



Unit summary note

Std 6, Unit-1, Caskets of life

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Even smaller than an ant

What are the things in which the organisms around us differ?

- In size
- In shape
- In colour
- In food habits
- In locomotion methods
- In number of legs
- In the case of organs
- In habitat (Living place)

Arrange these organisms according to their size in the descending order.

Elephant → Camel → Horse → Goat → Ant → Mosquito → Bed bug → Louse

How can we observe organisms that cannot be seen to naked eye?

Microorganisms that cannot be seen by the naked eye can be observed through a microscope.

Experiment note-1

Aim

To find out is there any organisms that cannot be seen with our naked eye.

Materials

Microscope, hay-soaked water, slide, cover glass

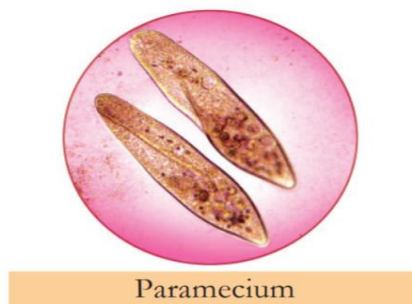
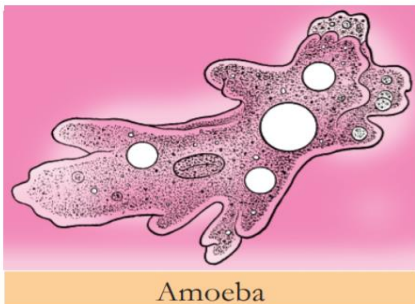
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<https://play.google.com/store/apps/details?id=com.basith.sasthracheppuapp>.

Procedure

Take one drope of hay-soaked water on a glass slide. Cover the slide with cover glass. Observe the slide though the microscope.

Observation

Some tiny organisms like in the following pictures are moving through the watter on the slide.



Inference

There are organisms that cannot be seen with naked eyes. They are microorganisms.

To see a video on this topic, click on this link.

<https://www.youtube.com/watch?v=DbMEnGJHFFI>

Cells

The body of all organisms are made up of many small units. These small unit of body are called cells. According to the number of cells in the body, organisms are classified in to two categories. They are unicellular organisms and multi cellular organisms

A. Unicellular organisms

Organisms with only one cell in their body are called unicellular organisms. Amoeba, paramecium, euglena, bacteria, clamidomonus and some kinds of algae and fungi are examples for unicellular organisms.

To see a video on this topic, click on this link.

<https://www.youtube.com/watch?v=OAu2C0cHfHk&list=PL9AshZEiXvDkyQOsYG1hObp9qSLnoqexY&index=5>



B. Multicellular organisms

Organisms with more than one cell in their body are called multicellular organisms. Man, ant, goat, louse etc. are examples for multicellular organisms. Plants are also multicellular organisms.

Experiment note-2

Aim

To find out whether our cells grow as we grow.

Materials

Microscope, slide, pure water, methylene blue stain, two new toothbrushes and cover glass.

Procedure

Observe the cheek cells of a child and those of an adult through a microscope. For this, scrape the internal surface of the cheek using a new toothbrush. Place the cheek scrap in the drop of water on the slide. Spread this and add a drop of stain. Cover it with the cover glass. Observe the slide through the microscope.

Observation

The size of the cheek cells of the child and adult are the same.

Inference

Our cells do not grow as we grow.

How we grow?

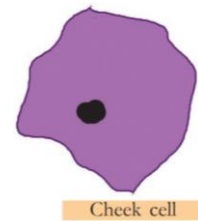
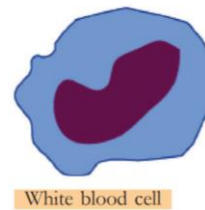
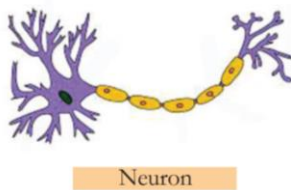
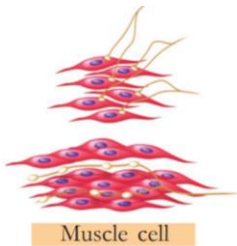
We grow by increasing the number of cells. This happens due to cell division. Cells divide to form new ones when they attain full growth. This results in the increasing of the cells and thus growth. There are millions of cells in human body.

Different types of cells in human body

Click on the link and observe the video

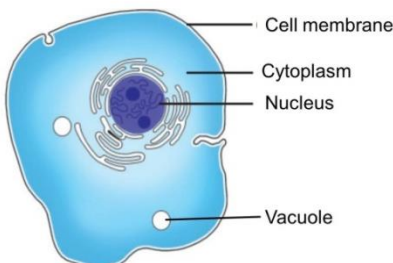
<https://www.youtube.com/watch?v=iMHjSsE2f3o&list=PL9AshZEiXvDkyQOsYG1hObp9qSLnoqexY&index=5>

Observe the following pictures. Write your inference about human cells.



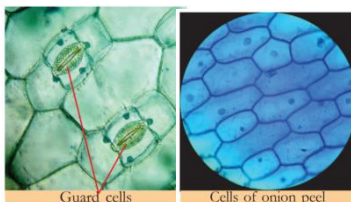
- All types of cells differ in size.
- Cells also differ in shape.
- Some common parts are seen in all types of cells.

