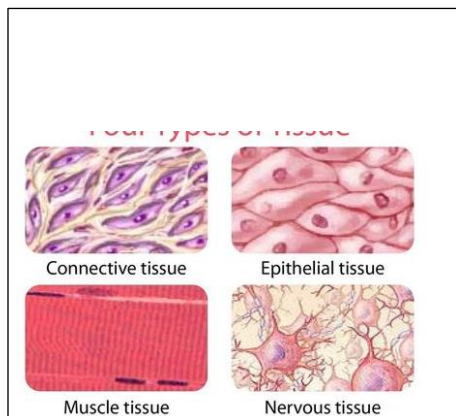


Self – Study Pack

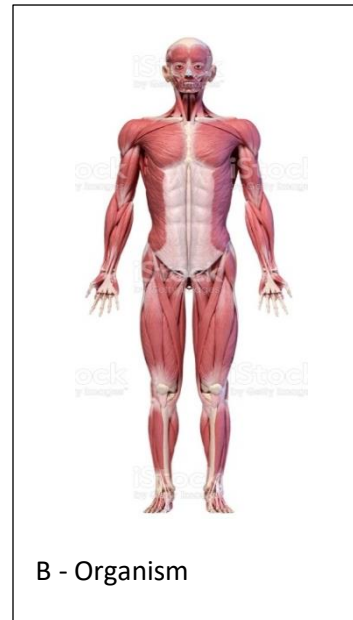
- Subject – Science
- Grade – Grade7
- Term – 2nd Term
- Unit – Biological Processes – Unit 12
- Learning outcomes –
 - State that there is a hierarchy in the organization up to the organism level.
 - Observe organisms/ specimens to identify different levels of organization.
 - Explain the structure of the human digestive system using diagrams.
 - Explain the structure of the human respiratory system using diagrams.

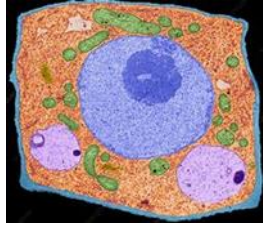
Activity 1 – Let us find out the organization levels of life.

- Study the diagrams given below well. Write the letters relevant to the diagrams in the boxes provided in the order of organization of the human body from the simplest to complex.

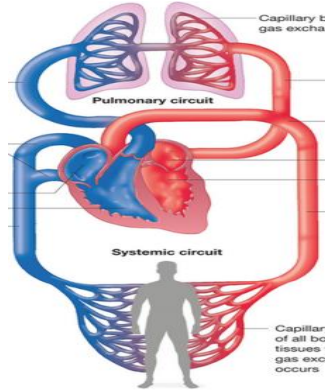


A – Tissues

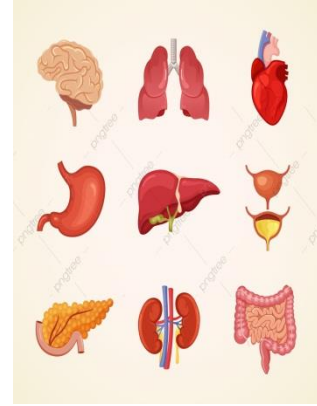




C – Cell



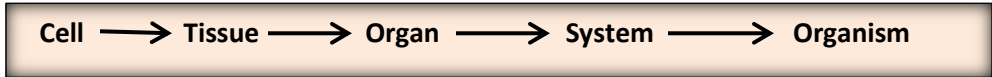
D- System



E- Organ

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- When the organization levels are arranged in order,



You get the above order.

Activity 2 – Let us find out the details of the cell.

