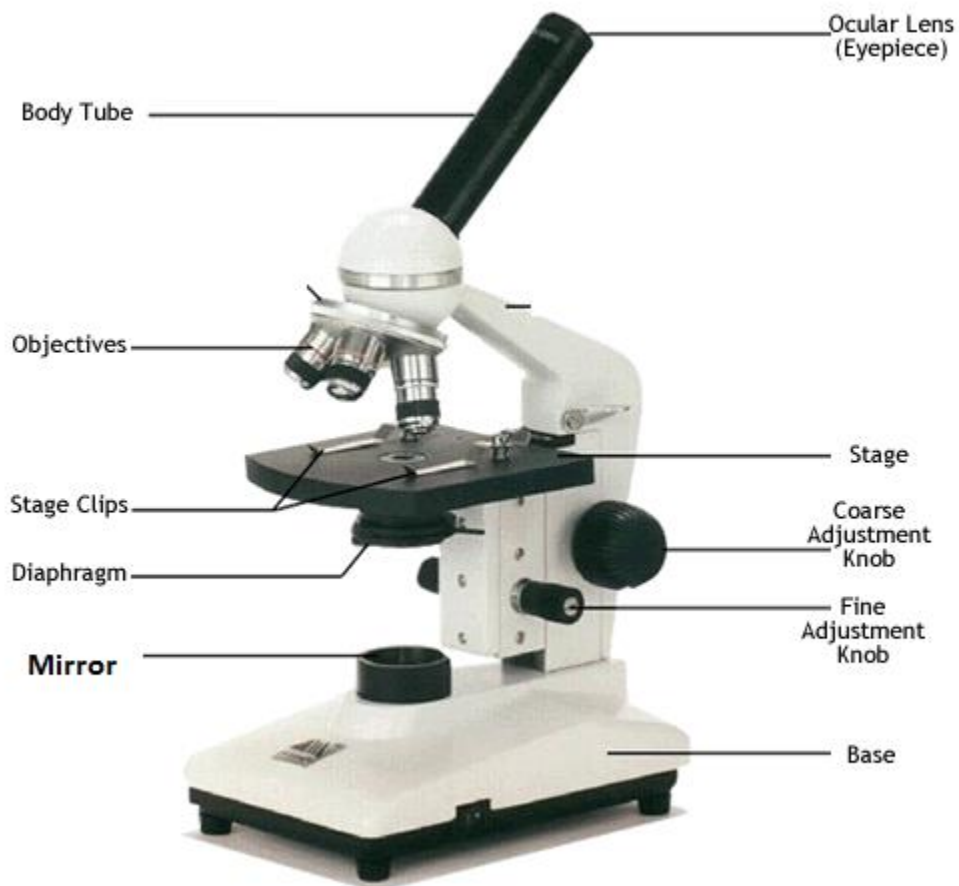


Cell as a Unit of Life

At the end of this chapter, you will be able to understand the details of

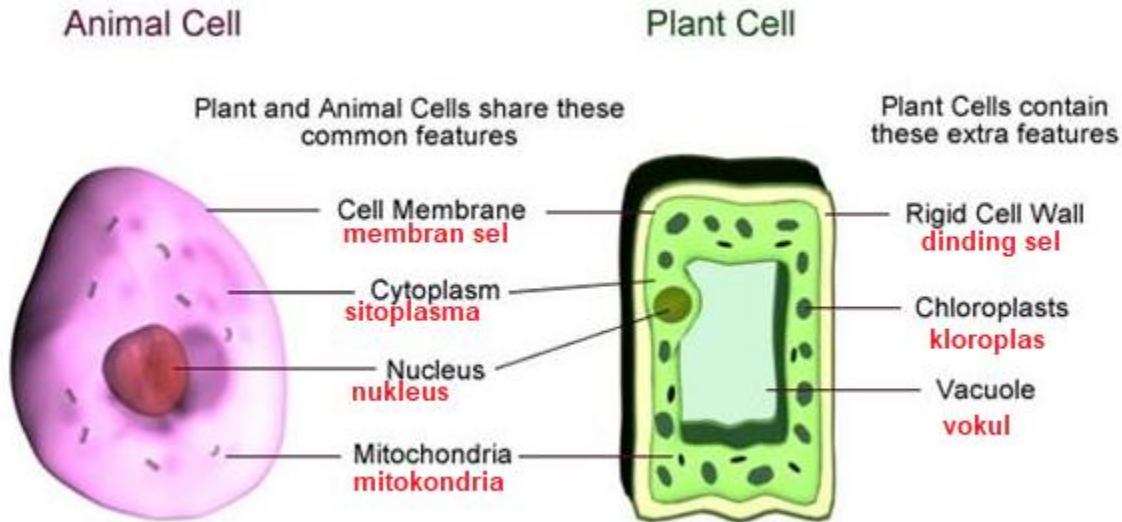
- a) Function of microscope
- b) Animal Cell
- c) Plant Cell



