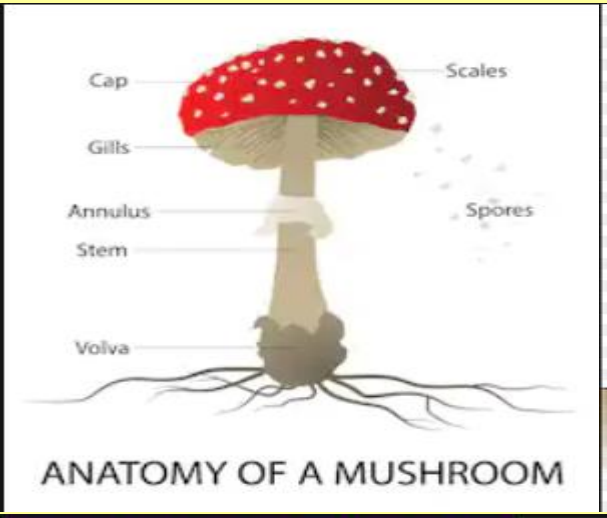
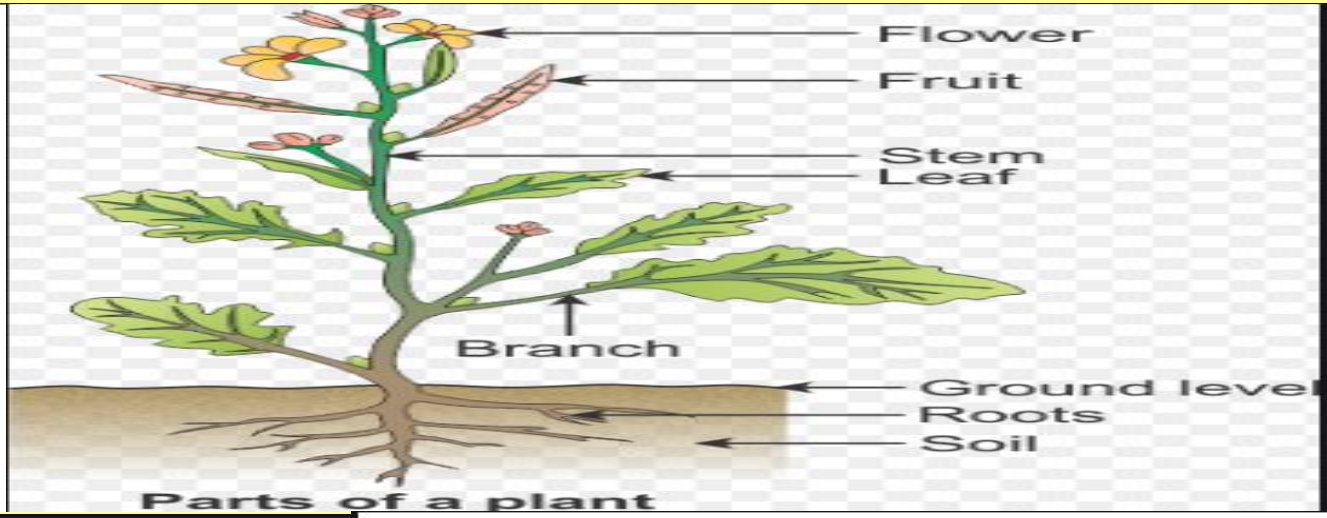
Kingdom of Bahrain
Ministry of Education