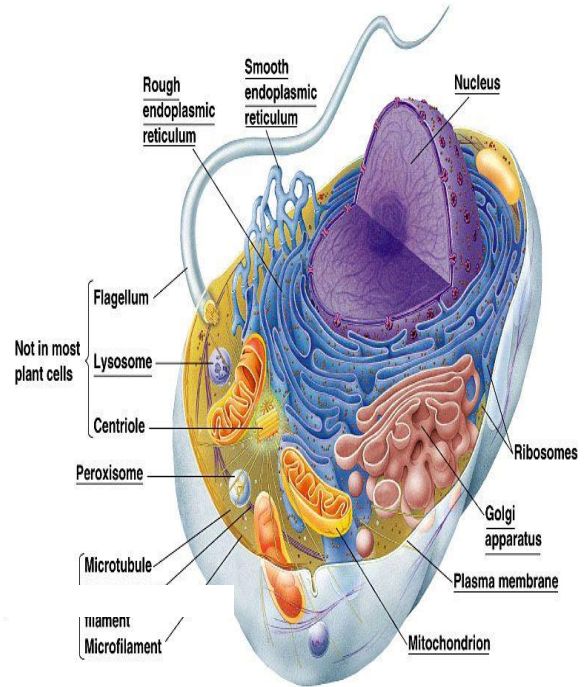
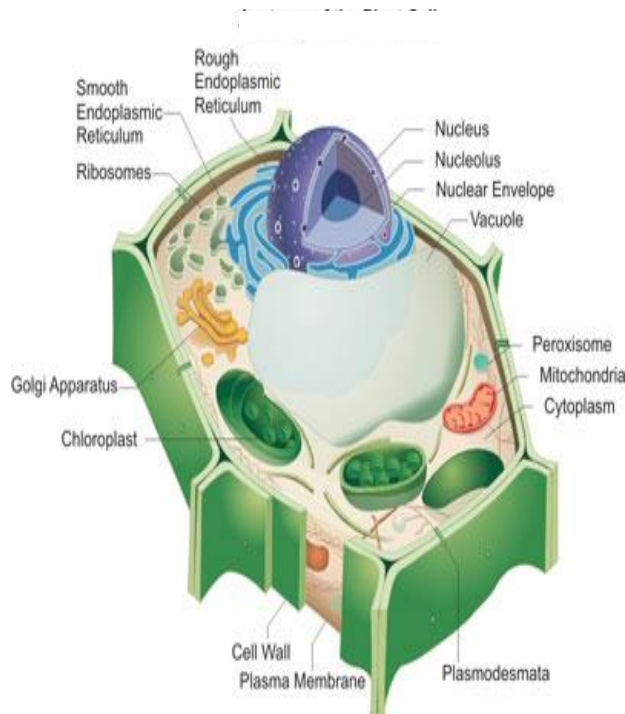
The Structural and functional unit of life is the cell.

Cell → Unit - smallest building unit of life.

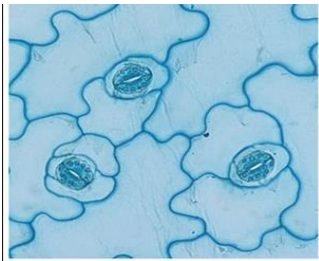
Cell → Unit – smallest unit that performs life functions.

Fill in the blanks with correct words. (Structural/Functional)

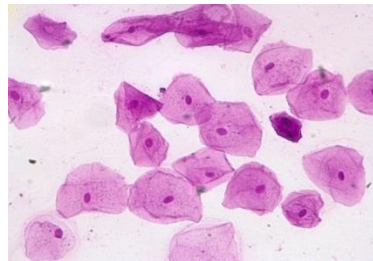
- ❖ The structural unit of both plant and animal bodies is the cell.
- Both plant and animal cells are similar in many aspects. But plant cells contain cell wall, central vacuoles and chloroplasts. Those organelles are not in animal cells.
- Identify the cells in the figures and name them correctly.



- Two specimens commonly used for studying plant and animal cells are given below.

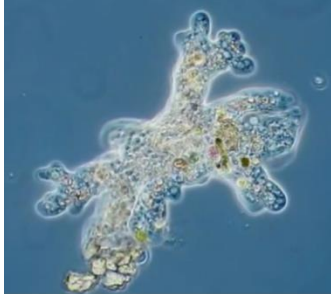


Lower Epidermal cells of a betel leaf



Human cheek cells

- ❖ Some organisms' body consists of only one cell. They are known as unicellular organisms. All the biological processes of those organisms are carried out by this single cell.
- ❖ Therefore, a cell is the smallest unit of life that can perform life functions.



Amoeba



Euglena



Paramecium

Activity 3 – Let us find out details of Tissues.

Features –

- Perform a common function.
- Consist of a group of cells.
- Cells can be similar or different in shape.

Build up a definition for a tissue with the help of above features.

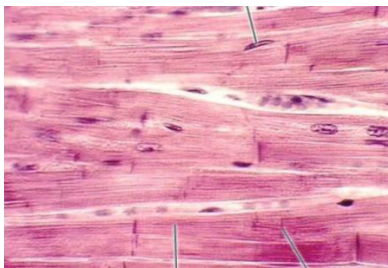
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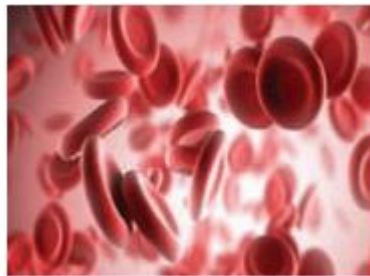
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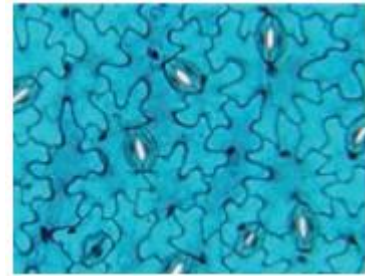
- Mention the type of tissue present in following figures with the help of the figures given in page number 15 of Part ii of your Science textbook.



