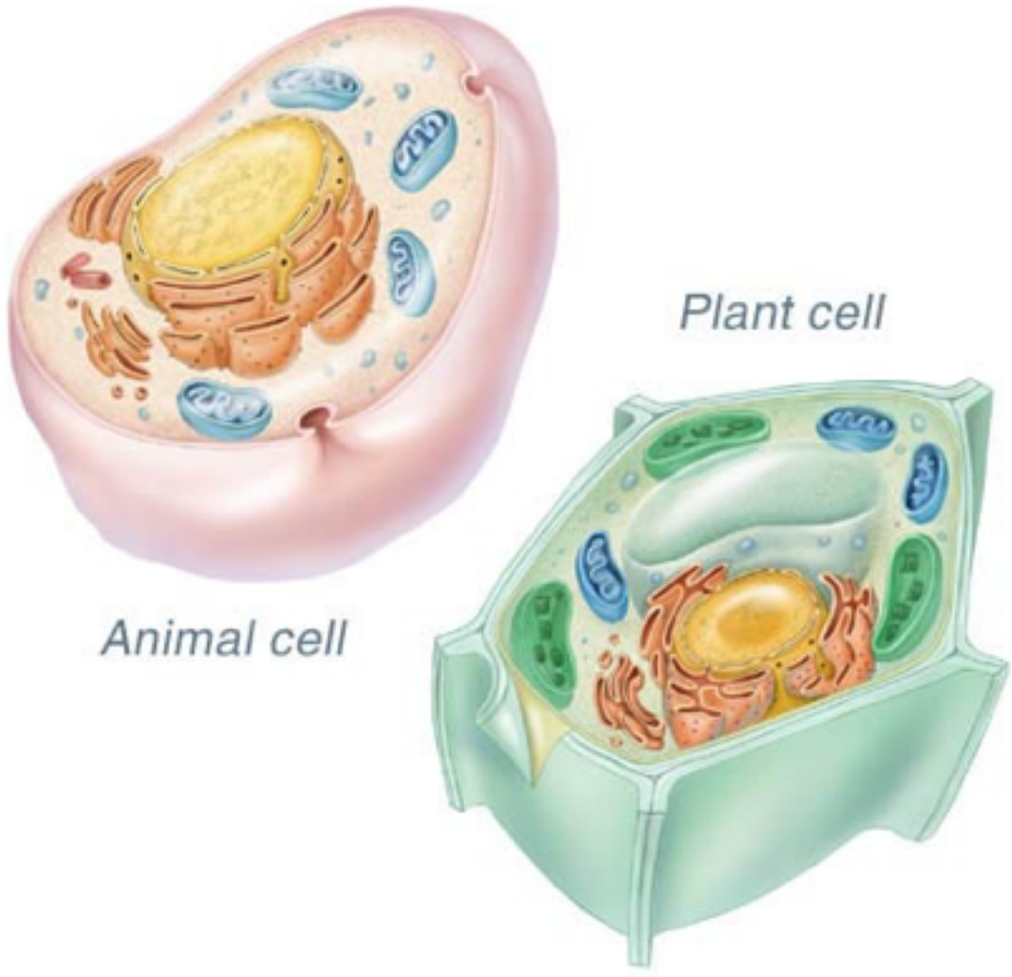
Cell Theory

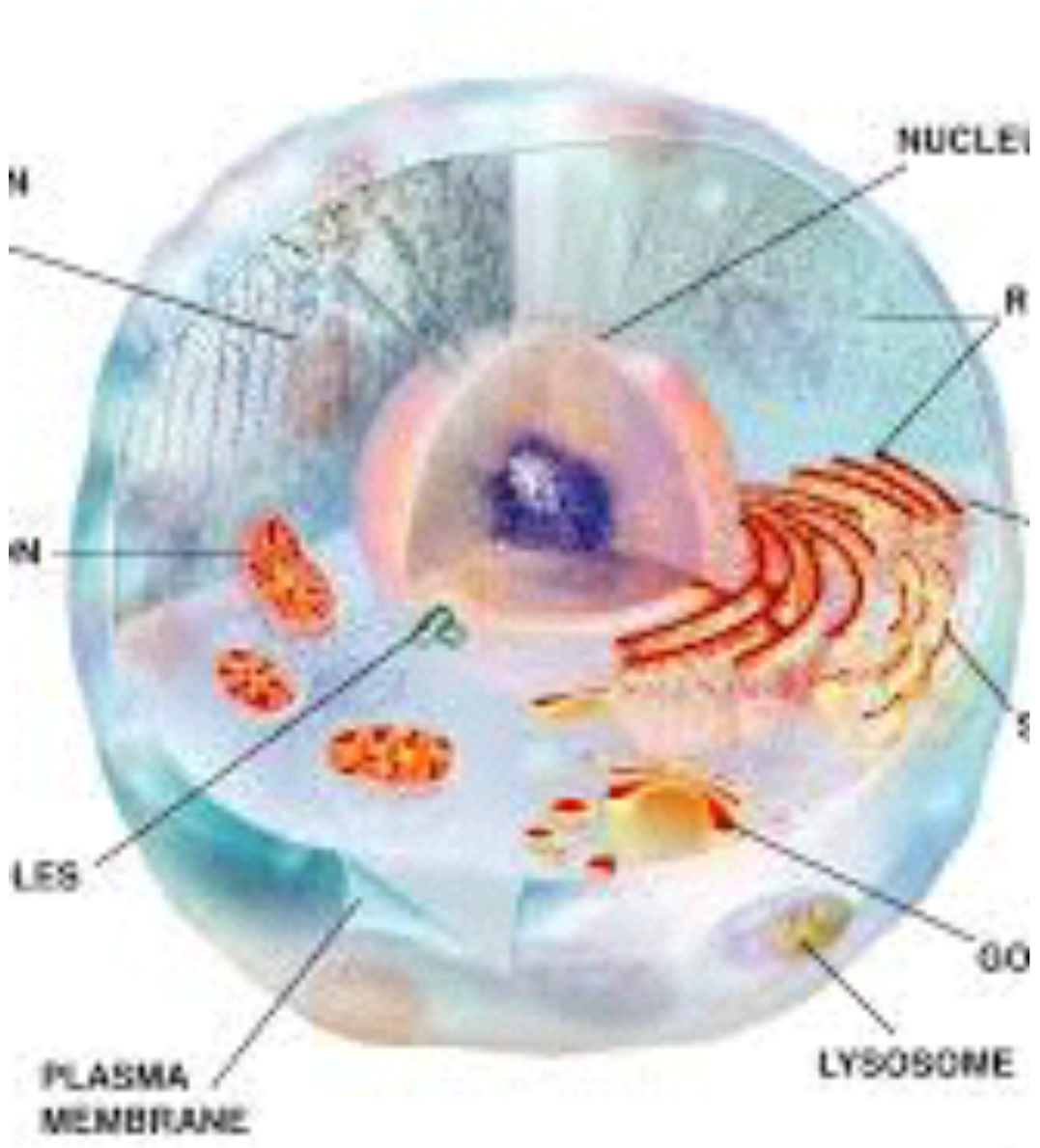
What are cells?

