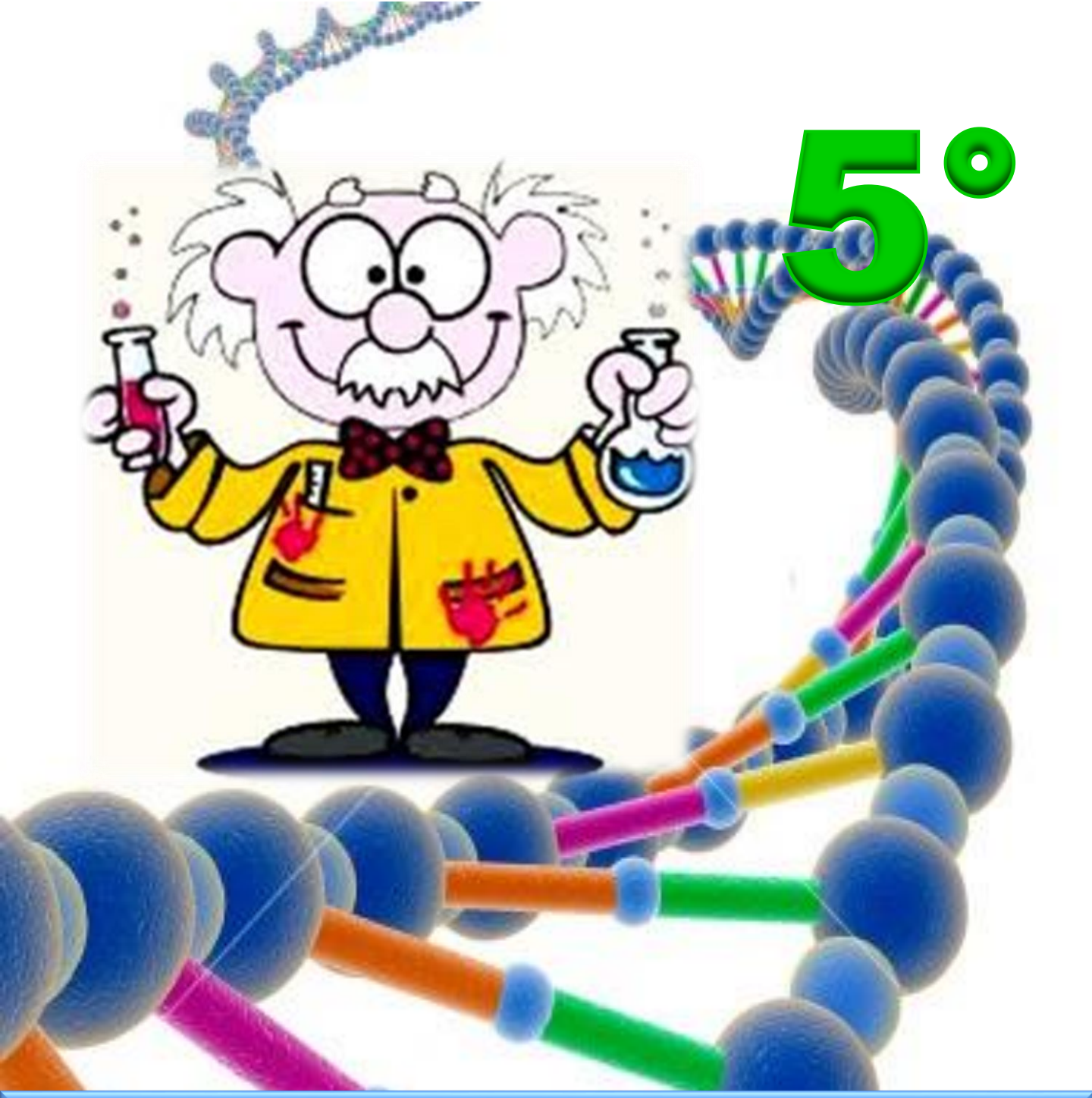


5°

Science

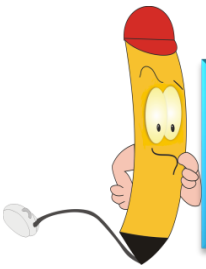
Know the contents

The Miami Virtual School, presented through texts for elementary education program and sequence of natural science content, enriched with several videos and subtopics. With this text handling you acquire attitudes, skills, abilities and concepts that allow you to expand your worldwide.

