

# 7.1 A View of the Cell

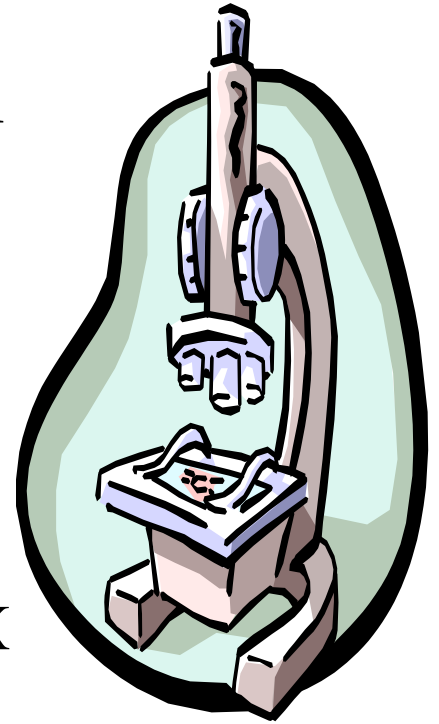
## I. The Discovery of Cells

### A. The History of the Cell Theory

1. Cells-the basic unit of living organisms.
2. Anton van Leeuwenhoek-mid-1600s
3. Simple light microscope
4. Compound light microscopes-up to 1500X
5. Robert Hooke-cells in cork
6. Theodore Schwann-animals
7. Matthias Schleiden-1830 plant cells

### B. Cell Theory

1. All organisms are composed of one or more cells.
2. The cell is the basic unit of organization of organisms.
3. All cells come from preexisting cells.



# 7.1 The Discovery of Cells

## (cont.)

### C. Electron Microscopes

1. 1940's invented
2. Magnifies objects up to 500,000X
3. Structures within the cell
4. Two Types:



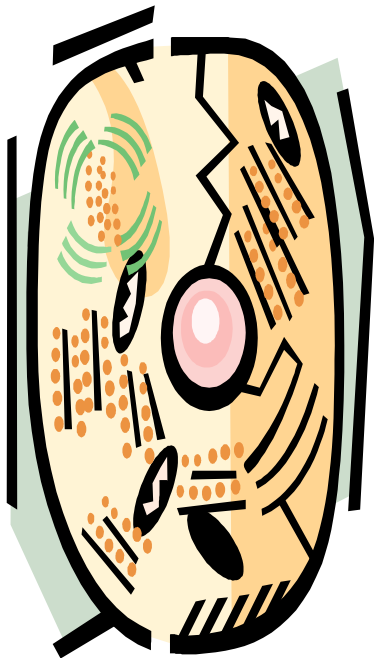
- a. SEM-scanning electron microscope  
(three-dimensional shape)
- b. TEM-transmission electron microscope  
(structures in cell)
- c. STM-scanning tunneling microscope  
(investigates surface atoms)

### D. Two Basic Cell Types

1. Prokaryotes-lack internal membrane-bound

# 7.1 The Discovery of Cells (cont.)

Structures.



2. Eukaryotes-cells containing membrane bound structures.
3. Organelles-the membrane bound structures within eukaryotic cells.
4. Compare prokaryotic and eukaryotic cells, pg. 180.
5. Nucleus-Brown and Virchow-manages cellular functions.