- Cells are the basic units of structure and function in living things.



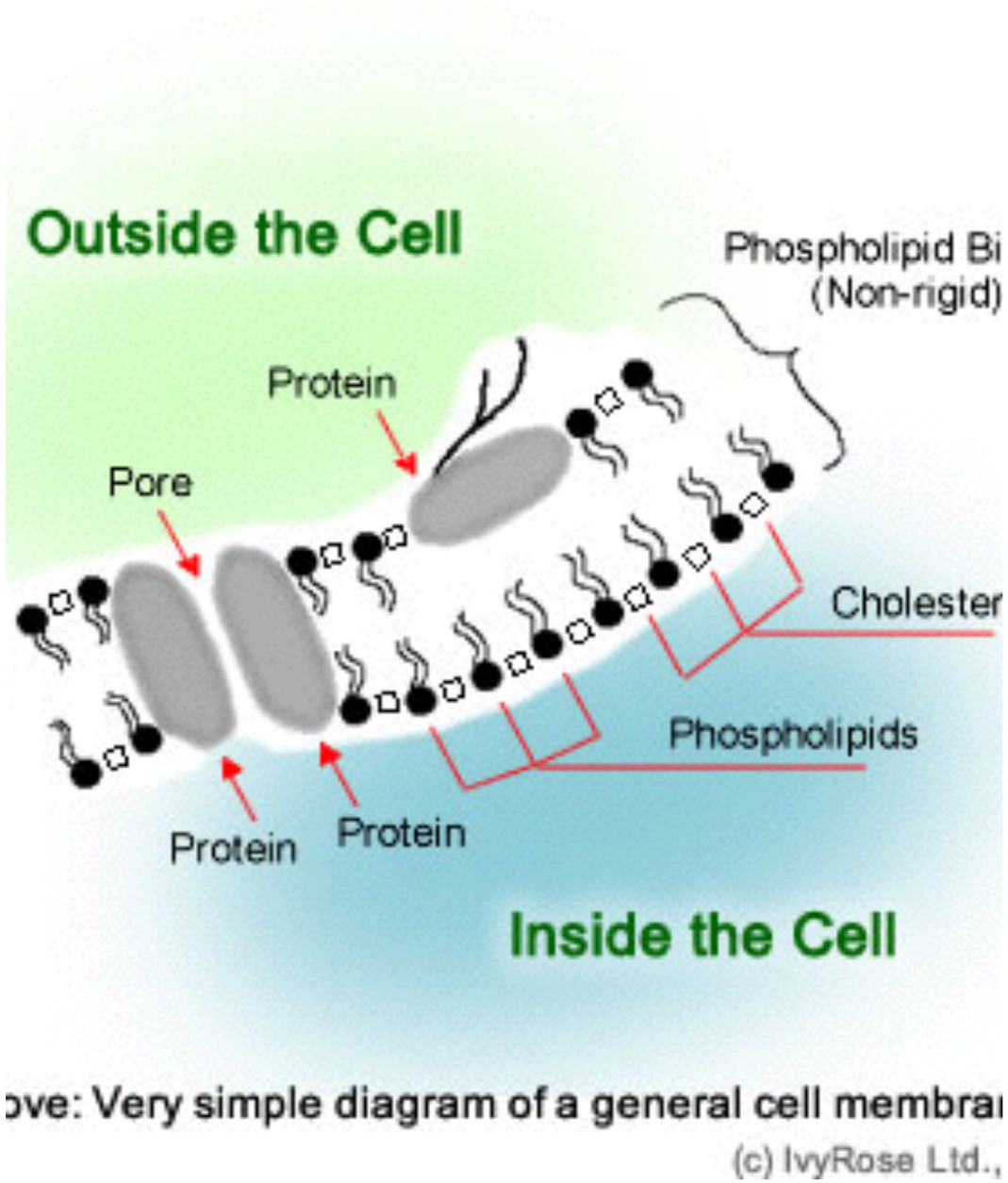
How are Cells related to Structure

- The structure of a living thing is determined by the way its cells are arranged.