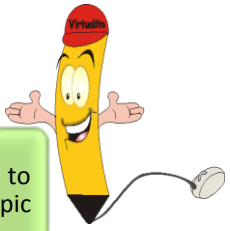
Your contents are grouped into four sessions containing topics and subtopics of several pages. Each topic begins with a title, a series of questions whose purpose is to arouse your interest in the contents, you can use these questions at the end of a topic to test your learning. You'll find images related to the concepts and themes, videos, charts, concept maps with didactic sense

The virtualitos help you journey through this adventure of knowledge.

Inquire to...



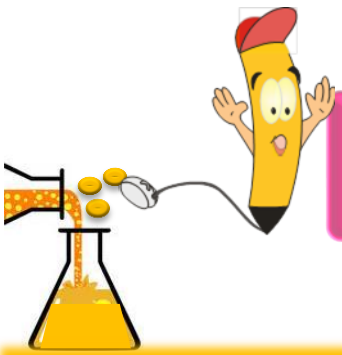
When you find this icon you know that there are many unanswered questions, which you can use at the end of a topic to find what you have learned.



When you find this icon you have to carry out the activities for each topic or subtopic.

Art is part of your activities, giving a personal touch when you go to color. Now you are the artist!

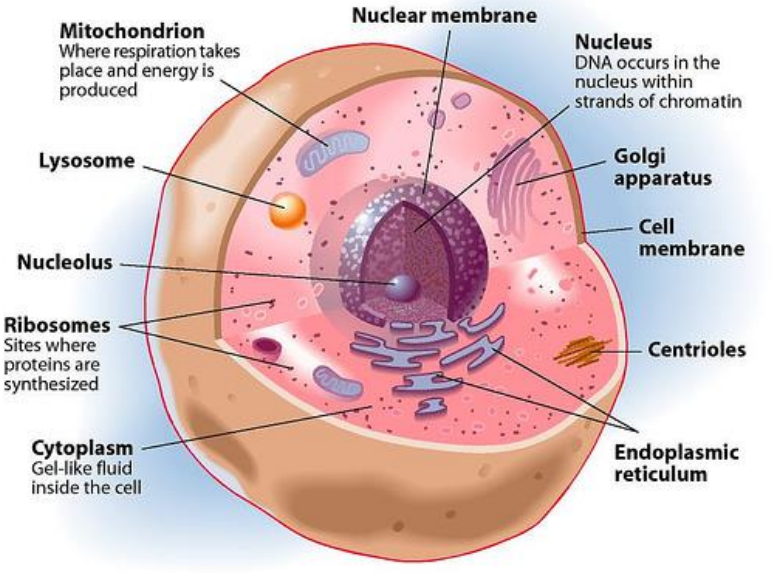
Virtualito invites you to learn more about the theme, research new things. That's intesting to know!



Didiyou know that….?
You'll find fun facts that invite you to learn about other related topics

The cell

In this unit we will learn that ...



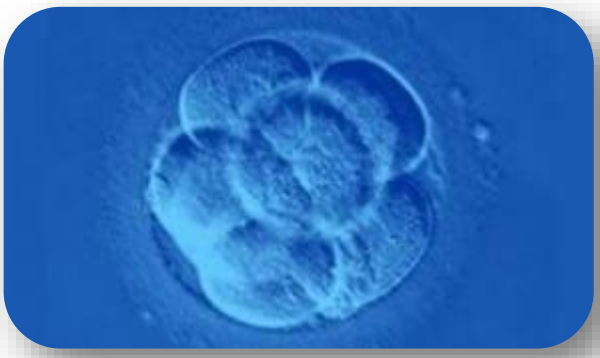
All living things are composed of cells that are very small structures, visible only through a microscope.