.....



.....



.....

Activity 4 - Let us observe the function of the xylem tissue.

Things needed: A small plant with a transparent stem (ex: - balsam), a water basin, a red water soluble dye (ex: - food colouring)

Method –

- Dissolve the red dye in water.
- Keep the plant in water in the way that the root system is immersed water.



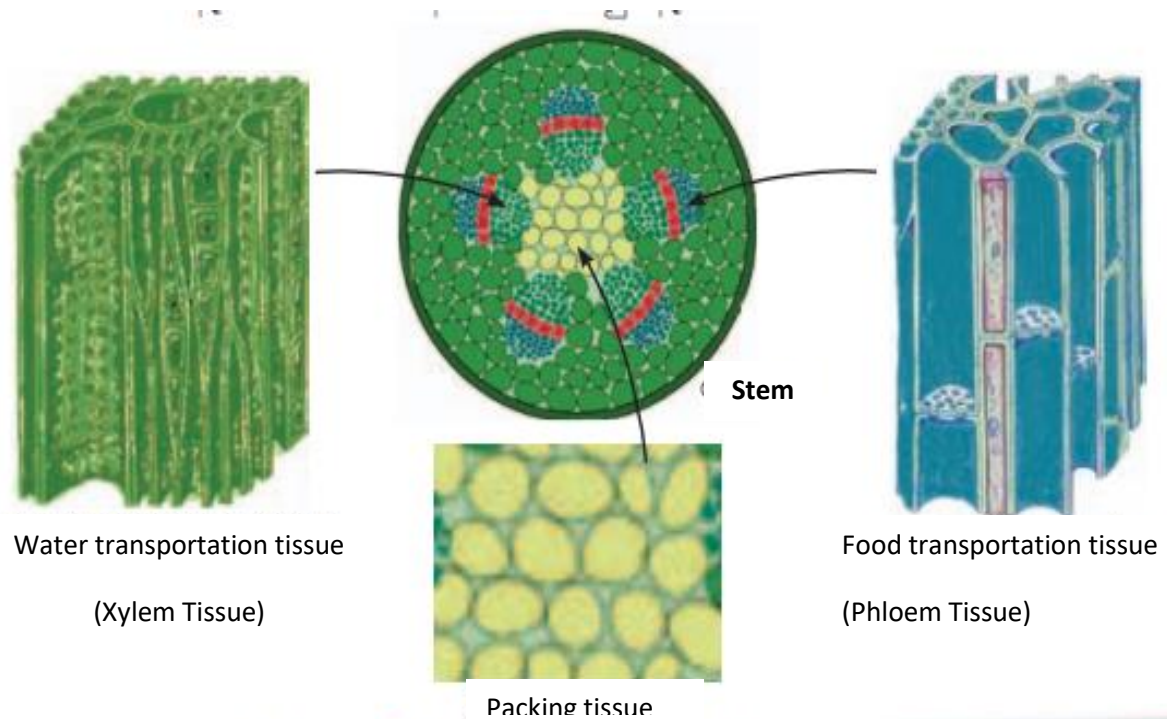
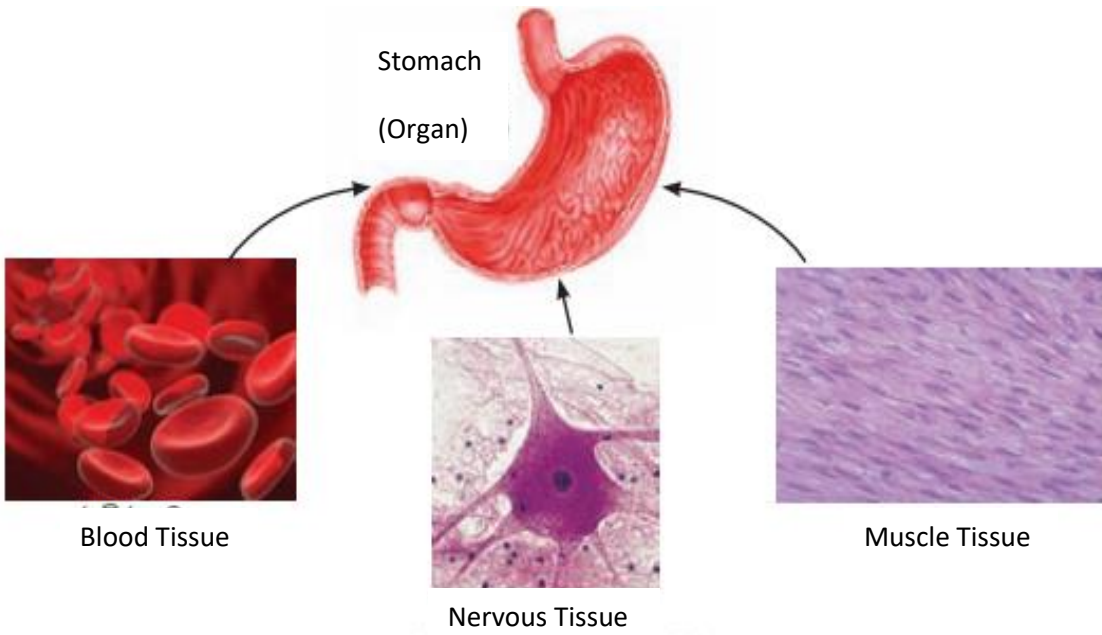
- Observation - Observe the stem of the plant. What can you see?

