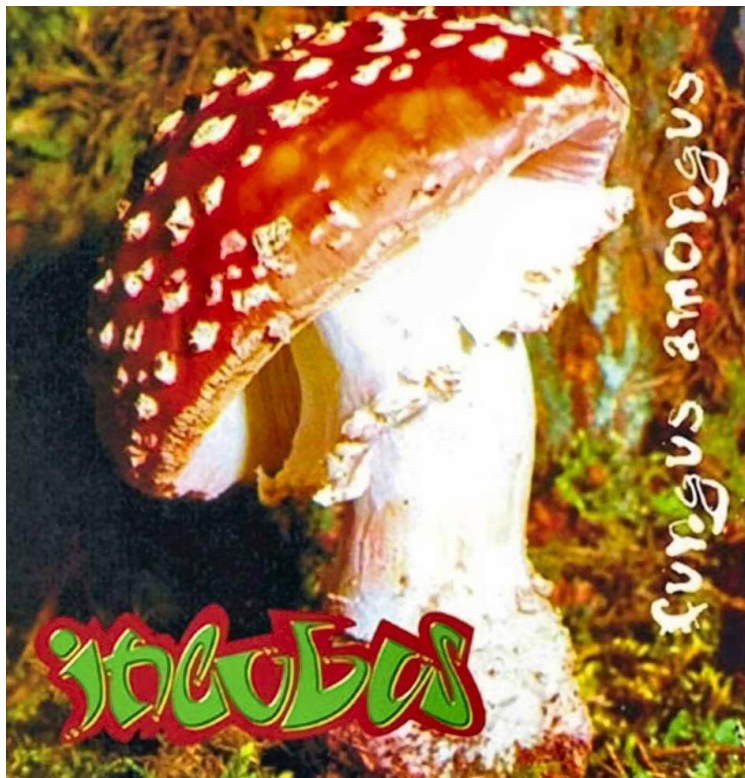




**Virus**



**Protozoa**



**Fungi**