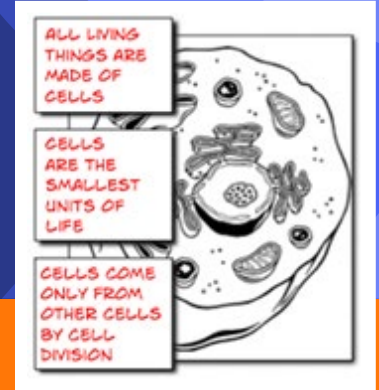


Quiz 4 Notes



The Cell Theory

Mark each statement as **O** for Original Theory and **M** for Modern Theory.

- ___ 1. All living organisms are made up of cells.
- ___ 2. Energy flow occurs within cells.
- ___ 3. The cell is the basic unit of life.
- ___ 4. Cells arise from pre-existing cells.
- ___ 5. Heredity information (DNA) is passed from cell to cell.
- ___ 6. All cells have the same basic chemical composition.

Prokaryotes vs. Eukaryotes

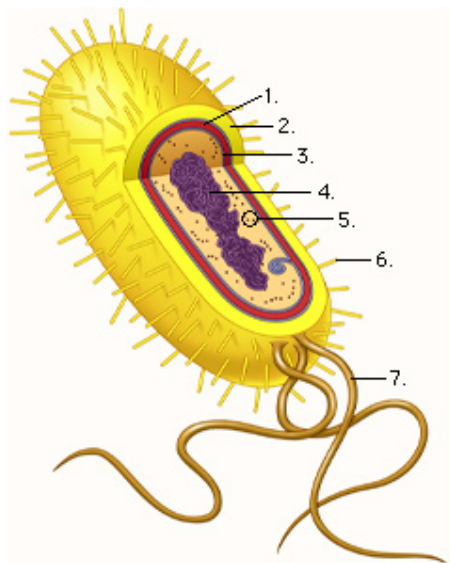
Prokaryotes - cells do ___ have a nucleus; DNA is ___ protected

- Example: ___
- Size: ___
- Shape: ___

Eukaryotes - cells DO have a ___; DNA is protected in the ___

- Example: ___
- Size: ___
- Shape: ___

Prokaryote Cell Organelles



Parts of a Prokaryote Cell

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

Notes continue on page 2

VOCABULARY

Cell – the basic unit of all life, microscopic; cell is Latin for “*small compartment*”

Organelles – perform specific functions to complete the challenges of life in a cell; the parts of a cell

Nucleus – contains genetic information; control center of the cell

- Nuclear membrane – controls what enters and exits the nucleus
- Nucleolus – starts production of ribosomes

Cytoplasm – gel-like substance surrounds nucleus and contains organelles

Plasma (Cell) Membrane – surrounds the cell and separates its contents from the outside world; allows materials to move into and out of the cell

Pilus (pili) – attachment appendages used to pull prokaryotic cells together

Capsule – sticky protective cover on some prokaryotes

Cell wall – **supports and protects** PLANT cells and prokaryotes (with a different chemical composition)

Nucleoid region – location of DNA in prokaryotes, no membrane

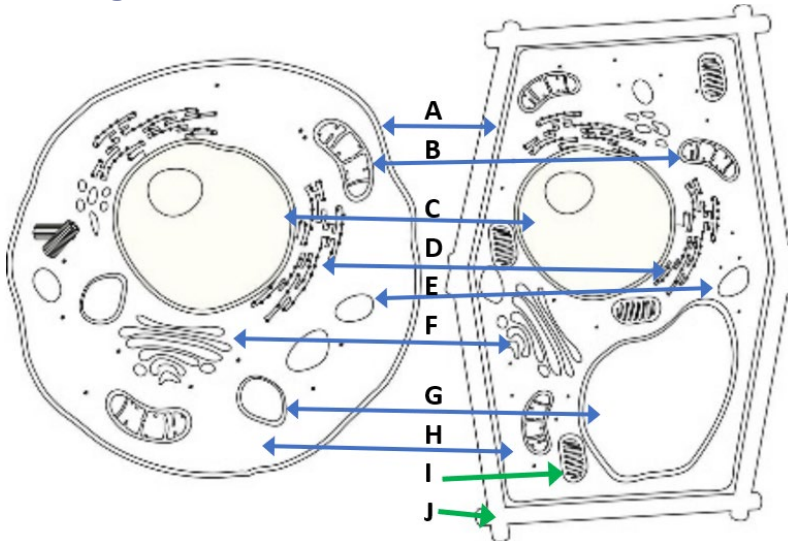
Cilia – hair-like structures to aid movement; shorter and can be a hundred or more on the cell