.....

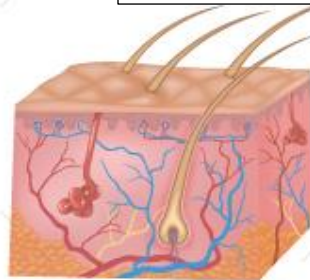
Water is transported in a plant through the xylem tissue. It can be observed that red colour water is transported up through the xylem.

Activity 5 – Let us find details of organs.

- ✓ A group of tissues get together to perform a function is known as an organ.
- ✓ There are several types of tissues in one organ.

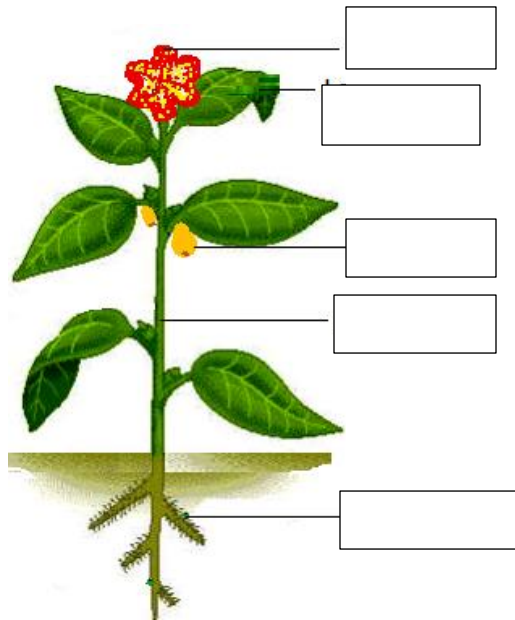


- Name the following organs in the human body.



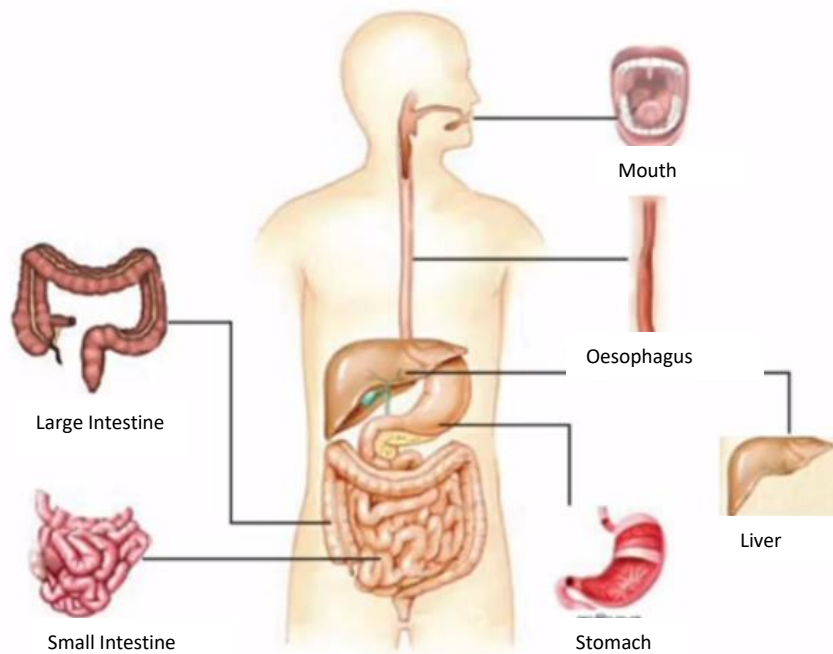
(Kidney/ Eye/ Heart/Large Intestine/Skin/Lungs/Stomach/Liver/Brain)

- Label the organs of a plant in the following diagram.



Activity 6 – What are the systems found in organisms?

✓ A group of organs get together to perform a particular function is known as a system.