How to use the Microscope

1. Place the slide on the stage
2. Adjust the objective lens so that it is above the hole on the stage
3. Turn the coarse focus clockwise knob until it nearly touches the slide
4. Change low objective lens to high power objective lens
5. Turn the coarse focus anticlockwise until clear images are seen
6. Turn the fine focus knob clockwise to get clearer images

Animal Cell and Plant Cell



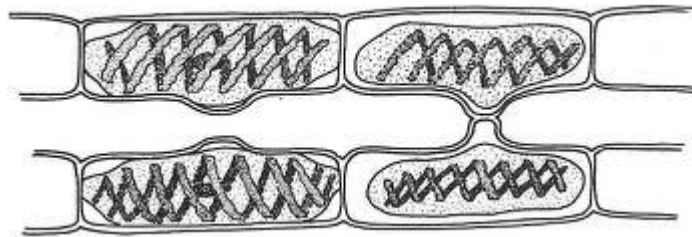
| Animal Cell | Plant Cell |
|---|--|
| <p>Cell Membrane: Control the movement of material in and out of cell membran sel: mengawal pergerakan bahan keluar dan masuk sel</p> <p>Cytoplasm sitoplasma: All chemical reactions take place. Tempat dimana proses kimia berlaku</p> <p>Nucleus Nukleus: Controls all cellular activities Mengawal semua aktiviti sel</p> <p>The main job of mitochondria is to perform cellular respiration. This means it takes in nutrients from the cell, breaks it down, and turns it into energy. This energy is then in turn used by the cell to carry out various functions. Mitokondria berperanan melakukan aktiviti respirasi. Nutrient sel digunakan untuk menghasilkan tenaga untuk menjalankan aktiviti activity sel</p> | <p>Cell Membrane: Control the movement of material in and out of cell</p> <p>Cytoplasm: All chemical reactions take place</p> <p>Nucleus: Controls all cellular activities</p> <p>Cell Wall/ dinding sel: Maintain the shape of the cell/ memberikan sokongan dan mengekalkan bentuk sel tumbuhan</p> <p>Chloroplast: Produce Chlorophyll (Photosynthesis)</p> <p>Vacuole Vokul: Contains cell sap to store sugar and salt/ Mengandungi air, bahan organik, dan bahan buangan</p> <p>The main job of mitochondria is to perform cellular respiration. This means it takes in nutrients from the cell, breaks it down, and turns it into energy. This energy is then in turn used by the cell to carry out various functions. Mitokondria berperanan melakukan aktiviti respirasi. Nutrient sel digunakan untuk menghasilkan tenaga untuk menjalankan aktiviti activity sel</p> |

Unicellular and Multicellular Organism

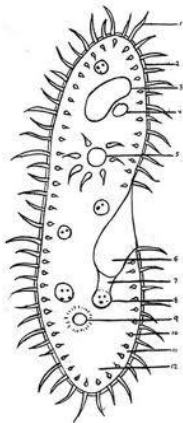
| Unicellular Microorganism. Unisel | Multicellular Microorganism multisel |
|--|---|
| <ul style="list-style-type: none">- Organism with one cell/ terdiri daripada satu sel- Amoeba, Euglena, paramecium, Chlamydomonas, Yeast Paramesium, Ameba, Pleurokokus, Eulena, Klamidomonas | <ul style="list-style-type: none">- Organism with more than one cell/ terdiri lebih daripada satu sel- Example: Human, Butterfly, Hydra and spirogyra |