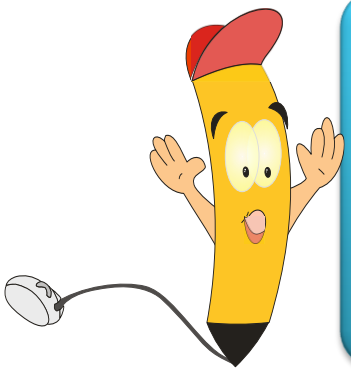
The history of the cell

In 1665, Robert Hooke observed with a microscope a thin cork cut (bone of a tree called elderberry), and noticed that the material was porous.

These pores as a whole, formed as a shallow cavities boxes that were called cells (meaning small cells). Hooke had observed dead cells. A few years later Marcelo Malpighi, Italian anatomist and biologist, observed living cells. She was the first person to study living tissue microscopically.

Only until 1838, and then the progress and improvement of microscopes, the German biologist Jakob Mathias Sxhleiden claimed that all living organisms are composed of cells.





Know?

The human body has about 10 trillion cells.

Basic components of the cells

The cells are highly organized structures inside. However, all cells except the cells of the bacteria are much easier to share a general organization:

The membrane that determines their individuality, limits the cell and determines which substances enter the cell and which are not.

Contains genetic material.

The cytoplasm is filled with organelles. Where running virtually all functions.

The cell in living things

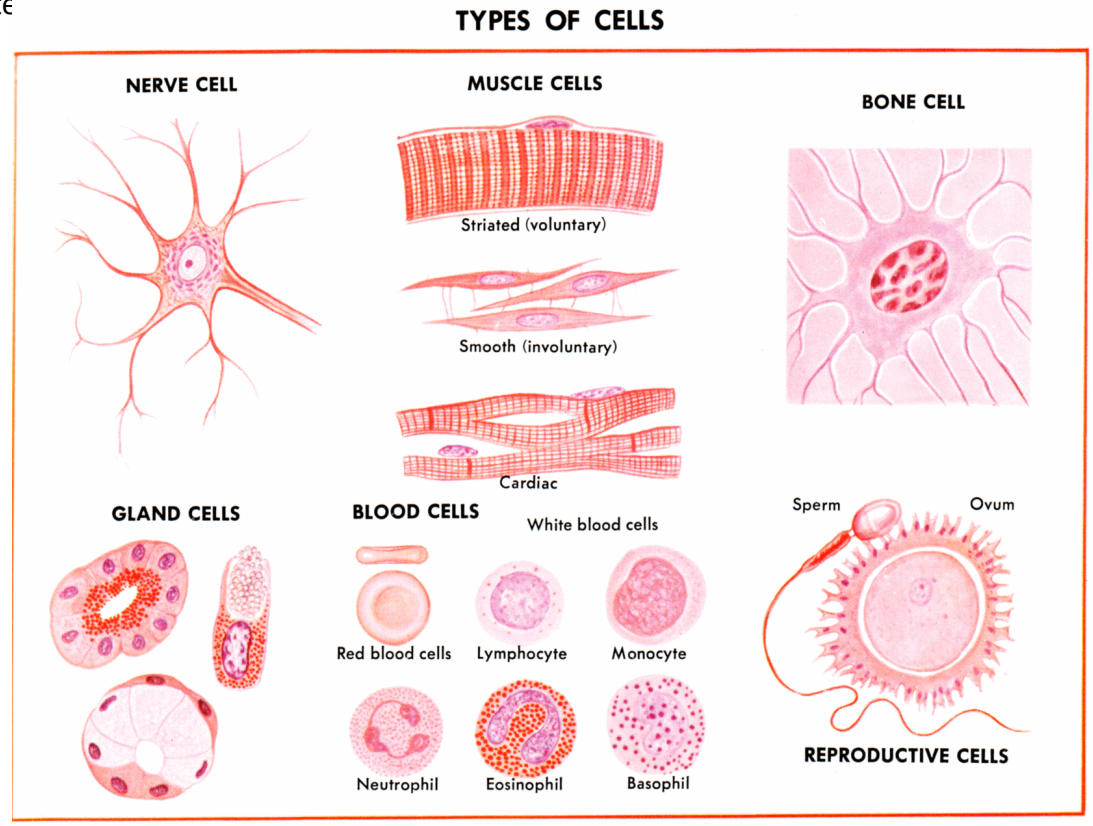
Living things are made up of units called cells minimum. Inside the cell occurs every basic chemical and physiological functions.