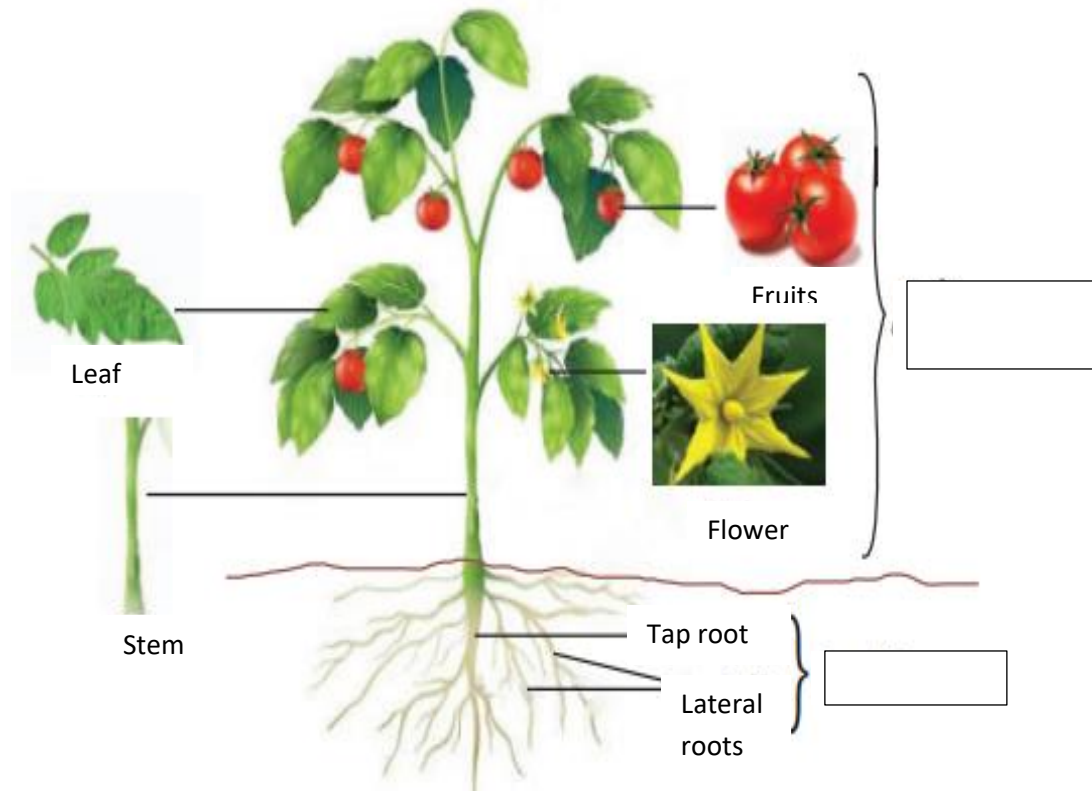


Organs that form the human digestive System

Mention the systems in your body.

-
-
-
-
-
-

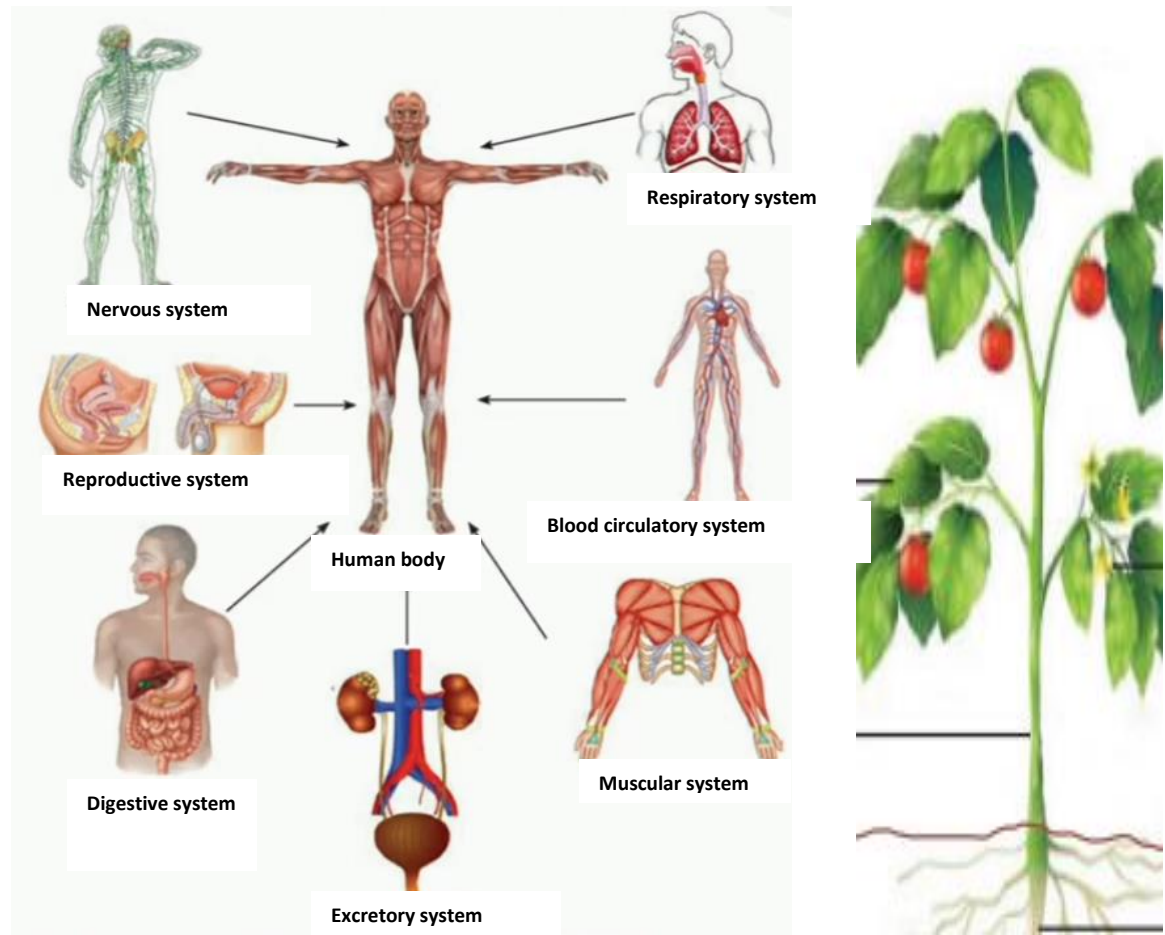
- Label the systems of the plant body in the boxes provided.



