

### Basic Cell Theory

Living Organisms can only exist where:

- an energy source is available
- liquid water is available
- the chemical building block necessary for life exist
- stable environmental conditions exist

### MRS GREND

M movement

R respiration

S sensitivity

G growth

R reproduction

E excretion

N nutrition

D deoxyribonucleic acid (DNA)

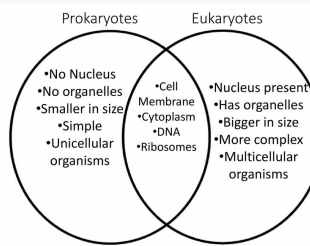
### Tenets of cell theory

All organisms are composed of cells

All cells come from pre-existing cells

The cell is the basic organization of an organism

### Prokaryote vs Eukaryote



### Eukaryotes vs Prokaryotes

Plant                      Bacteria

Animal                    Archaea

Protista

Fungi

### Cell Size

Cells are limited in size by their ability to exchange substances with their environment.

Every living cell must maintain its internal environment.

The cells relies on the plasma membrane to exchange the necessary material with its surroundings at an appropriate rate.

### Surface Area to Volume ratio

SA:V is a measure of the critical balance.

As the volume increases the metabolic needs increase too.

The plasma membranes ability to meet these metabolic demands increases but not at the same rate.