How are Cells related to Function

- Cells are involved in all bodily functions. In order to survive, all cells must carry out the same functions as the body.



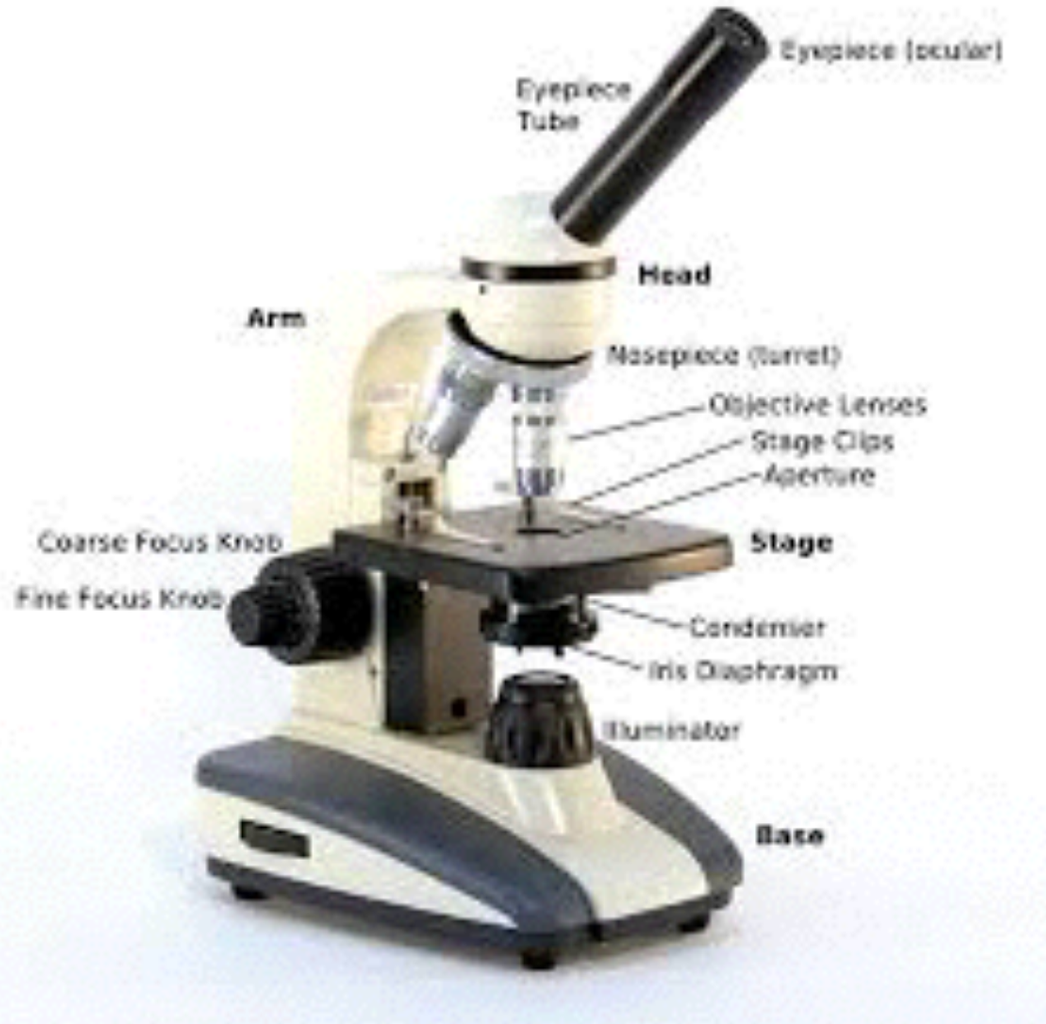
ove: Very simple diagram of a general cell membra

What is Cell Theory?

- Cell Theory is the relationship between cells and all living things.

