

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

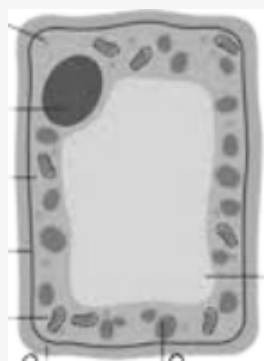
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|----------------|--|
| Life processes | A process that something does to stay alive. The life process that happens in all living things are (movement, reproduction, sensitivity, growth, respiration, excretion, and nutrition) |
| Movement | Going from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

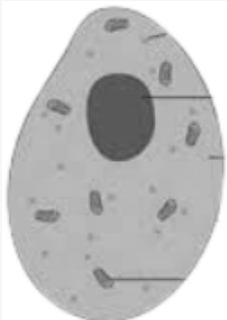
SURFACE AREA: VOLUME RATIO (SA: V)

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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