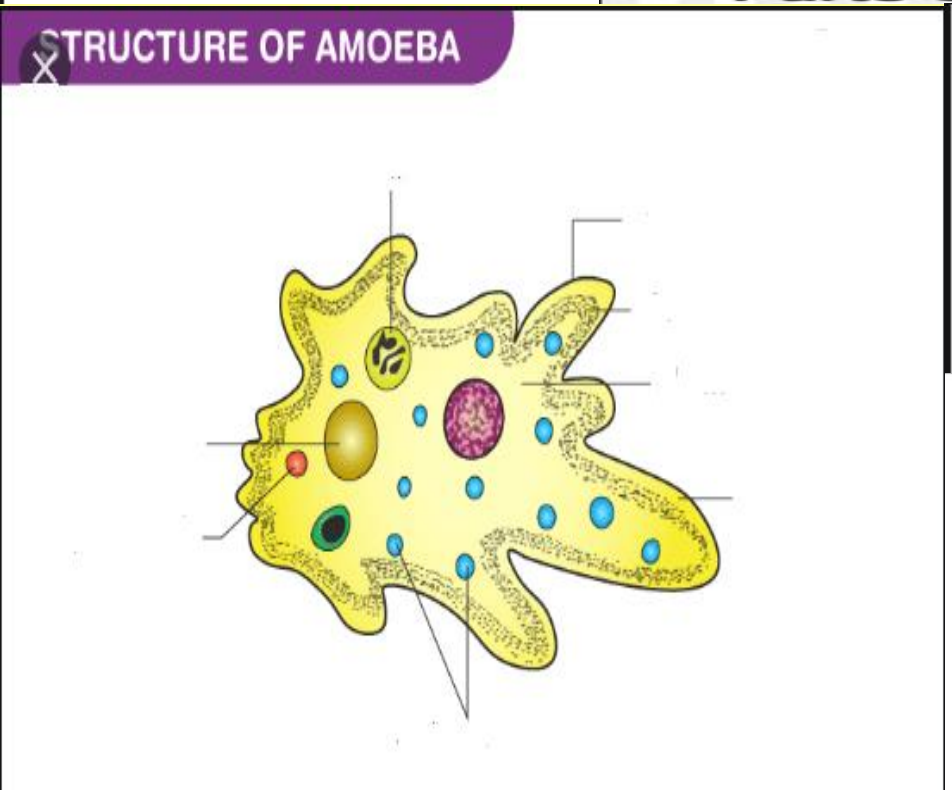
Pakistan School
Kingdom of Bahrain

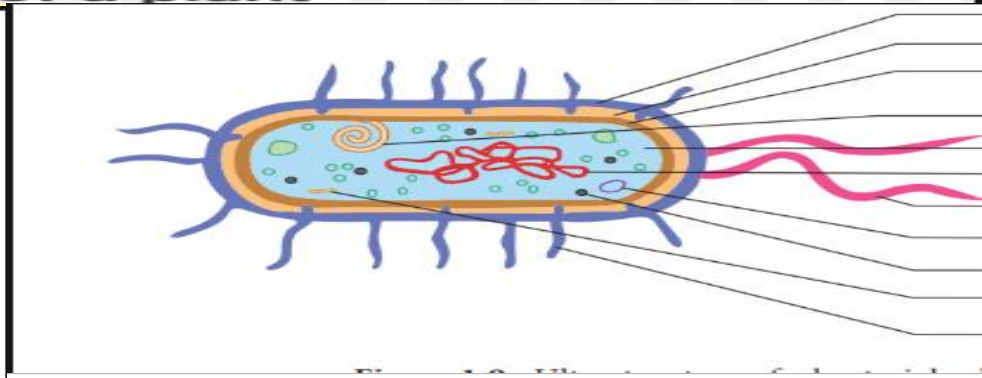

Welcome to Biology!
Biology

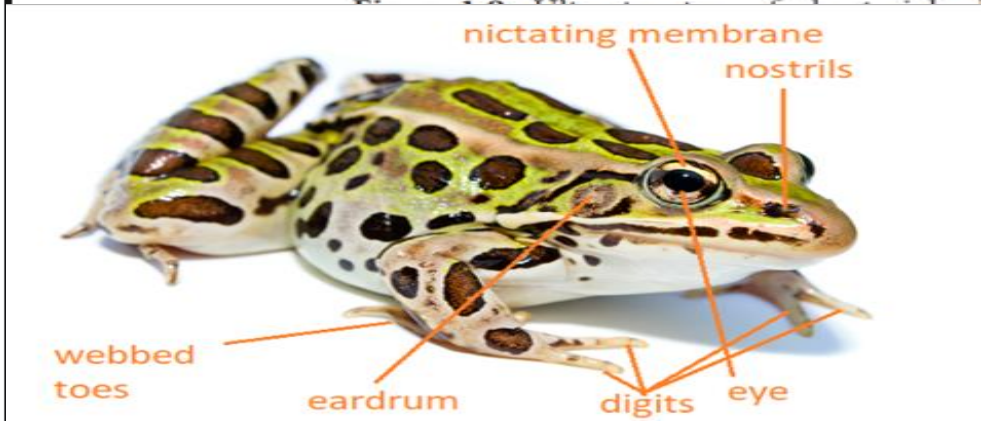
ENGAGING STARTER











LEARNING OBJECTIVES

1. At the end of lesson, students will be able to analyze the division of all organisms into five major groups due to their cellular characteristics.

2. Interpret the familiar examples of multicellular organizations i.e. Frog and Mustard Plant.

- Chapter #1 Page # 10

Topic: Cellular organizations

Cellular organization

- All the organisms have been divided into five major groups

1. Prokaryotes
2. Protists
3. Fungi
4. Plants
5. Animals

All organisms are made of cells.