Flagella – hair-like structures to aid movement; long, only one to eight per cell

Parts of a Eukaryote Cell

- | | |
|----|----|
| A. | F. |
| B. | G. |
| C. | H. |
| D. | I. |
| E. | J. |

Cell Organelles



Endoplasmic Reticulum – controls the **movement of proteins** throughout the cell; main organelle of the *endomembrane system*

- o **Smooth Endoplasmic Reticulum** = no ribosomes on the surface
- o **Rough Endoplasmic Reticulum** = ribosomes on the surface

Ribosomes – make **proteins for the cell**; found in the cytoplasm or on rough endoplasmic reticulum

Golgi body or Golgi apparatus – packages and moves proteins.

Mitochondria – the **powerhouse** of the cell (converts food into energy for the cell)

Vacuole – stores **water and food**; and provides support

Lysosome – holds enzymes used to **digest** materials for the cell and recycle wastes

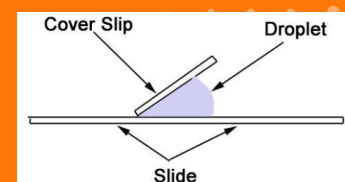
Chloroplast – takes energy from the sun and **makes food** for the PLANT cell

Microscope – the instrument used to look at very small things (diagram below)

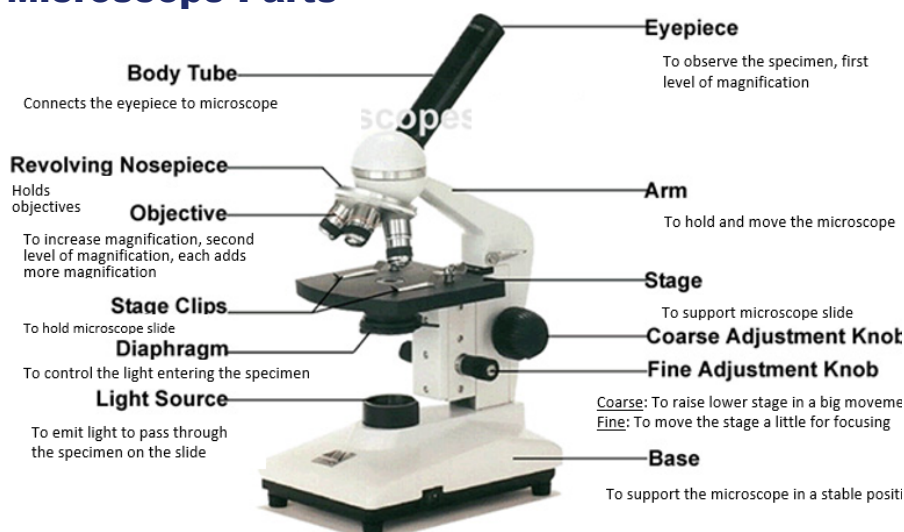
Slide – the glass specimens are placed upon for viewing under a microscope

Cover slip – a thin square piece of glass placed over a specimen for viewing under a microscope

Stains – a dye added to a specimen to make viewing through a microscope easier



Microscope Parts



Creating a Microscope Slide

Dry Mount ... In a dry mount, the specimen is placed directly on the slide. A cover slip may be used to keep the specimen in place and to help prevent the objective lens. Dry mounts are suitable for specimens such as pollen, hair, feathers, or plant material.

Wet Mount ... In a wet mount, a drop of water is used to suspend the specimen between the slide and the cover slip.

1. Place the sample on the slide.
2. Using a pipette, place a drop of water on the specimen.
3. Then place the edge of the cover slip to the edge of the water at a 45 degree angle and carefully lower the cover slip into place.
 - This method (see image to the right) will help prevent air bubbles from being trapped under the cover slip.