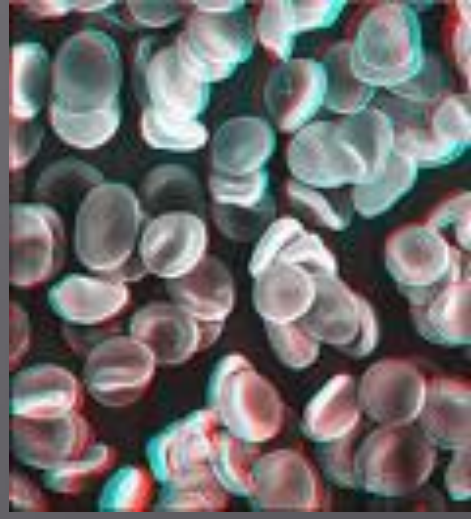
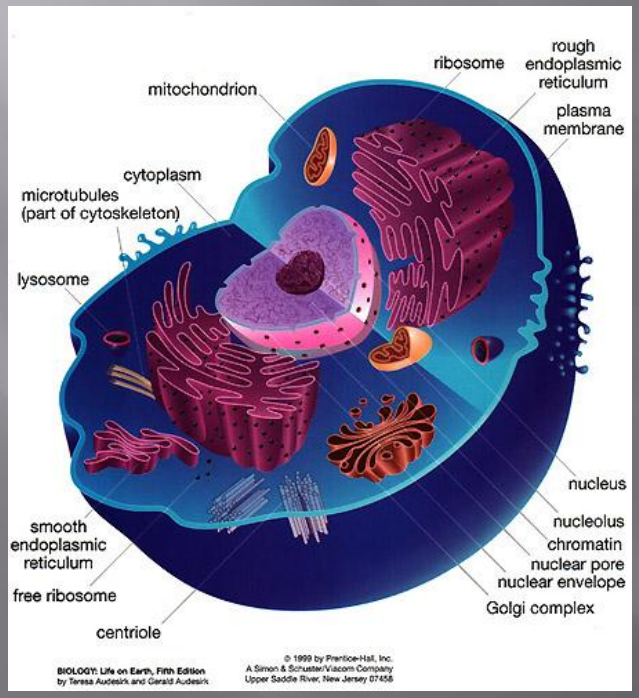
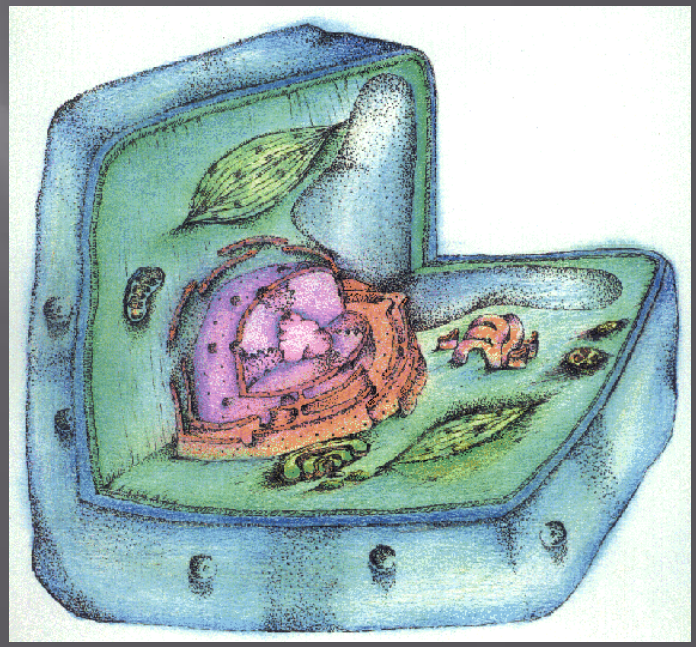