PROKARYOTES

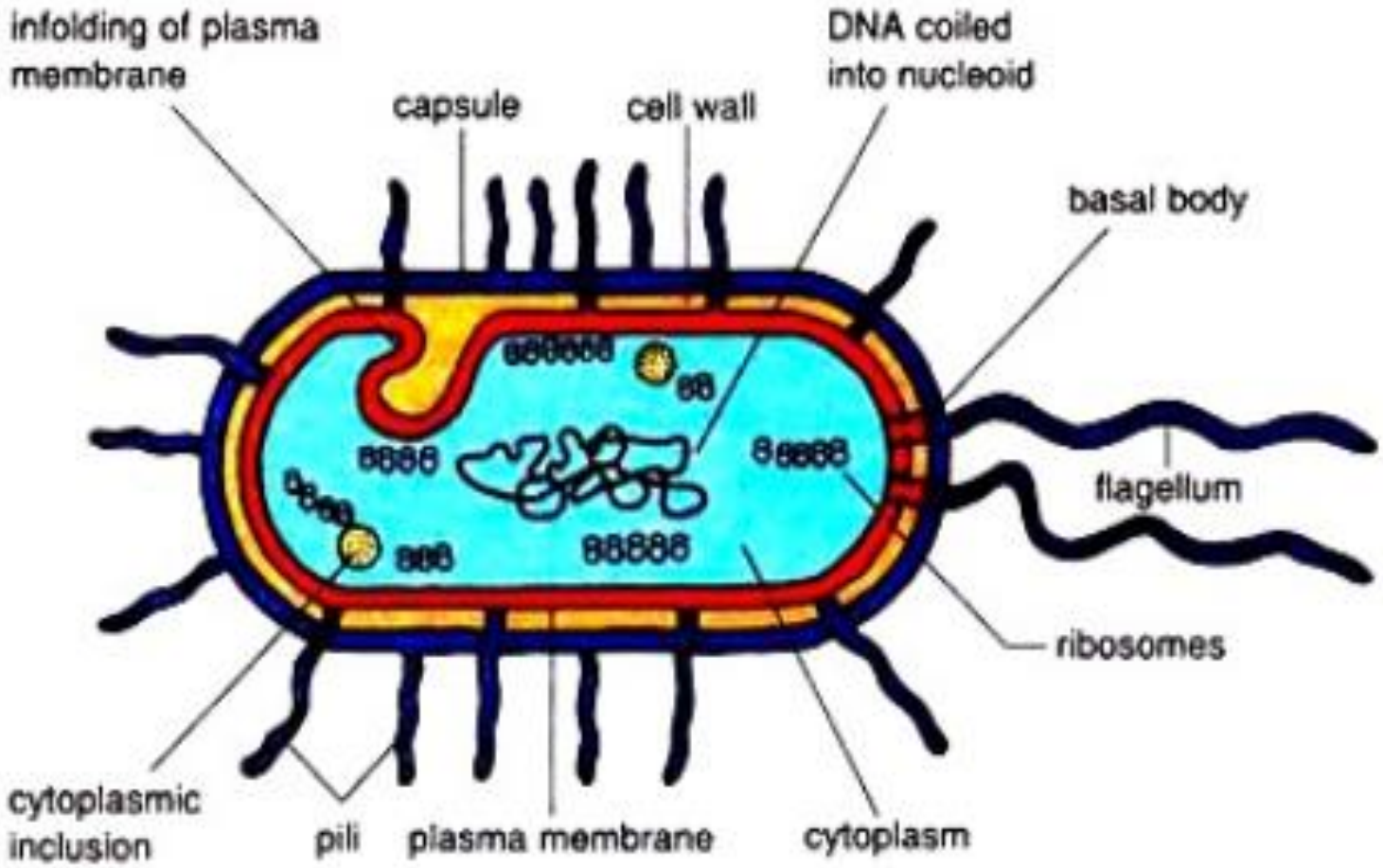
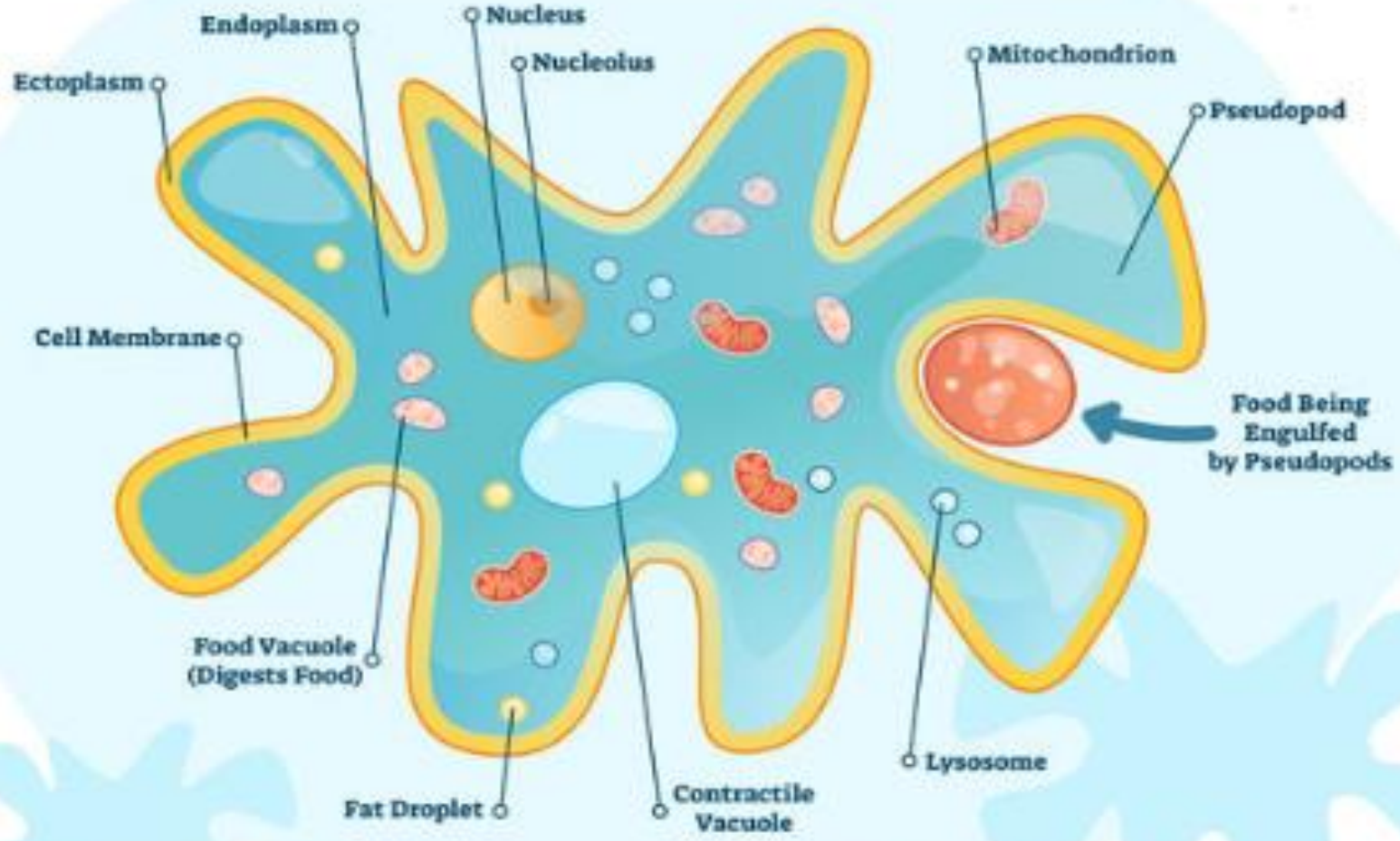
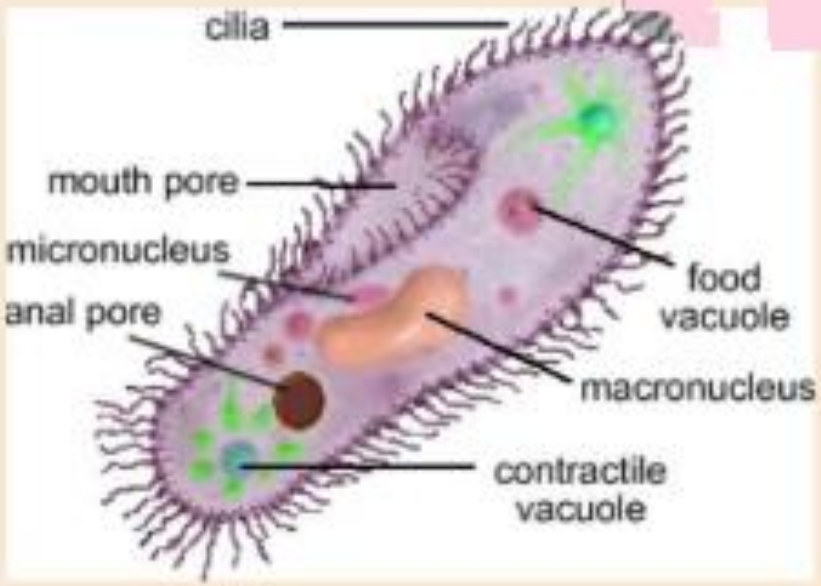