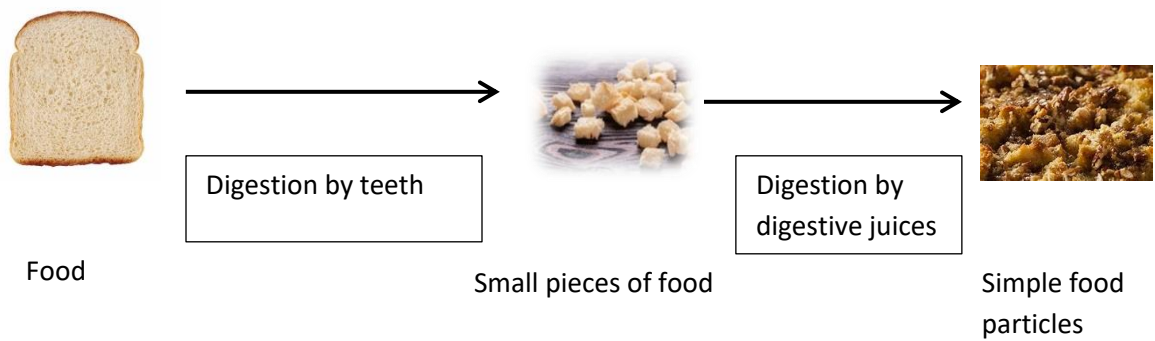
When the cells, tissues, organs, and systems are organized in the above way, they create the organism.

Human

Plant



Activity 7 – Structure and function of the human digestive system

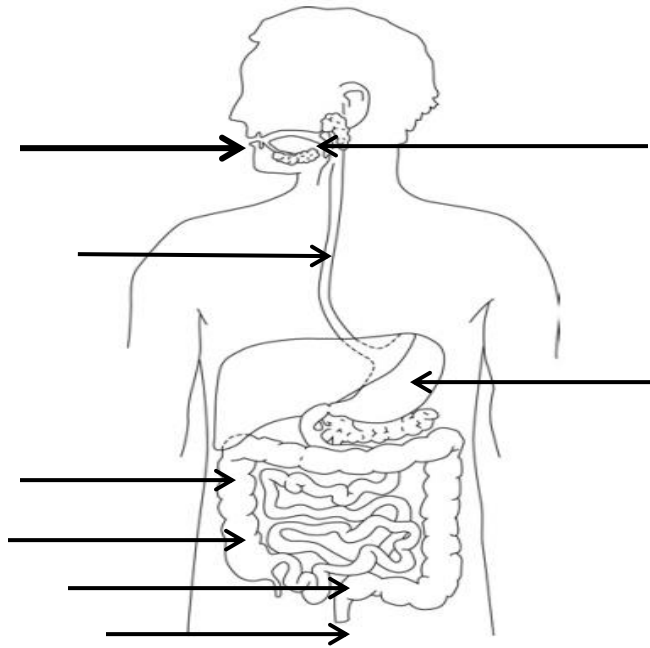


According to the above diagram, what are the two main functions done by the digestive system?