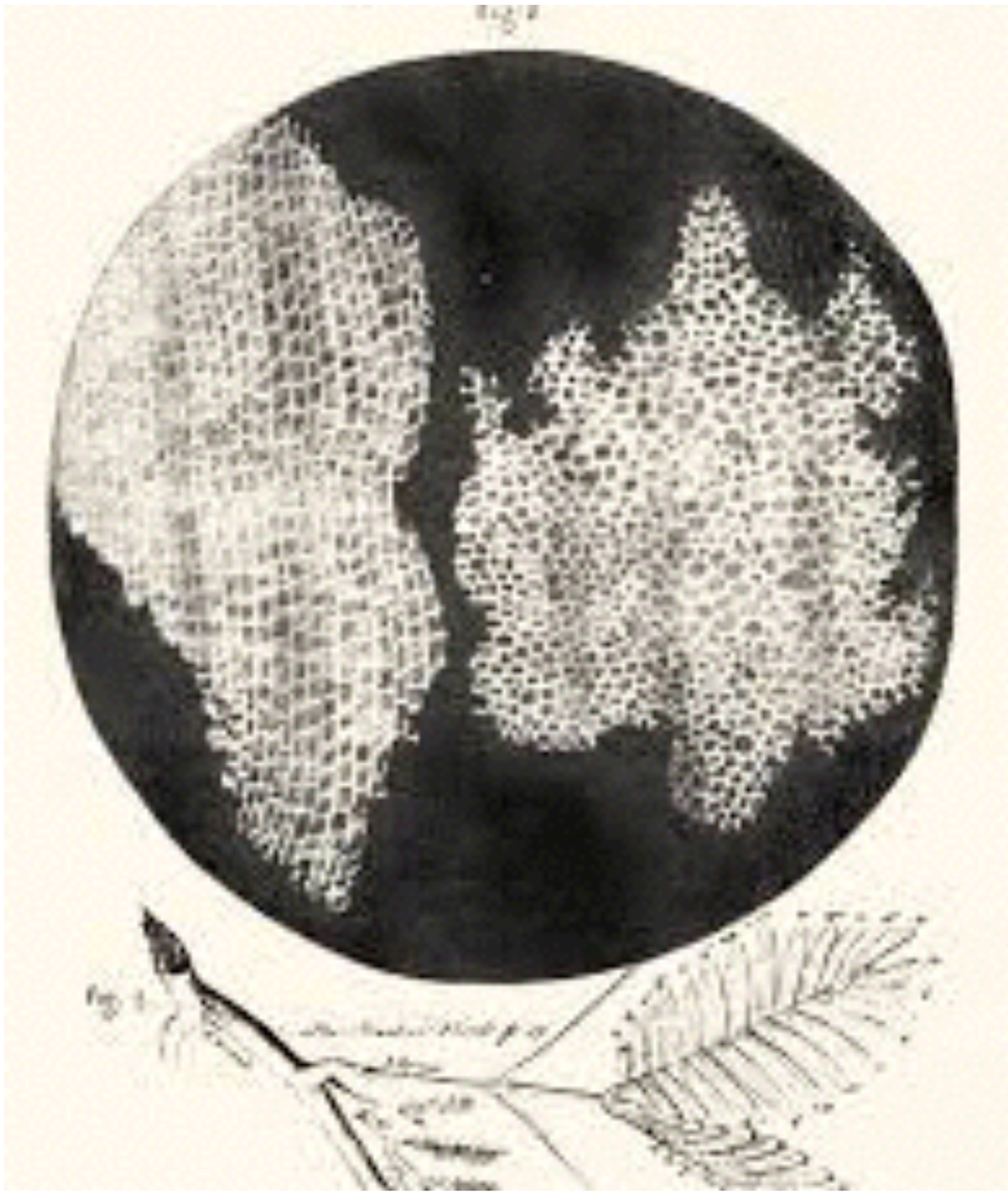
What is a microscope?

- An instrument to make small objects look larger.



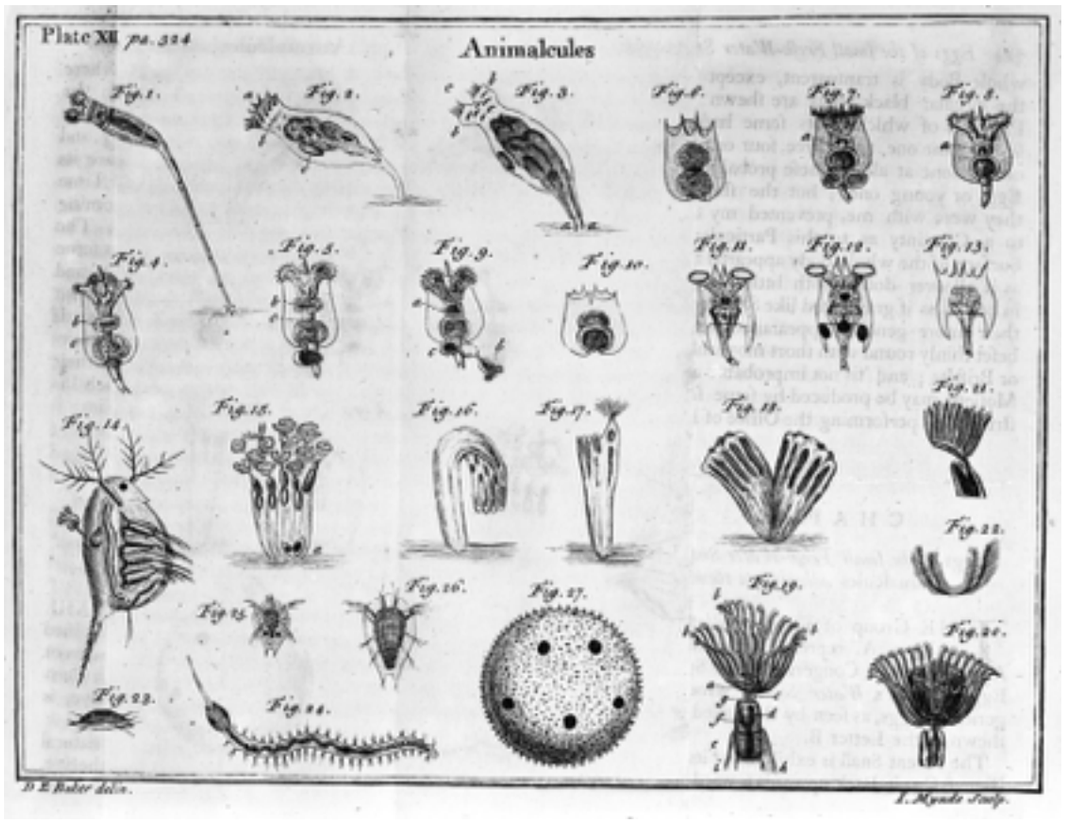
What did Hooke Discover?