Fig. 1.1 : Section of a bacterial cell

Protists

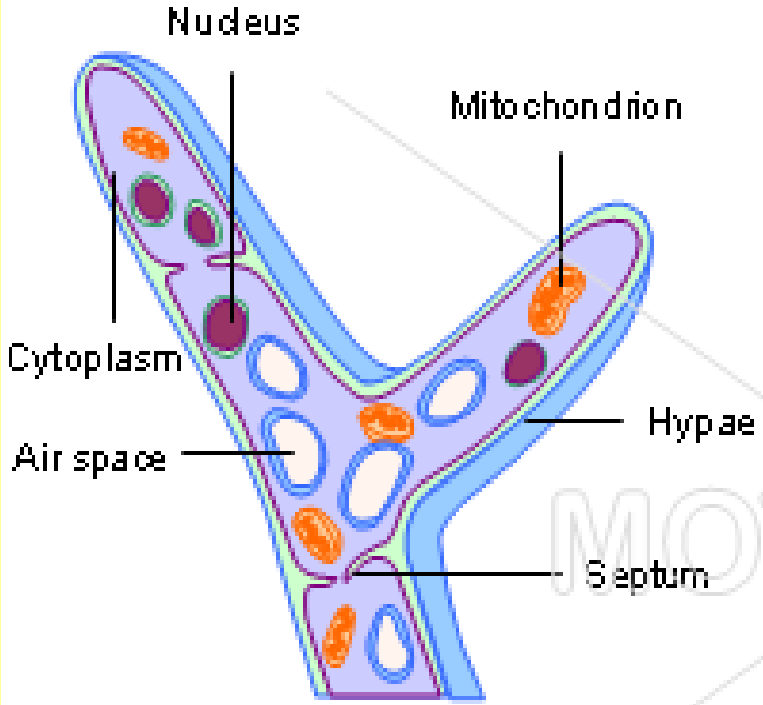

Endoplasm
Nucleus
Nucleolus
Mitochondrion
Ectoplasm
Pseudopod
Cell Membrane
Food Being Engulfed by Pseudopods
Food Vacuole (Digests Food)
Lysosome
Fat Droplet
Contractile Vacuole

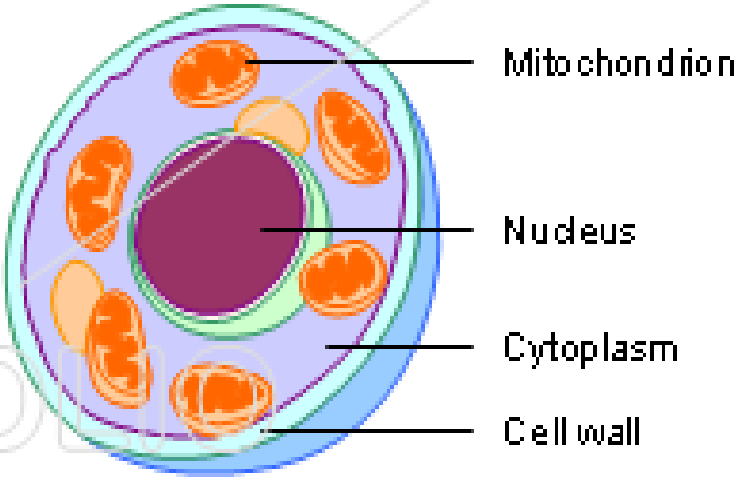
Paramecium



- Most complex and specialized of the protists
- Moves by cilia (hair-like projections)`