-
-

7.2

- Label the parts of the digestive system.
- The arrows depict the parts of the digestive canal where food is passing through. Label them.



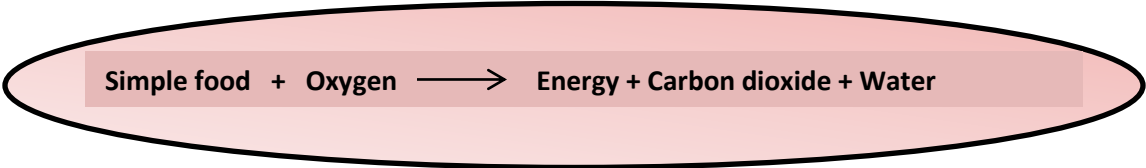
7.2

Match the parts of the digestive system and their functions.

Mouth cavity	Food digestion takes place in an acidic medium
Pharynx	Mechanical and chemical digestion of food begins
Oesophagus	Direct food into the oesophagus
Stomach	Takes food into the stomach
Small intestine	Absorbs water in food
Large intestine	Completes food digestion
Anus	Removes faeces

Activity 8 – Structure and function of human respiratory system

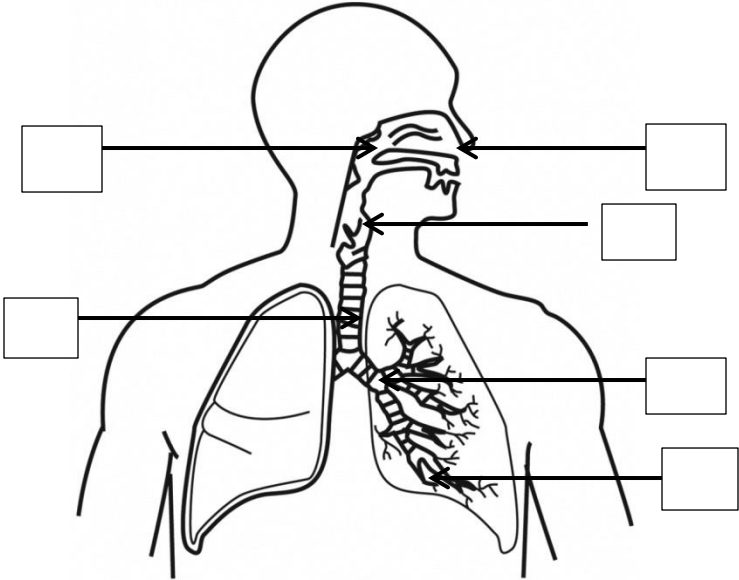
✓ The process of production of energy by the reaction between simple food and oxygen is known as Respiration



- What happens to energy produced in the process of respiration?
.....
- How is oxygen necessary for this process obtained?
.....
- How is carbon dioxide produced in this process removed?
.....

8.1

Write the letter that denotes each part of the respiratory system in the boxes provided.

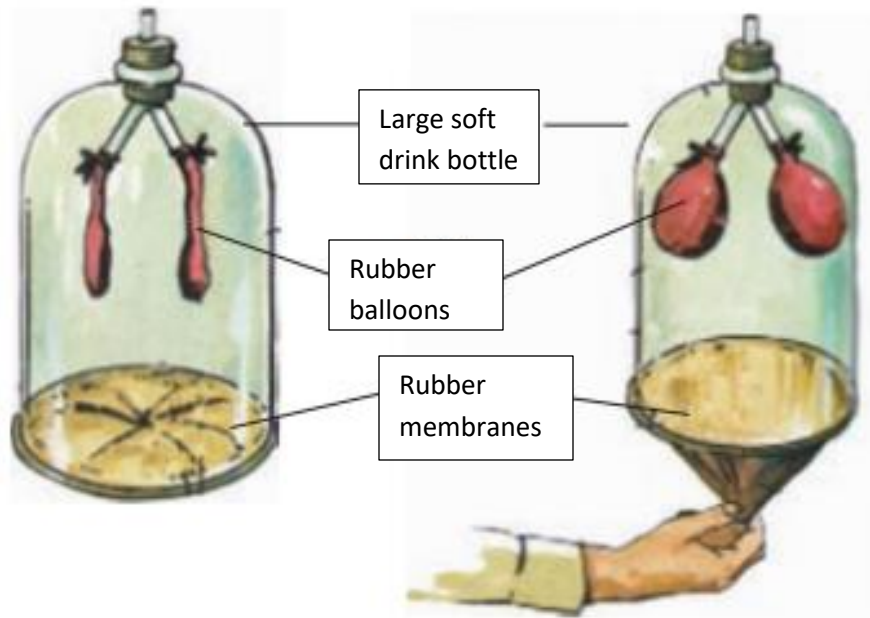


- A. Nose
- B. Pharynx
- C. larynx
- D. Trachea
- E. Bronchus
- F. Bronchioles

8.1 Let us demonstrate the functioning of the respiratory system

Things needed –

- Large bottle of soft drink, 1 large balloon, two small balloons, two pen tubes, a cork



Write down your observations.