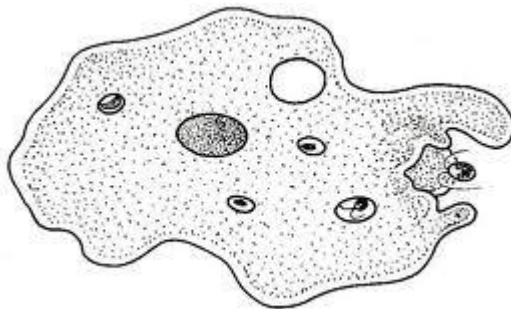
Hydra/ **Hidra**



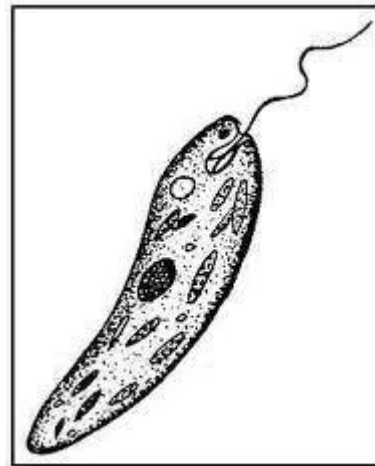
Spirogyra/ **Spirogira**



Paramecium / **Paramesium**



Amoeba / **Ameba**



Euglena/ **Euglena**

Human

Human is multicellular organism.

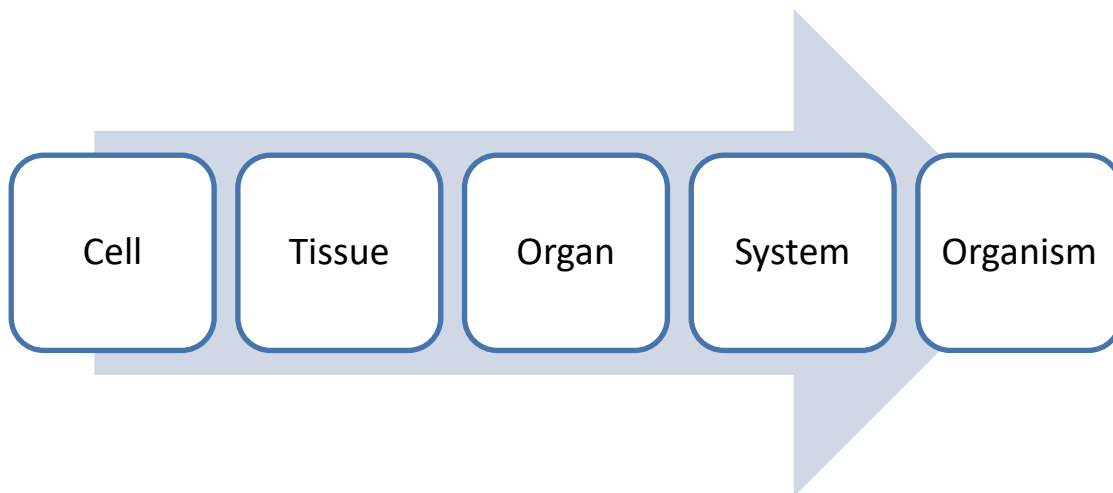
There are many types of cell in our body

- a) Epithelial Cell
- b) Reproduction cell
- c) Muscle Cell
- d) Nerve Cell
- e) Red blood Cell
- f) White Blood cell
- g) Bone Cell

Determine the function of the cells

| Types of Cell | Functions |
|---|-----------|
| a) Epithelial Cell b) Reproduction cell c) Muscle Cell d) Nerve Cell e) Red blood Cell f) White Blood cell g) Bone Cell | |