Fungi



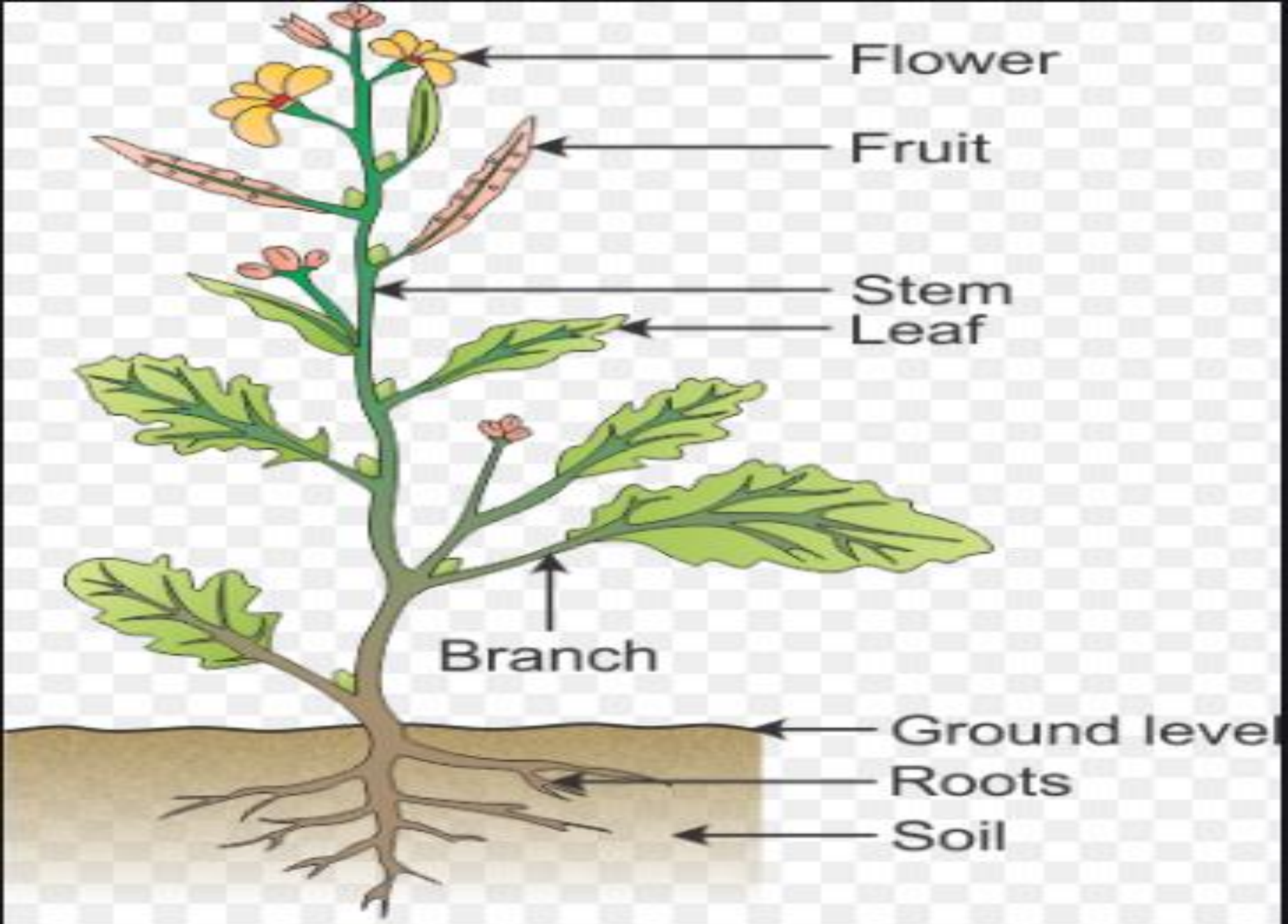


Filamentous fungi

These fungi form long tubular branches known as hyphae that may be divided into segments by cross walls called septa.

Yeast

These types of fungi live un colonies of spherical or ovoid single cells. They multiply by cell division and budding.



Parts of a plant

Animals

Types of Cells

All organisms are made of cell.

There are two basic types of cells.

Prokaryotic Cells:

Cells lacking membrane bounded nucleus and organelles are called prokaryotic cells e.g. bacteria & cyanobacteria.

Eukaryotic Cells:

Calls having membrane bounded nucleus and organelles are called eukaryotic cells e.g. animal cells, plant cells etc.

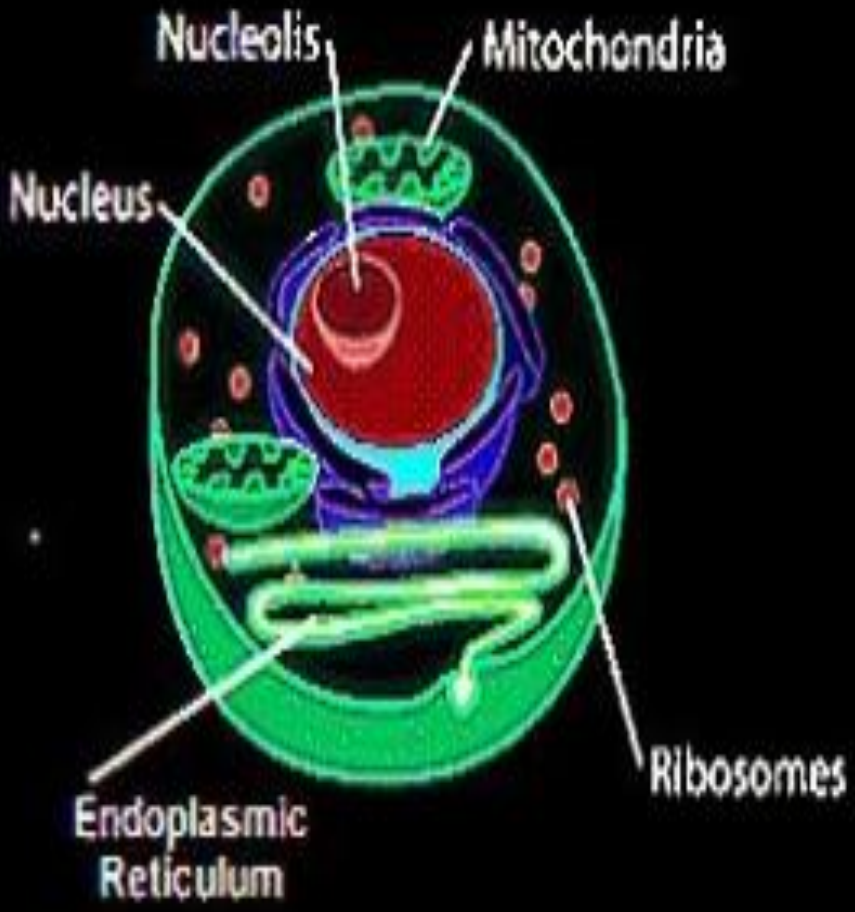
Cell Organization:

In the living organisms, the cells organize in three ways to make bodies of organisms. Cells make unicellular, colonial and multicellular organizations and the organisms formed through these organizations are unicellular organisms, colonial organisms and multicellular organisms respectively.

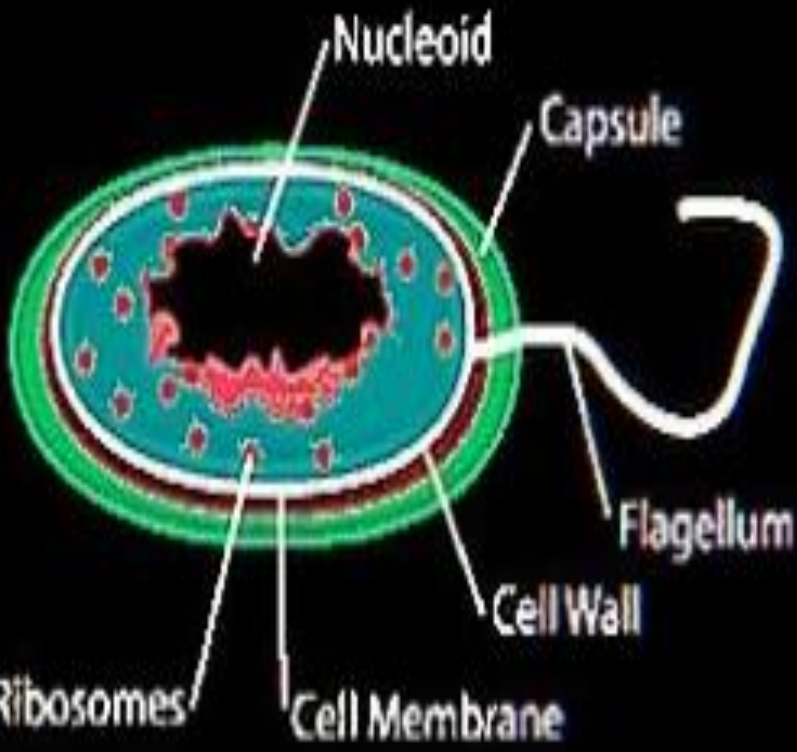
a) Unicellular organization:

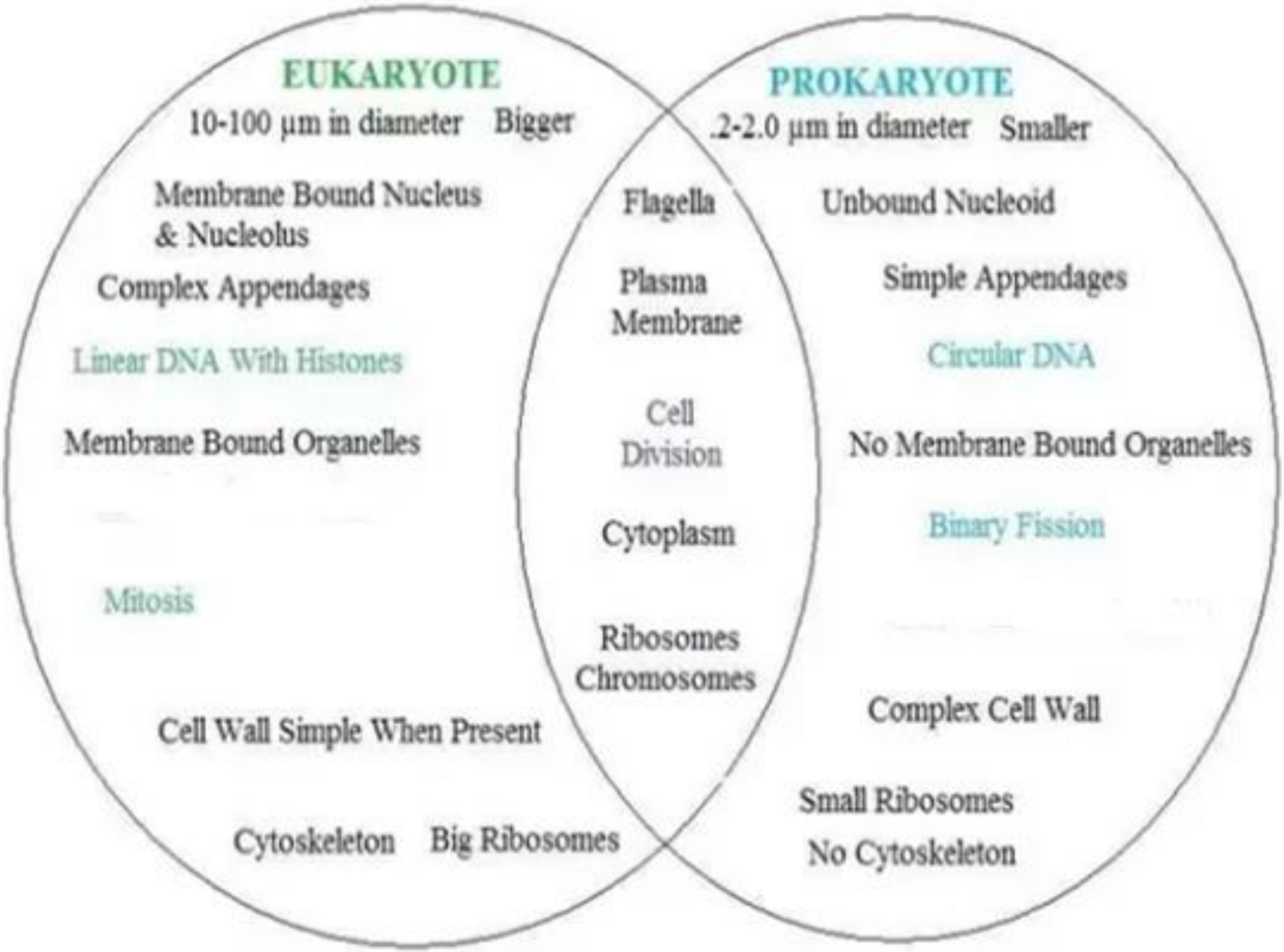
- In unicellular organisms, only one cell makes the life of an organism.
- All the life activities are carried out by the only cell.

EUKARYOTE



PROKARYOTE




EUKARYOTE
10-100 µm in diameter Bigger
Membrane Bound Nucleus & Nucleolus
Complex Appendages
Linear DNA With Histones
Membrane Bound Organelles
Mitosis
Cell Wall Simple When Present
Cytoskeleton Big Ribosomes
Flagella
Plasma Membrane
Cell Division
Cytoplasm
Ribosomes
Chromosomes
PROKARYOTE
.2-2.0 µm in diameter Smaller
Unbound Nucleoid
Simple Appendages
Circular DNA
No Membrane Bound Organelles
Binary Fission
Complex Cell Wall
Small Ribosomes
No Cytoskeleton

Unicellular Organisms

Definition:

Unicellular organism – an organism made of only one cell

Information:

These organism are very small and need to be seen with a microscope.

Colonies of Unicellular Organisms

A **colonial organism** is a collection of unicellular organisms living together. The difference between a multicellular organism and a colonial organism is that individual one-celled organisms from a colony can, if separated, survive on their own, while cells from a multicellular life-form (e.g., cells from a brain) cannot.

Volvox

Algae

Multicellular Organisms

Multicellular organisms are organisms made up of MANY EUKARYOTIC cells.

There are different types of multicellular organisms. Two types of multicellular organisms are plants and animals.

ALL plant and animals are multicellular organisms.