- Hooke discovered the remains of cells and gave them the name “Cells”.



What did Leeuwenhoek discover?

- Leeuwenhoek discovered single-celled organisms that he named animalcules.

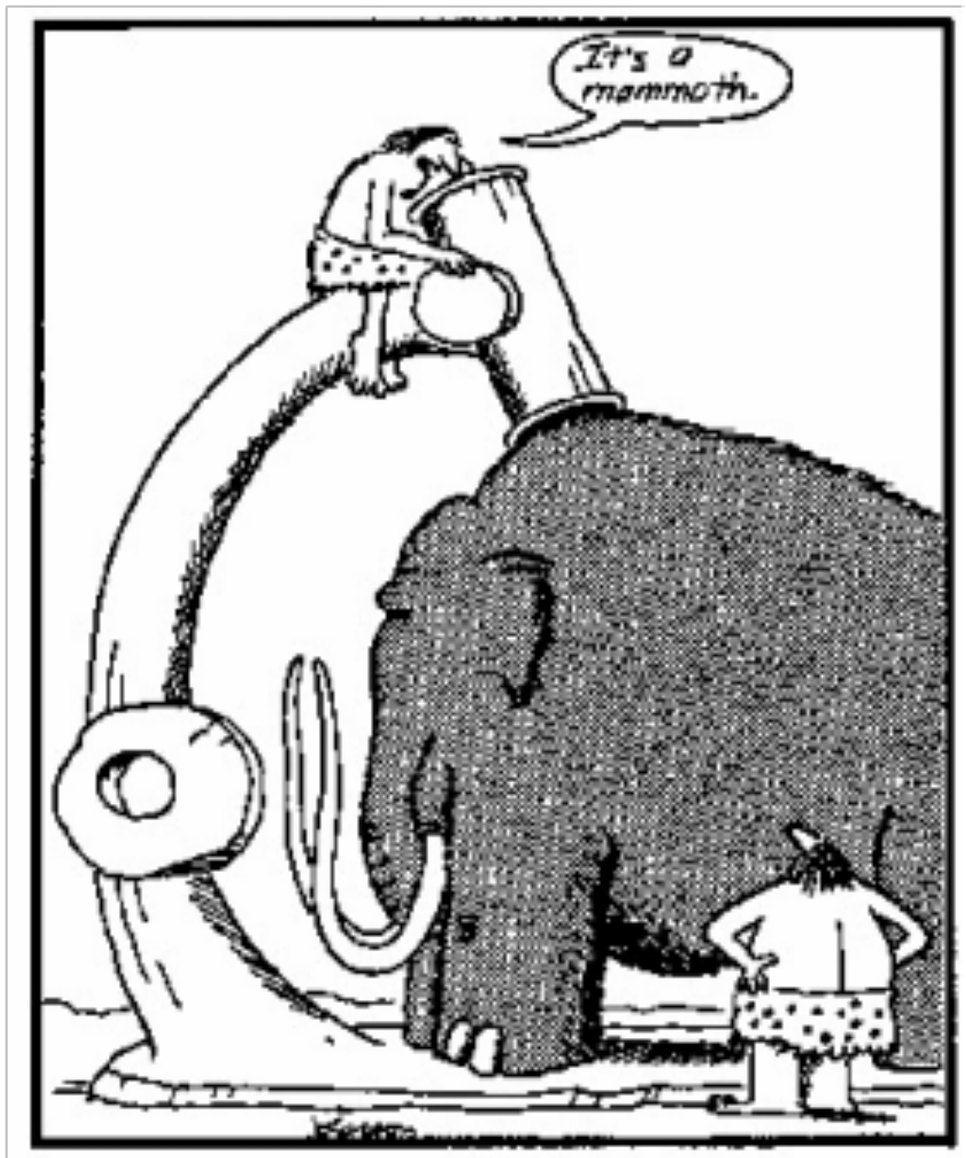


What does Cell Theory state?

- All organisms are composed of one of more cells.
- The cell is the basic unit of structure and function in all living things.
- All cells are produced from existing cells.

How do Microscopes work?