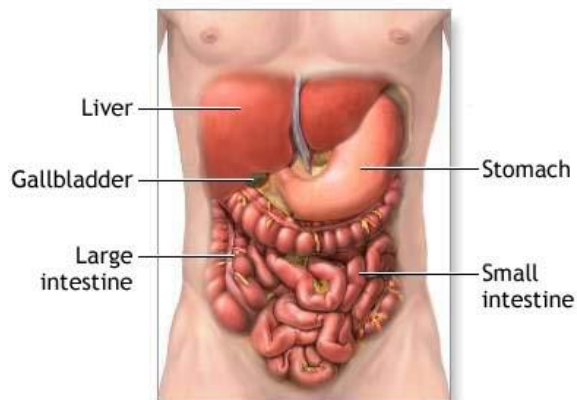
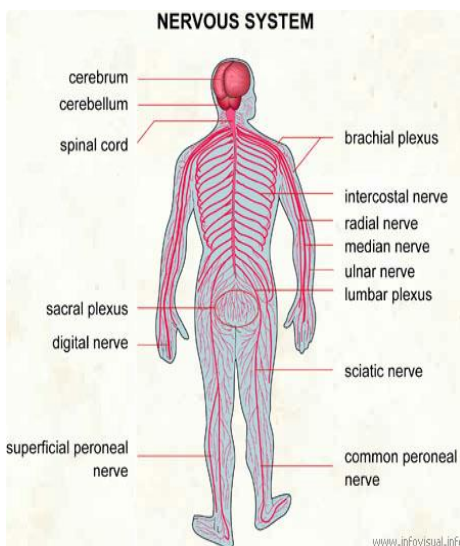
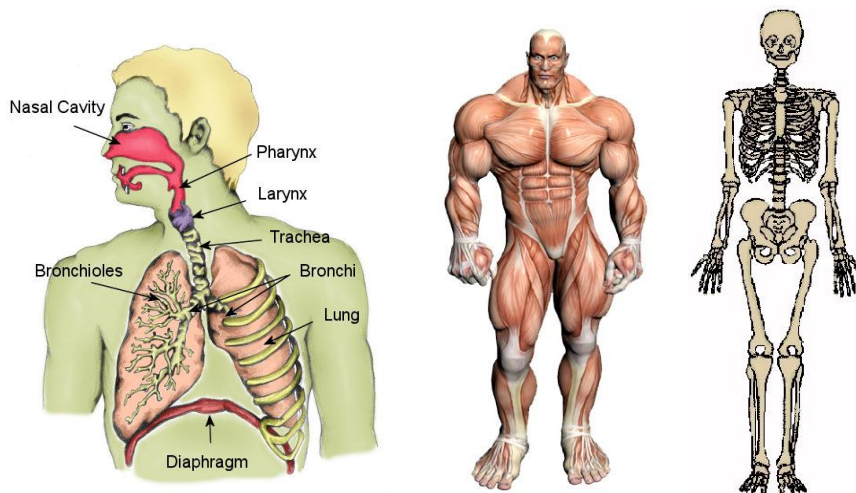
Level of Cell in Organism



What are the System in the Human Body

Systems in Human Body

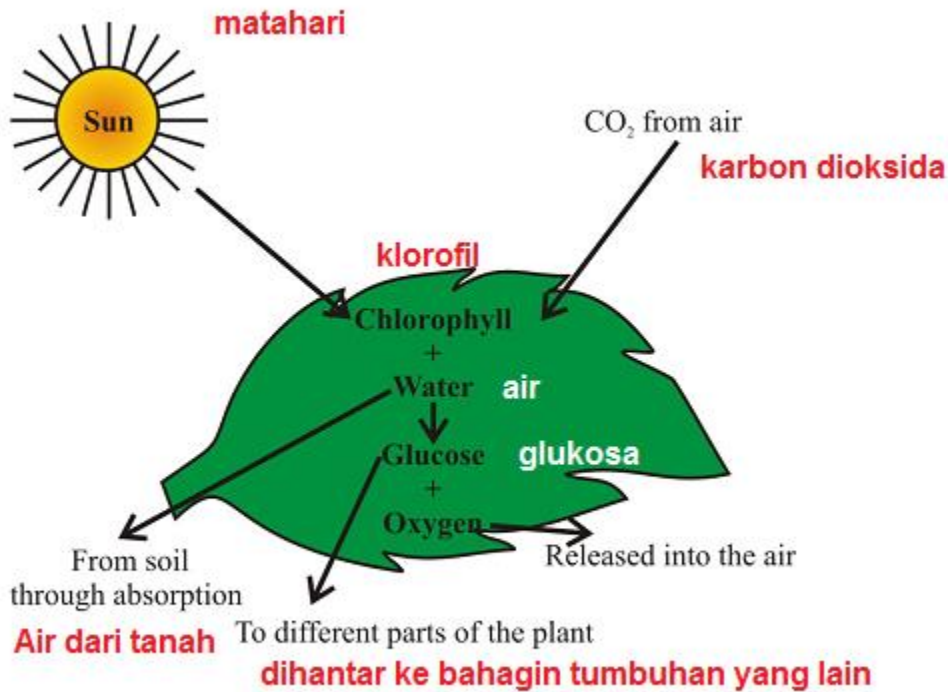
1. Respiratory System / **Sistem pernafasan**
2. Muscular System/ **Sistem otot**
3. Skeletal System/ **Sistem rangka**
4. Nervous System / **Sistem Saraf**
5. Blood Circulatory System / **Sistem peredaran darah**
6. Digestive System/ **Sistem pencernaan**
7. Excretory System / **Sistem pencernaan**
8. Reproduction System/ **Sistem reproduksi**



ADAM.