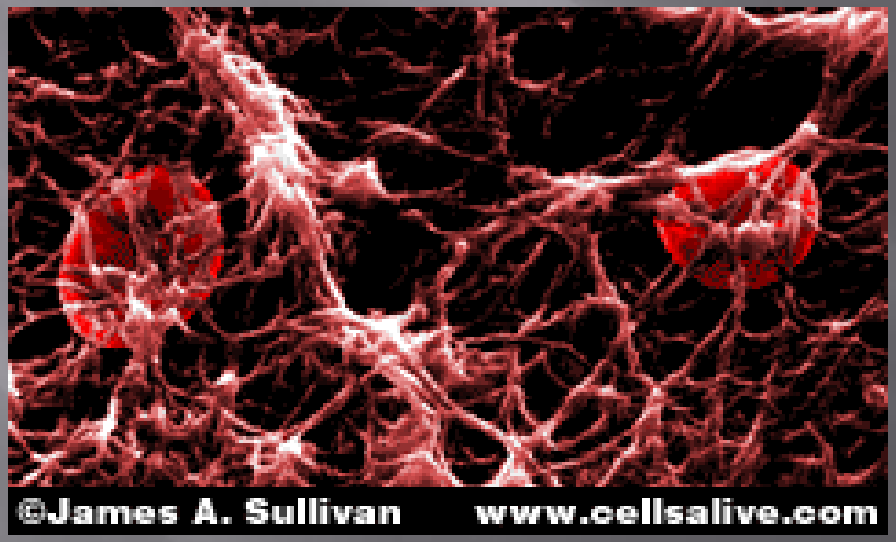
CELLS OVERVIEW





Cells and their History

- All living things are made of cells
- Cells are microscopic



Unicellular Organisms

- Just one cell
- Can still perform functions necessary for life

History of the discovery of cells

1. Robert Hooke observed dead cork cells under a simple microscope in 1665
2. 1838 Schleiden – proposed plant tissues are composed of cells
3. 1839 Schwann – proposed animal tissues are composed of cells
4. 1858 – Cells come from pre-existing cells

Cell Theory

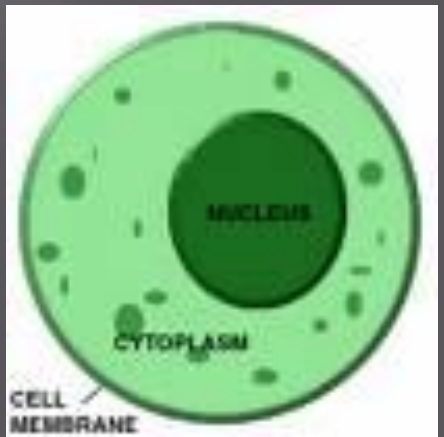
- Developed from observations of Hooke, Schleliden, Schwann and Virchow
- 1. all living things are composed of cells
- 2. the chemical reactions which occur in organisms occur in cells
- 3. cells come from pre-existing cells

Characteristics of all Living Things

- 1. Greater organization than non-living things
- 2. Reproduce
- 3. Grow
- 4. Respond to stimuli/changes in environment.
- 5. Homeostatic – try to keep internal environment unchanged
- **** Must meet all 5 to be alive!***

How Cells Work

- Cell Organelles
- 1. structures within cells that perform specific functions (like organs in animals and humans)
- 2. **Cytoplasm** is jelly like solution in cells where the organelles float



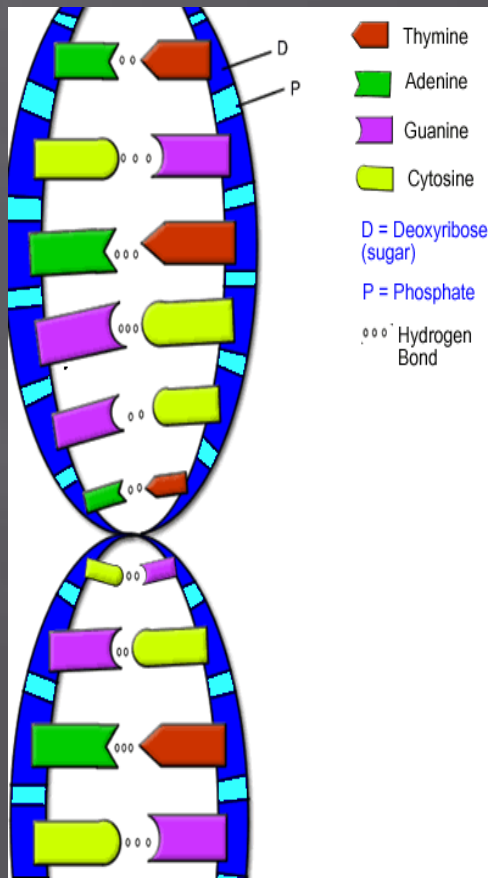
Cell Processes

- 1. cells must have ways of eating, breathing and reproducing
- 2. process are the basis for the corresponding processes in large organisms
- Eating = sugar getting to cells for cellular respiration