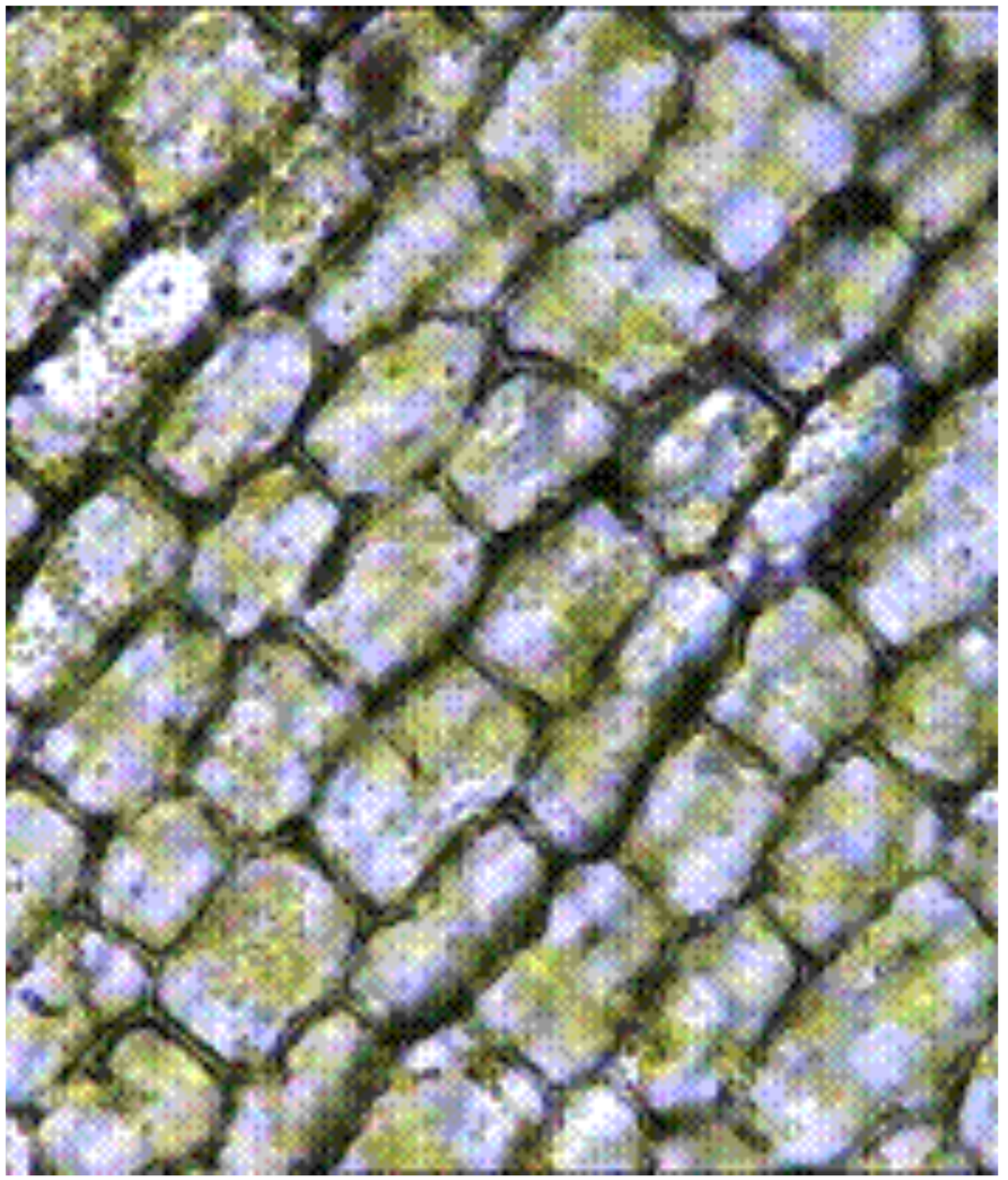
- Some microscopes focus light through lenses to produce a magnified image, and other microscopes use beams of electrons.



Early microscope

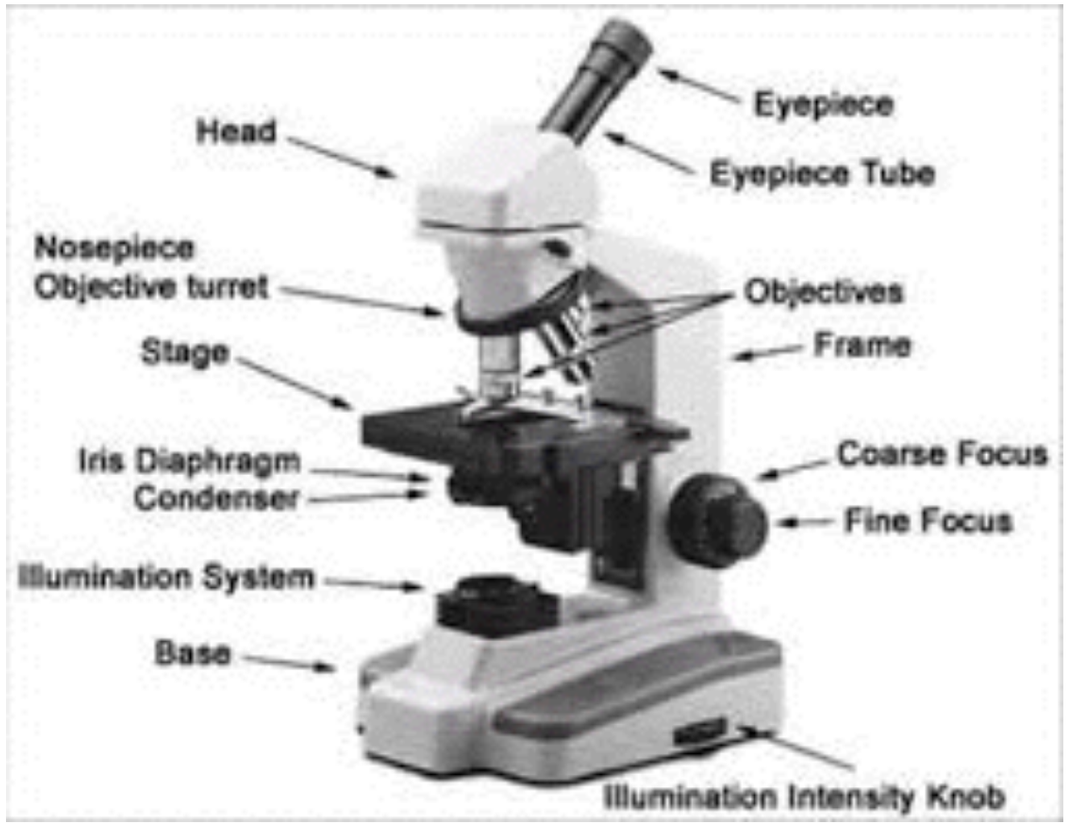
What is Magnification?

