Cytology-Chapter 3

1. Cell: basic unit of structure and function of all living things
    a. Can make new cells: reproduce-mitosis
    b. Made up of organic compounds (carbs, proteins, lipids, and nucleic acid)
    c. Inorganic compounds (Na+ Cl- +H_2O)
    d. 75-100 trillion in the body
    e. Measured in units called micrometers (1 micrometer = 1/1000 millimeter)
    f. Size + shape = function
2. Cytology: study of the cells
    a. Cytologist: scientist who studies cells
3. Development of the cell theory: (Historical)
    a. Robert Hooke:
        i. 17th century English scientist
        ii. Viewed cork slices and saw compartments that he call **cells**
        iii. "Father of Cytology"
    b. Robert Brown:
        i. Scottish Botanist
        ii. Discovered the **nucleus**
    c. Anton Van Leeuwenhoek:
        i. Invented the **compound light microscope**
        ii. Used the microscope to view blood, rain water, lice, etc.
        iii. "Father of Microbiology"
    d. R.J.H Dutrochet: (1824)
        i. Stated that all plant and animal tissues were composed of groups of cells
        ii. **Tissue growth:** it's due to the growth of individual cells or groups of cells
    e. Felix Dujardin: (1835)
        i. French Biologist
        ii. Stated: **single celled organisms are self-sufficient living things**
        iii. Stated: **that all of the living parts of a cell added together are the protoplasm**
    f. Mathias Schleiden:
        i. 1838 German Botanist
        ii. Said **all plants are composed of cells**
    g. Theodore Schwann:
        i. 1838 German Zoologist
        ii. Said **all animals are composed of cells**
    h. Rudolf Virchow:
        i. 1855 German Physician
        ii. **Living cells can only be produced by other living cells**
        iii. Principle of Biogenesis
4. Cell Theory
    a. Cell is the basic unit of structure and function of all living things
    b. All plants and animals are composed of cells
    c. Living cells can only be produced by other living cells
        i. Developed by Schleiden and Schwann