DNA- In all cells

- **DeoxyriboNucleic Acid**
- Long molecule which directs
- proteins production cells
- Proteins affect cell processes

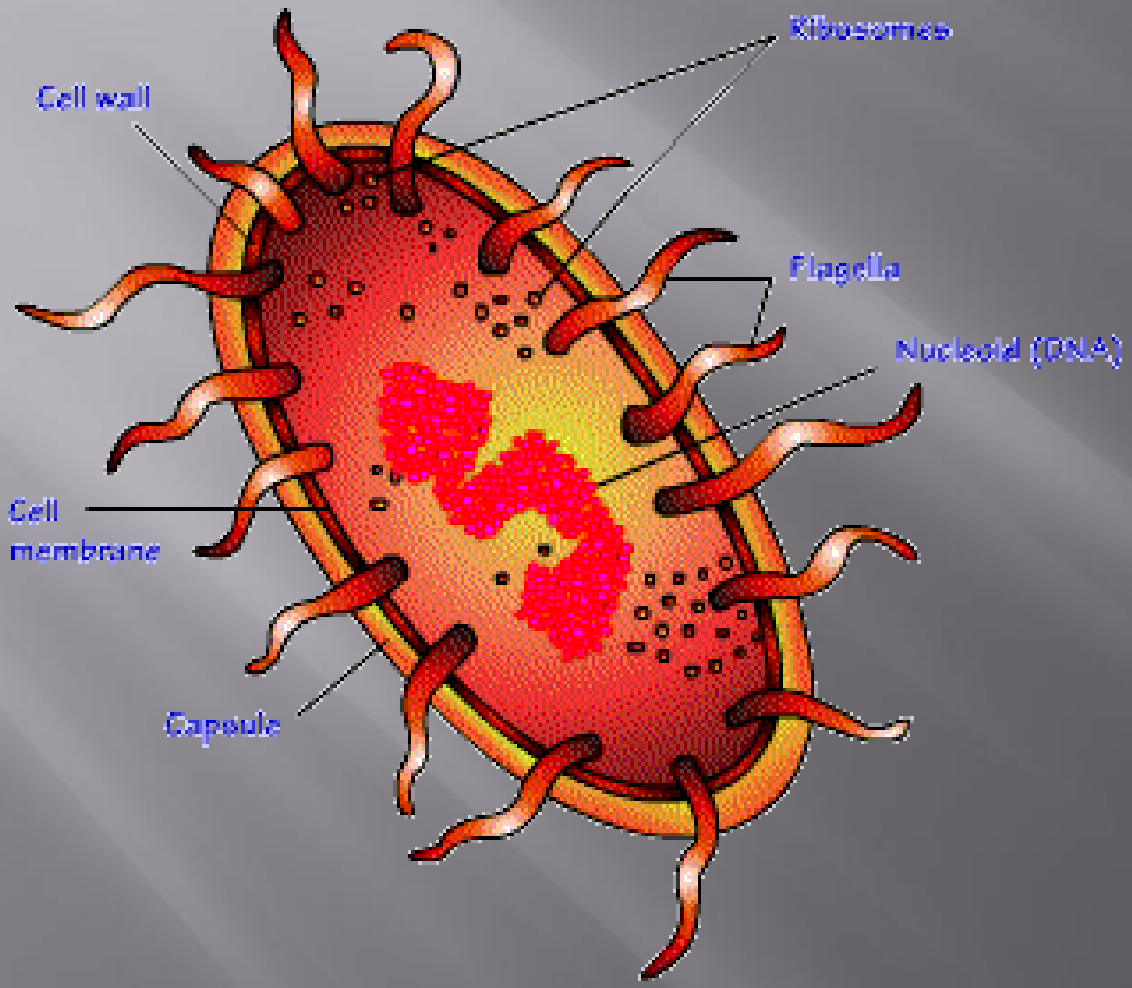
and how they perform

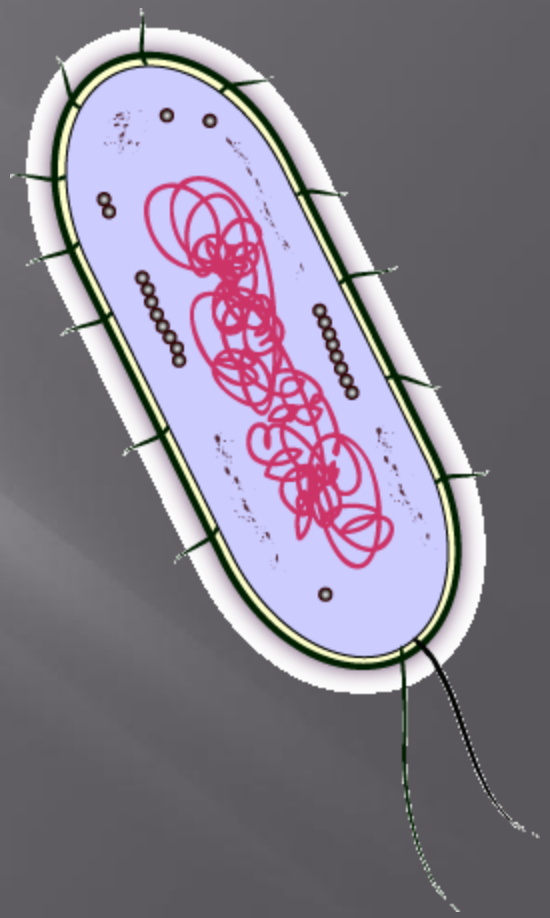


Types of Unicellular Organisms

- **Prokaryotes**
- 1. AKA bacteria
- 2. evolved before more complex class of organisms- eukaryotes
- 3. Do not have membrane bound organelles
- 4. DNA is arranged in a circular shape