- Magnification is the condition of things appearing larger than they are.



How is magnification calculated with a compound microscope?

- Magnification is calculated by the eyepiece magnification (10x) multiplied by the magnification of the objective lens (4x, 10x, or 40x).



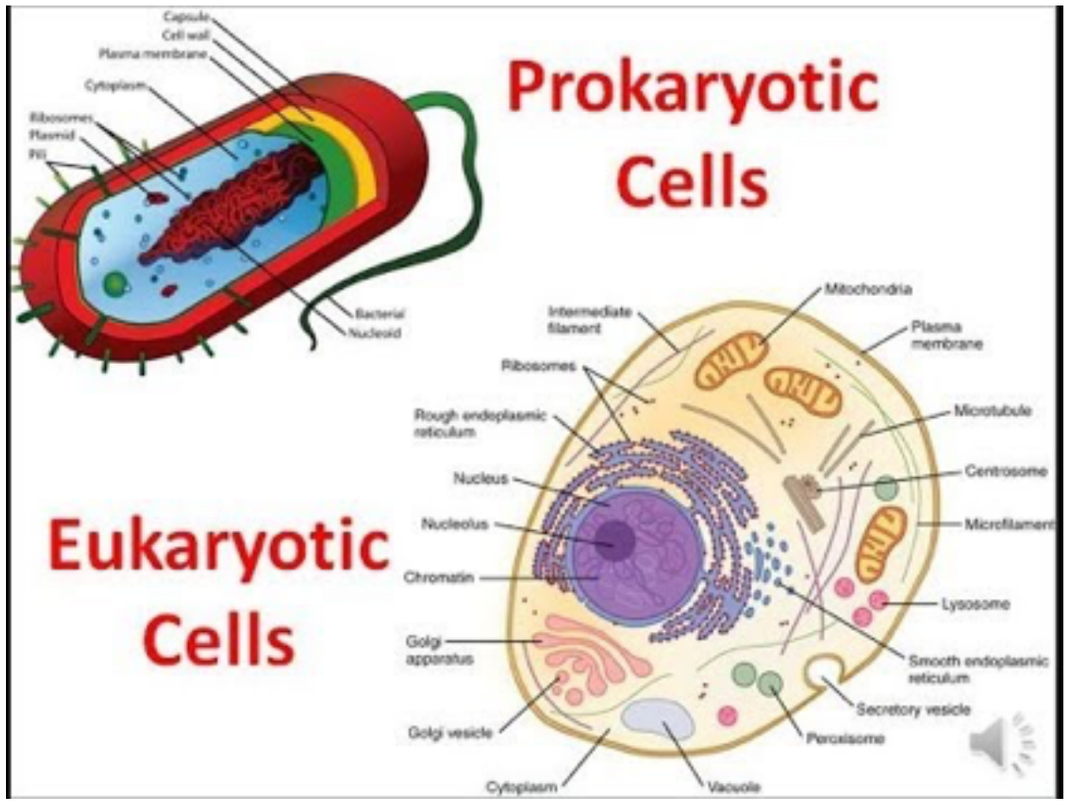
- Example:
- 10x (Eyepiece) **X** 4x= **40x**
- 10x **X** 10x = **100x**
- 10x **X** 40x = **400x**

What is an Electron Microscope?

- Electron microscopes allow high magnification of objects that are too small to be seen with light microscopes.