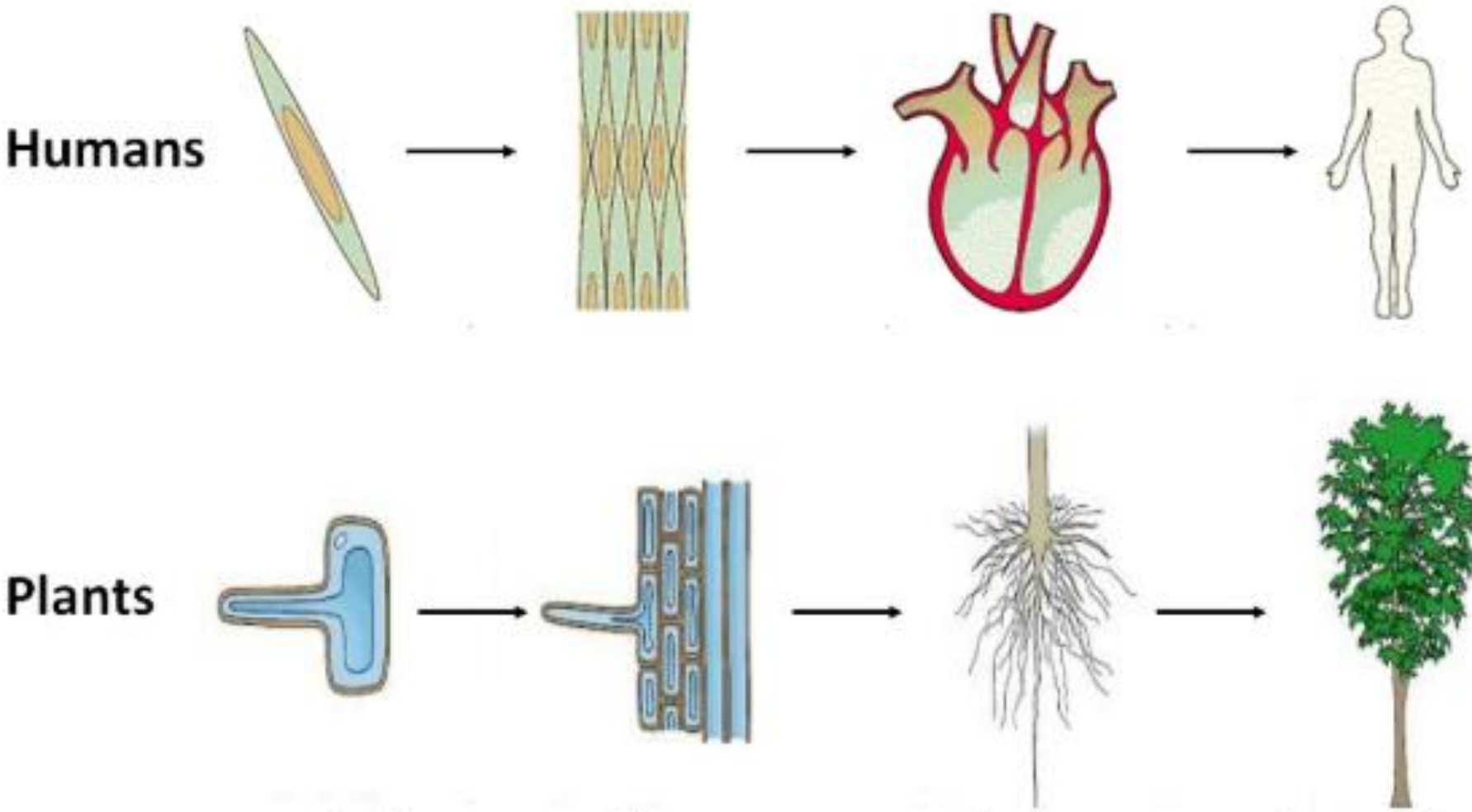
Plants

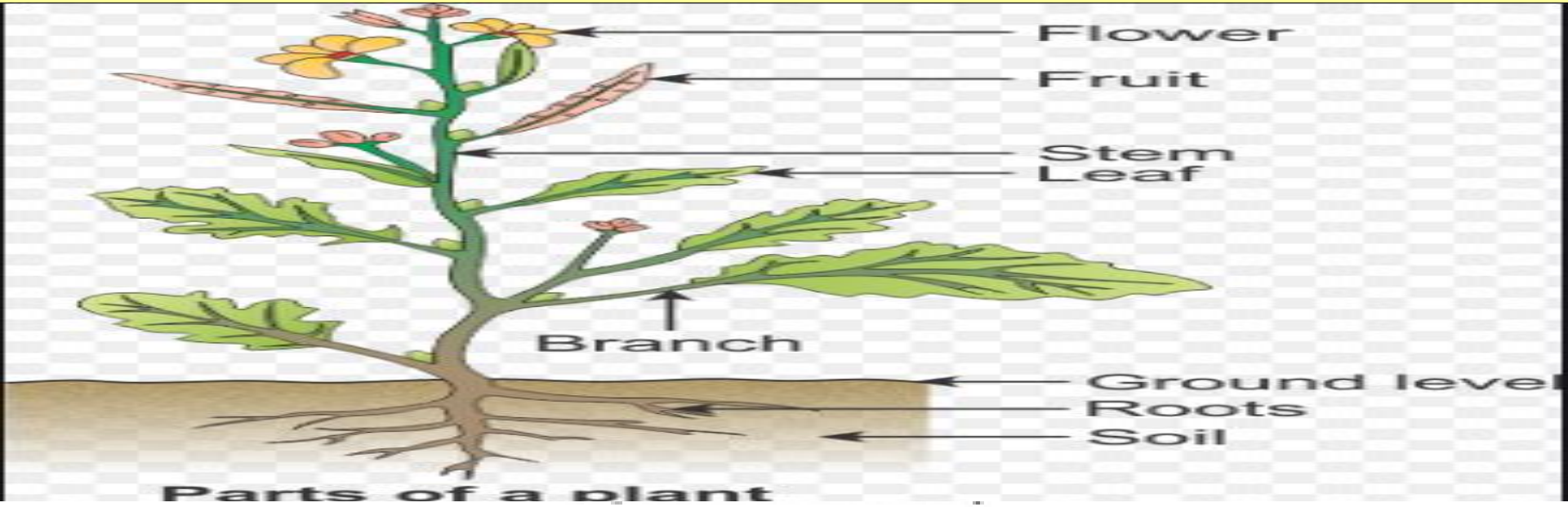



Animals




Multicellular Organisms





Parts of a plant

c) Multicellular Organization:

In multicellular organization, cells are organized in tissues, organs and organ systems.

