

### LIVING ORGANIZMS

All living organisms carry out seven life processes:-

Movement, Respiration, Sensitivity, Growth, Reproduction, Excretion, Nutrition ( They all form the word **MRS.GREN**)

Any living organism is made of **cells**

All cells are made of **tissues**

All tissues are made of **organs**

All organs are made of **organ systems**

### DEFENITIONS

**Life processes** A process that something does to stay alive. The life process that happens in all living things are (movement, reproduction, sensitivity, growth, respiration, excretion, and nutrition)

**Movement** Going from one place to another, all organisms move or part of the

**Respiration** A process in which substances release energy for an organism to use. All organisms respire. There are, however, different forms of respiration

**Sensitivity** the ability to detect things in the surrounding. All organisms can sense certain changes in their surroundings

**Growth** Increases in size. All organisms grow

**Reproduction** A process in which organisms make more organisms like them. All organisms reproduce

**Excretion** Getting rid of waste. All organisms excrete

**Nutrition** is the substances that help organisms respire and grow. All organisms need nutrition

### FUNCTIONS OF CELLS

**Animal cells** It has a nucleus, cytoplasm, cell membrane, mitochondria, and ribosomes

**plant cell** contains a cell wall, chloroplast, and large vacuole + cell membrane, nucleus, cytoplasm

**Nucleus** Control the cell and gens

**Cytoplasm** Where the chemical reactions happen

**cell membrane** controls what goes in and out of the cell and gives the cell its shape

**Mitochondria** Helps in respiration

**Ribosomes** Makes energy

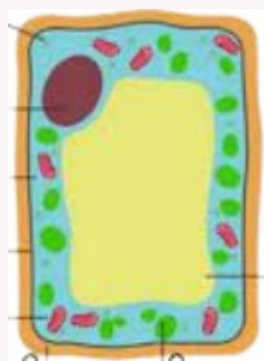
**Vacuole** Contains cell sap

**cell wall** made of cellulose that supports the cell

**Chloroplast** Absorbs sunlight for the photosynthesis process

### DIFFUSION

### PLANT CELLS



It consists of **nucleus, cell membrane, cytoplasm, cell wall, vacuole, chloroplasts**

Gas exchange at the alveoli — oxygen from the air to the blood, carbon dioxide from the blood to the air.

Gas exchange for photosynthesis — carbon dioxide from the air to leaf, oxygen from leaf to air.

Gas exchange for respiration — oxygen from the blood to tissue cells, carbon dioxide in the opposite direction.

**A high Diffusion Rate** leads to a short distance, large surface area, and big concentration difference.

High temperatures **increase** diffusion; large molecules **slow** diffusion.

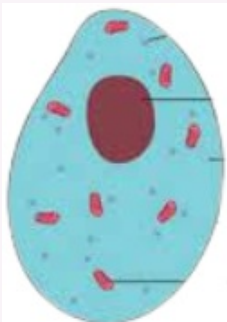
#### SURFACE AREA: VOLUME RATIO (SA: V)

**Surface area of a cuboid**= length x height / length x width / height x width

**Volume of a cuboid** = length x width x height

**SA : V RATIO** = surface area / volume

#### ANIMAL CELLS



It consists of a **nucleus, cell membrane, cytoplasm, mitochondria, ribosomes**



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