.....

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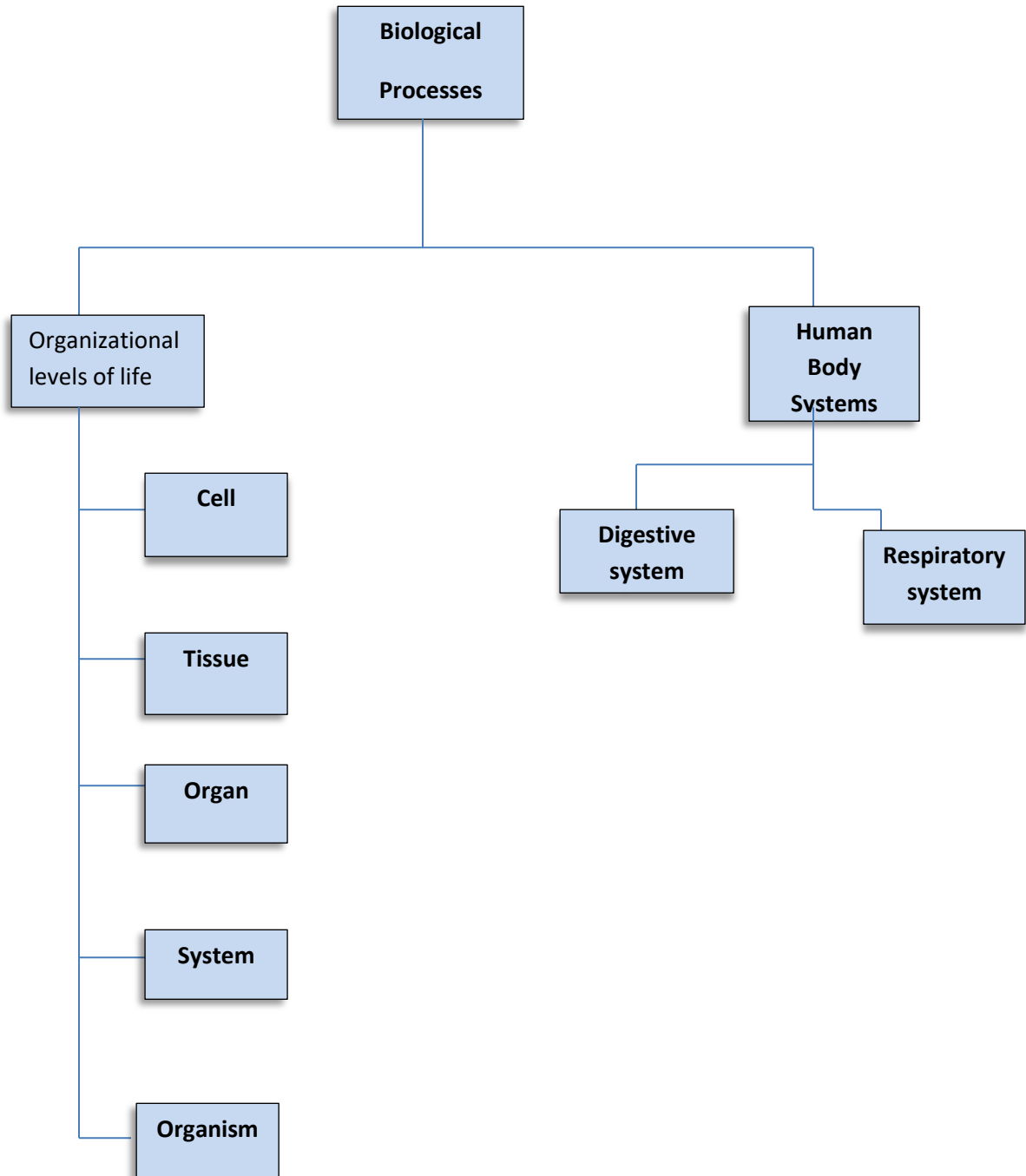
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Assessment

1. Write down the organizational levels of life in the order of increasing complexity.
2. Cite examples from the human body, for each level of organization of life.
3. Give an example to prove that the cell is the functional unit of life.
4. Name two types of tissues that the human stomach consists of.
5. What are the two types of food digestion takes place in the human digestive system?

Summary



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