Parts of cell



All cells have some common parts. Nucleus, cytoplasm, cell membrane, vacuole etc. are some of the important parts of a cell. They are called cell organelles. Nucleus is the centre of the cell. It controls the activities of the cell. Cell membrane is the covering of the cell. It protects the cell. The matrix filled inside the cell membrane is called cytoplasm.

Diversity in plant cells



Observe the onion cells and the guard cells and other cells in leaf. Just like animal cells, plant cells also differ in their size and shape.

To watch a video on this topic, click on this link.

<https://www.youtube.com/watch?v=Q8vHB6lLuTs&list=PL9AshZEiXvDliKbw3pxDbolYQCAfmEHp3&index=24>

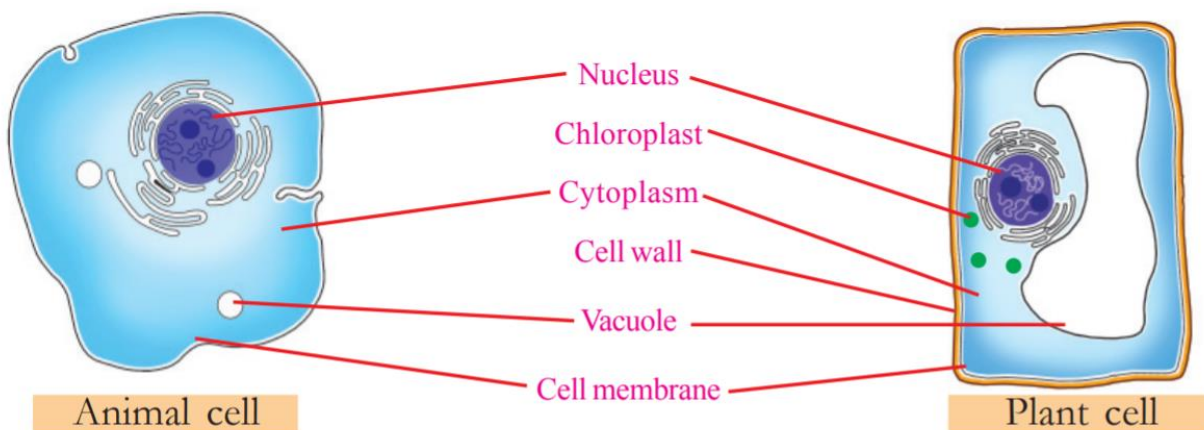


How to make the model of a plant cell? See the following video.

<https://www.youtube.com/watch?v=QNLK6LEfxF4&list=PL9AshZEiXvDliKbw3pxDbolYQCAfmEHp3&index=18>

Cells Comparison

Compare the pictures and write the similarities and differences between plant cell and animal cell.



Both animal cell and plant cell have nucleus, cell membrane and cytoplasm. But chloroplast and cell wall is present only in plant cell. Vacuole is present in both cells, but it is smaller in animal cell and much bigger in plant cell. Even though plant cells and animals have some similarities, they differ in size, shape and structure.

To watch a video on this topic, click on this link.

<https://www.youtube.com/watch?v=ITT3ENXWR0M&list=PL9AshZEiXvDkyQOsYG1hObp9qSLnogexY&index=7>

Complete the table

Parts of the cell	Animal cell	Plant cell
Nucleus	✓	✓
Cell wall	×	✓
Cell membrane	✓	✓
Cytoplasm	✓	✓
Vacuole	✓	✓
Chloroplast	×	✓

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<https://play.google.com/store/apps/details?id=com.basith.sastracheppuapp>



Are the different parts of a plant made up of same kinds of plants?

No, the cells of the different parts of a plant such as root, stem, leaf, fruit, flower, stem are different in size and shape.

To watch a video about the story of discovery of cells, click on the following link link.

<https://www.youtube.com/watch?v=YmBEp8TPq8&list=PL9AshZEiXvDkyQOsYG1hObp9qSLnoqexY&index=6>

To watch a video about Covid 19 virus, click on the following link link.

<https://www.youtube.com/watch?v=Gt-OTqDWag&list=PL9AshZEiXvDkyQOsYG1hObp9qSLnoqexY&index=8>

Unit conclusion

Plants and animals have cells that differ in shape and size. The life sustaining activities take place by the coordination of these cells.

Let us assess

1. Do you agree with the following statements? Explain.

a) Hand lens, microscope etc., may be used for observing cells.

No, we can observe microorganisms only through a microscope.

b) There are organisms on the earth with only one cell.

Yes, organisms like amoeba, paramecium, euglena and bacteria have only one cell in their body.

c) The difference in the size of the organisms is due to the difference in the size of cells.

No, the difference in the size of the organisms is due to the difference in the number of cells.

d) All cells in an organism are of the same kind.

No. Cells on different body parts have different shape and size.



2. Given below in the table are a few details prepared by a child comparing animal cell and plant cell. Complete the table by filling parts of the cell

No.	Parts of the cell	Plant cell	Animal cell
1	Nucleus	Yes	Yes
2	Vacuole	Large	Small
3	Cell wall	Yes	No
4	Cytoplasm	Yes	Yes
5	Chloroplast	Yes	No
6	Cell membrane	Yes	Yes

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