Examples

Mustard Plant: Brassica Campestris:

(a) Sowing

- It is sown in winter and produces seed at the end of winter.

(b) Importance

- Its plant body is used as vegetable & its seeds are used for extracting oil.

(c) Body Parts

- Plant body consists of two parts:-

a) Vegetative Parts:

- It includes roots, stems, branches and leaves.
- These do not take part in sexual reproduction.

b) Reproductive Parts:

- Flowers are reproductive parts of plant because they take part in sexual reproduction and produce fruits and seeds.

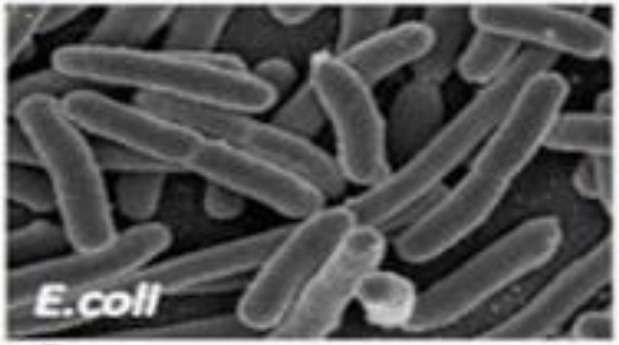
Frog: Rana tigrina:

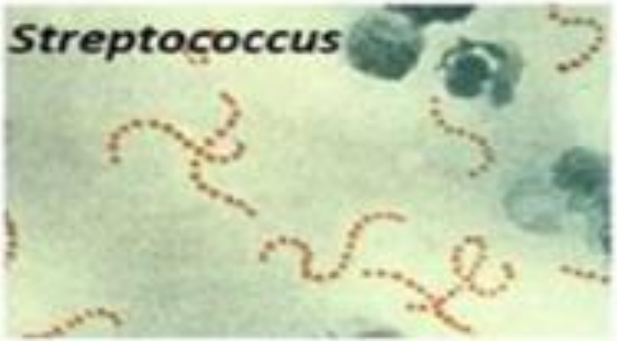
(a) Body

- The body of frog also shows multicellular organization.
- The body is made up of organ systems.
- Each organ system consists of related organs
- All the organs are made of specific tissues (epithelial, glandular, muscular, nervous etc.)

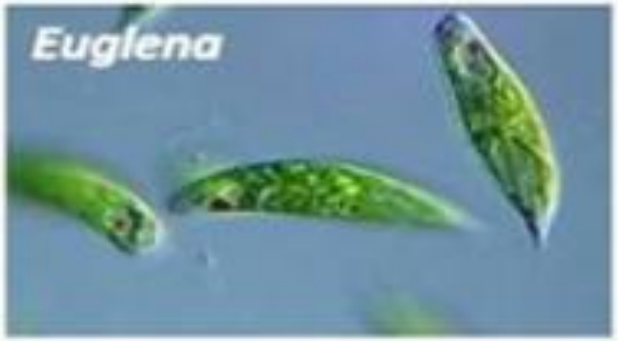
Examples of Unicellular Organisms

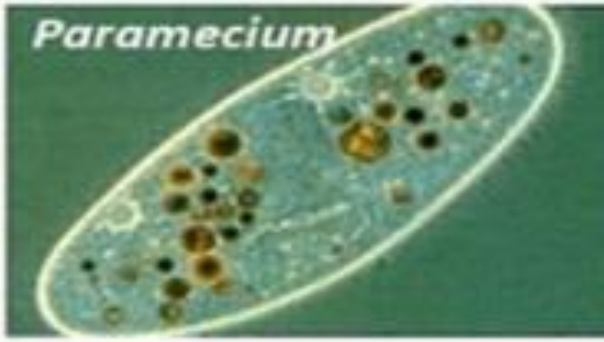
1. All Bacteria





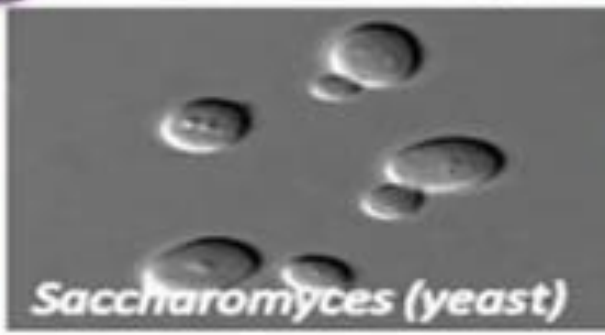
2. All Protists





3. Some Algae

4. Unicellular Fungus



Worksheet:01

1. **What is cellular organization?**
2. **How many groups of organisms are there based on cellular organization ?**
3. **Give examples of unicellular organisms.**
4. **Is there any division of labour among colonial type of organisms?**

ACTIVITY : 02

1. List the organs of human body that are damaged by the notorious Corona virus.
2. What is the scientific name of Frog?
3. State the names of specific tissues of all organs of Frog.

ACTIVITY:

MCQS:

1. Mustard plant is sown in
   a. Summer b. Winter c. Spring d. Autumn.
2. The organ of the body of mustard plant can be divided in to
   a. single group b. two groups.
3. ---------- is a green algae found in water
   a. Mushroom b. Paramecium
   c, Amoeba d. Volvox

ACTIVITY:

Fill in the blanks.

1. **In a unicellular organism _____ makes the life of an organism.**
2. **The mustard plant body is used as _____**
3. **There are two basic types of the cells, _____ and _____ .**

PLENARY ACTIVITY

1. Protista includes _____
2. All organisms are divided in to _____
3. _____ and _____ are examples of multicellular organisms.
4. _____ are the reproductive part of flower.
5. What is cellular organization in multicellular organisms?
6. There are _____ basic types of the cells


Any
Questions?

HOME WORK

1. Study the chapter from text book and do all questions in the exercise, ask any queries in next class.


Thank You!
Prepared By
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