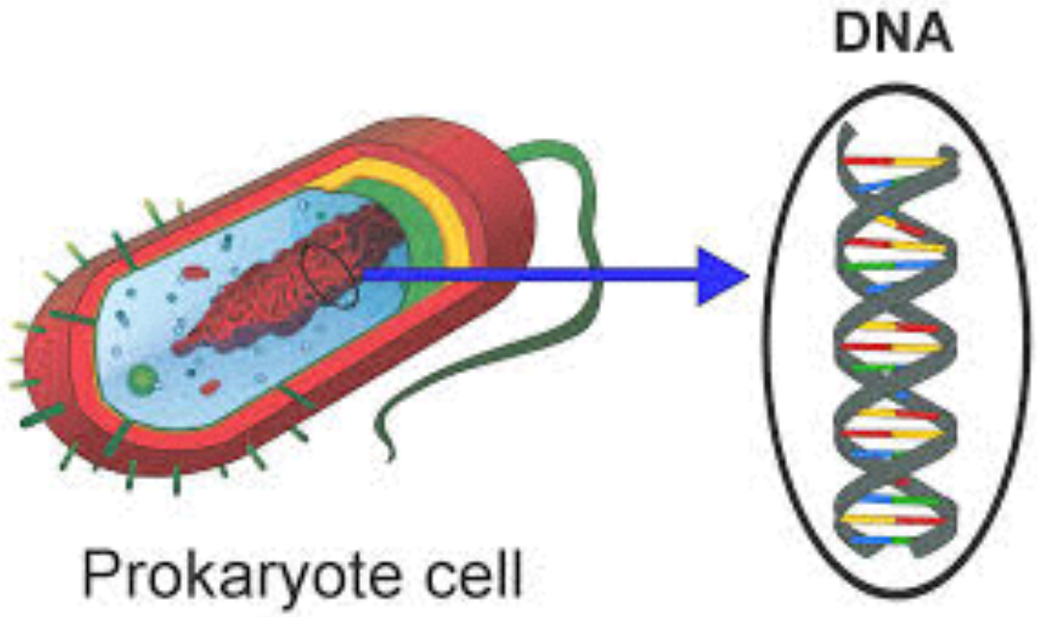
What are the two types of Cells?

- All cells can be divided into two groups based on the presence of the nucleus. The **nucleus** is a membrane-covered organelle that contains DNA.



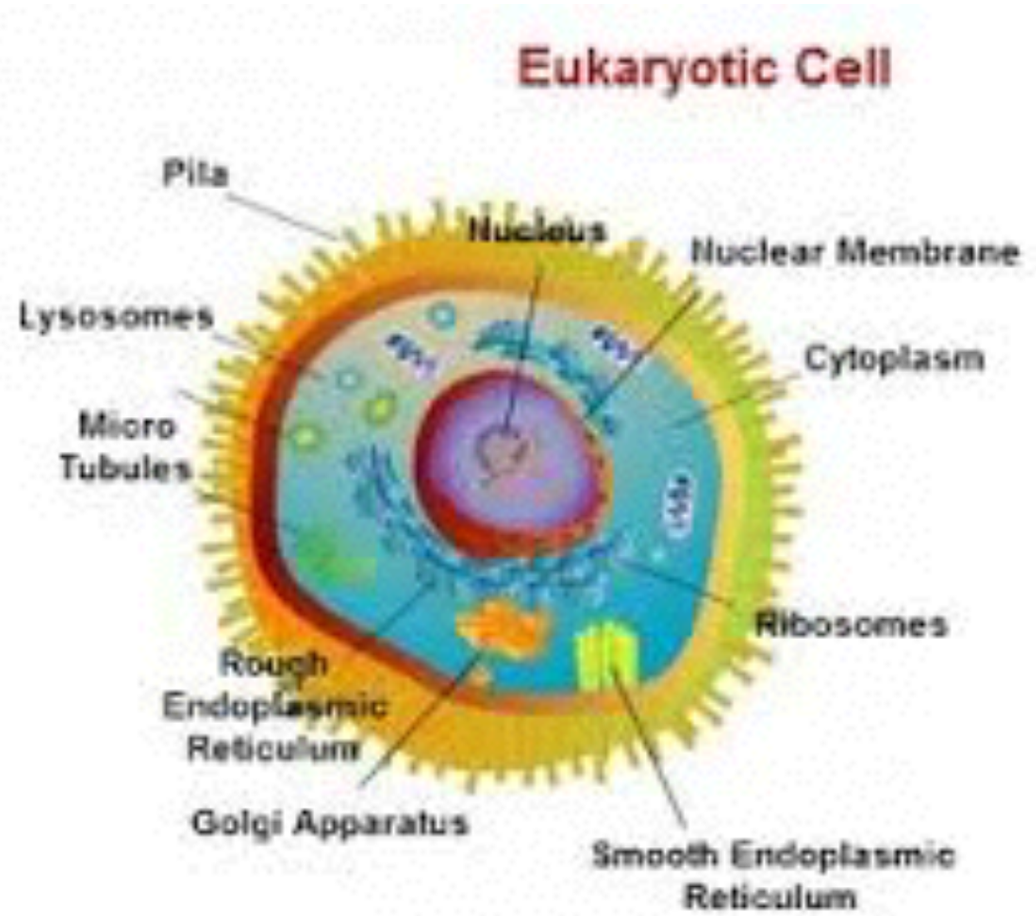
What are Prokaryotic Cells?

- Cells that have No Nucleus, No membrane-covered organelles, Circular DNA,
- Bacteria



What are Eukaryotic Cells?

- Cells that have a Nucleus, Membrane-covered organelles, Linear DNA,
- Most Fungi,Plants, and Animals.



REMEMBER

YOU ARE **EU**KARYOTIC

Cells

1. How is Life Organized?

Cell

tissue

organ

Organ System

Organism

Population

Community

Ecosystem

Biosphere

larger organisms = more cells

Multicellular

unicellular

2.What is cell theory?

1. All organisms are composed of one or more cells.

2.The cell is the basic unit of life.

Contains cell membrane and organelles

3. All cells come from cells.

contains DNA

Prokaryotic

Eukaryotic