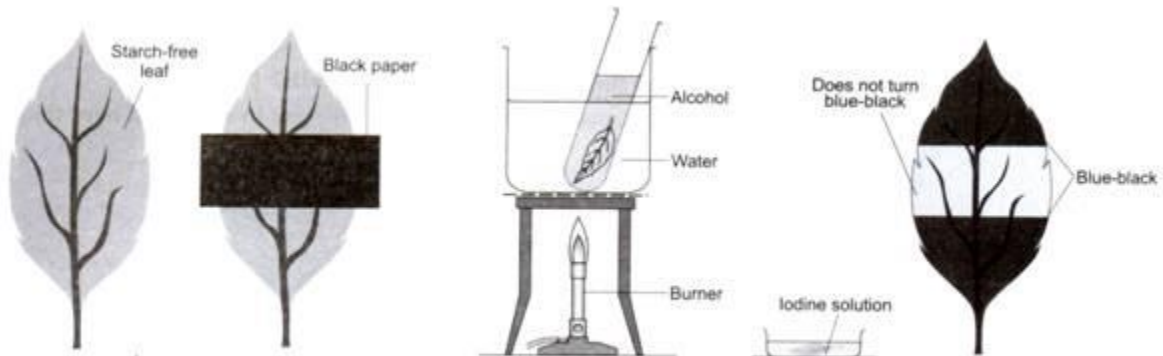
Photosynthesis **Fotosintesis**

Plants needs sunlight for photosynthesis / **Tumbuhan memerlukan cahaya matahari untuk melakukan proses fotosintesis**

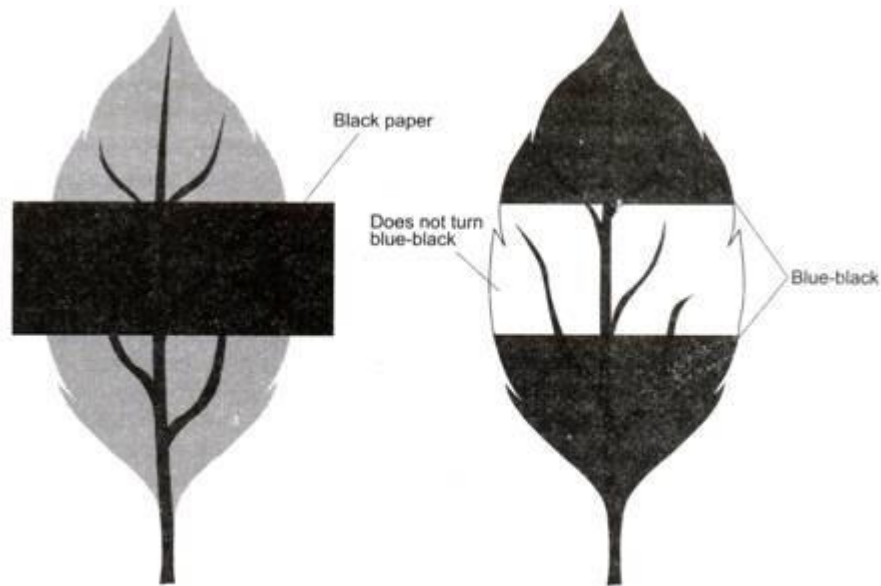


| Cellular Respiration / Respirasi Tumbuhan | Photosynthesis / fotosintesis tumbuhan |
|---|--|
| <ol style="list-style-type: none"> 1. Release Energy / Menghasilkan tenaga 2. Use glucose and oxygen / Menggunakan glukosa dan oksigen 3. Happens in mitochondria/ Berlaku di mitokondria 4. Happens to all living things / Berlaku di organisma yang hidup | <ol style="list-style-type: none"> 1. Absorbs energy / menyerap tenaga 2. Produce glucose and oxygen / menghasilkan glukosa dan oksigen 3. Occurs in Chloroplast/ Berlaku di kloroplas |

Experiment / Eksperimen



Experiment to show that light is essential for photosynthesis



Experiment to show that sunlight is essential for photosynthesis

Conclusion:

| Condition | Observation |
|---|--|
| Covered with black paper Dilitupi dengan kertas hitam | Does not turn blue black when drop with iodine Tidak bertukar menjadi warna biru gelap apabila iodin dititiskan |
| Does not cover with black paper Tidak dilitupi dengan kertas hitam | Turn blue black when iodine drop on the leaf Bertukar menjadi biru gelap apabila iodin dititiskan |