Prokaryotic Cells





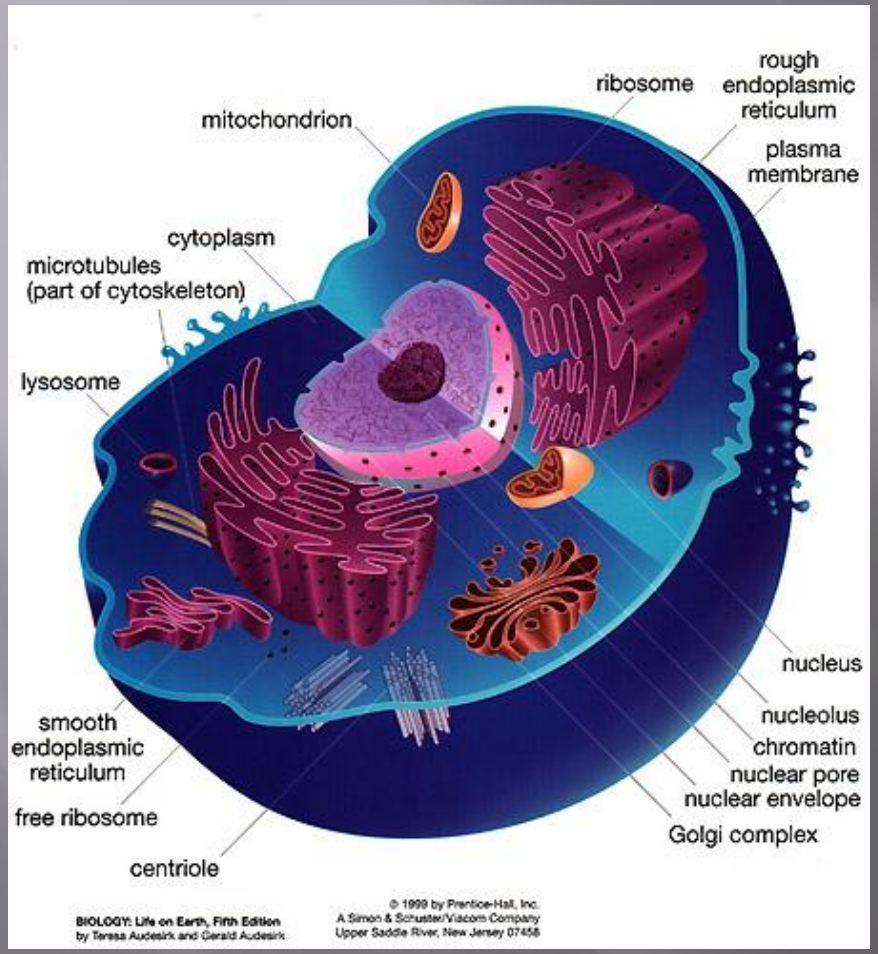
Types of Unicellular Organisms

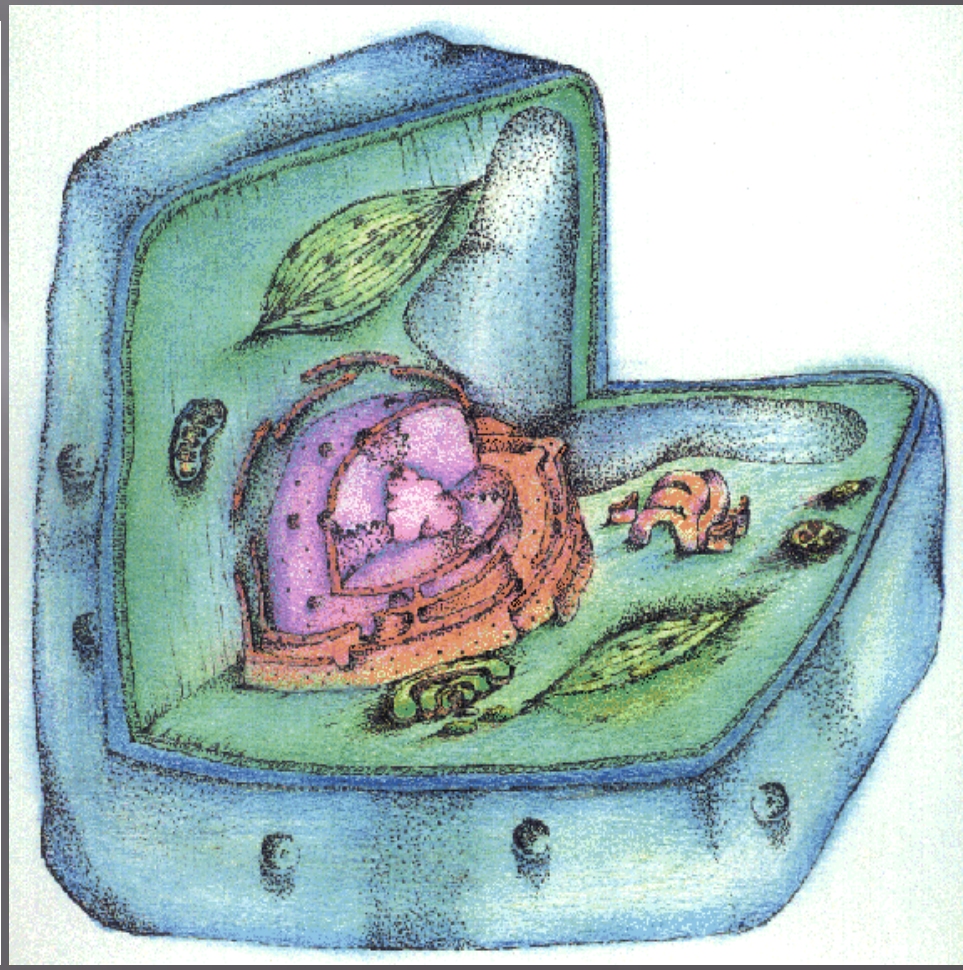
- **Eukaryotes**
- 1. more complex than prokaryotes because they have membrane bound organelles
- 2. DNA is linear

Types of Unicellular Organisms

- **Prokaryotes vs. Eukaryotes**
- Have the following parts in common with Eukaryotes
- 1. Cell membrane
- 2. DNA material
- 3. Ribosomes
- 4. Cytoplasm

Eukaryotic Cells





Types of Unicellular Organisms

- **Heterotrophs vs. Autotrophs**
  - Get food from elsewhere vs. make own food

- Aerobes vs. Anaerobes
  - Organisms that require oxygen vs. organisms which don't need oxygen