Cells are alive, perform vital functions like any living being. That is, born, grow, reproduce and die. To do this, they need to eat and breathe, just like us. However, their internal organs are different and are called organelles.

Size and shape of cells

The cell size is extremely variable but the fact is that most are microscopic cells: They are not visible to the naked eye, but we have to use tools like the microscope.

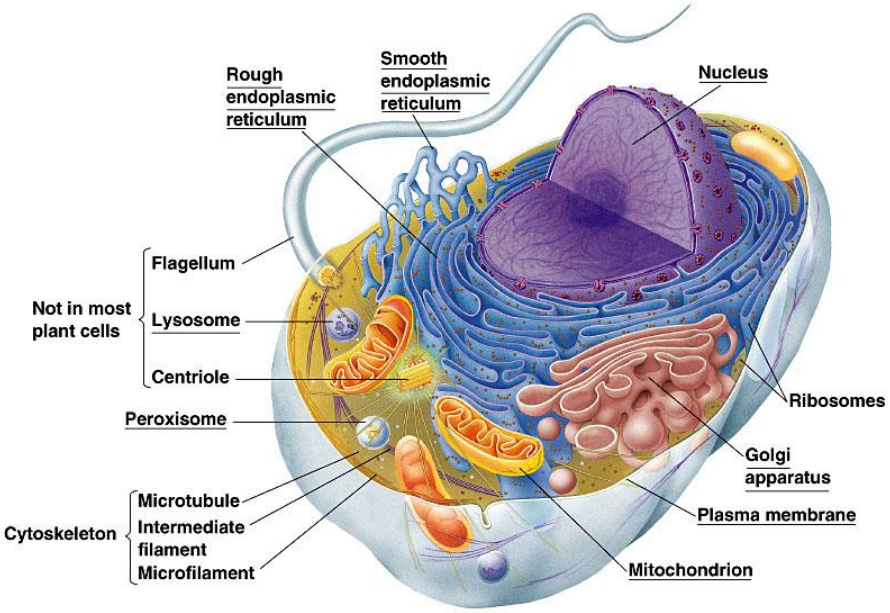
In general we can say that the cell shape is basically determined by its function. It also depends on its external elements (cell wall extensions as cilia and flagella) and other inte



Cell Structure

The cells are formed of three components:

Cell membrane
core
cytoplasm



The cell membrane is a structure that surrounds the cell, its function is to allow entry and exit of substances in the cell, it also acts as a protective barrier that prevents the entry of harmful substances.

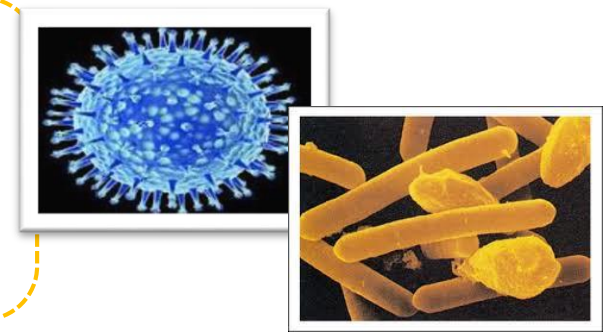
The core: Coordinates all activities of the cell. Inside are structures called chromosomes responsible for transmitting the heritage of the fathers to the children.

The cytoplasm is the part between the nucleus and the membrane, it is located organelles.

Internal Organization of living things

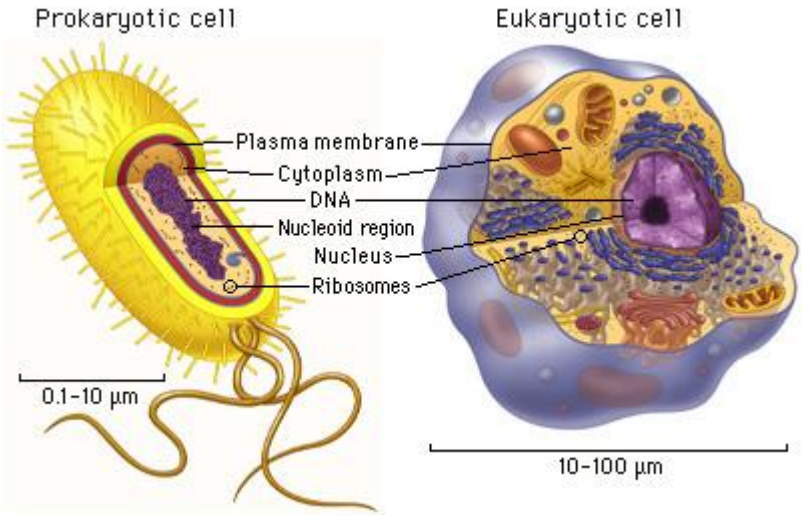
Prokaryotic: are very primitive organisms whose genetic material (DNA) is concentrated in one region, but there is no membrane separating the region from the rest of the cell, it is said that no definite nucleus.

For example: Bacteria



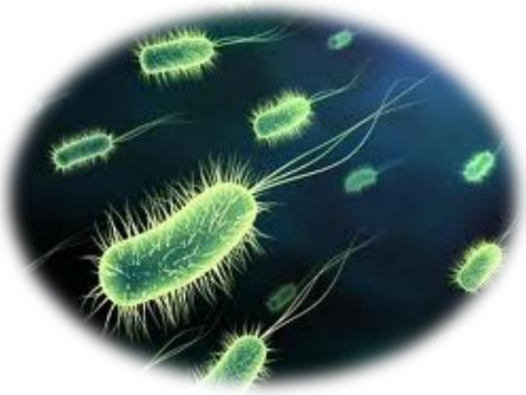
Eukaryote: This consists of cells that have true nucleus, ie a nucleus separated from the cytoplasm by a double membrane distinct.

For example: The Rose, the beetle.

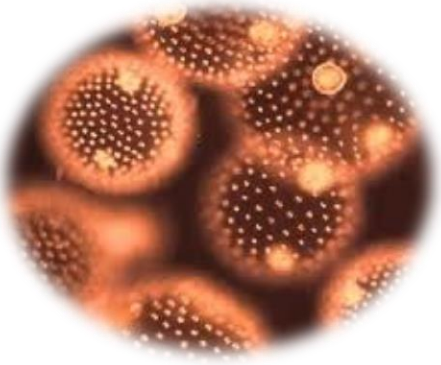


All living things are composed of cells. Depending on the number of cells that form them, living beings can be classified into unicellular and multicellular.

Unicellular beings are those that consist of a single cell. In these cell beings develops all functions for the development of life. They are able to eat, breathe, eliminate waste and reproduce. Examples amoebae or bacteria.



Multicellular or multicellular organisms are those that are composed of more than one cell, which are differentiated and divided to perform specific functions.



Levels of organization

Multicellular beings are arranged to form more complex structures ranging from one cell to the systems.

- **System**

A group of cells, tissues and organs that are organized to perform a certain function.

- **Cell**

The smallest structural and functional unit of living beings, able to function independently. Each cell has a chemical support for inheritance (DNA), a chemical system to acquire energy, etc..

- **Tissue**

Grupo de células de igual forma y tamaño semejante que realizan una misma función.

- **Organs**

Groups of tissues that work together to perform a specific function. For example, the heart is an organ that pumps blood into the circulatory system.

Human Body Tissues