

**HELLO!**

**Scientific project**





# Cellology

## Introduction:

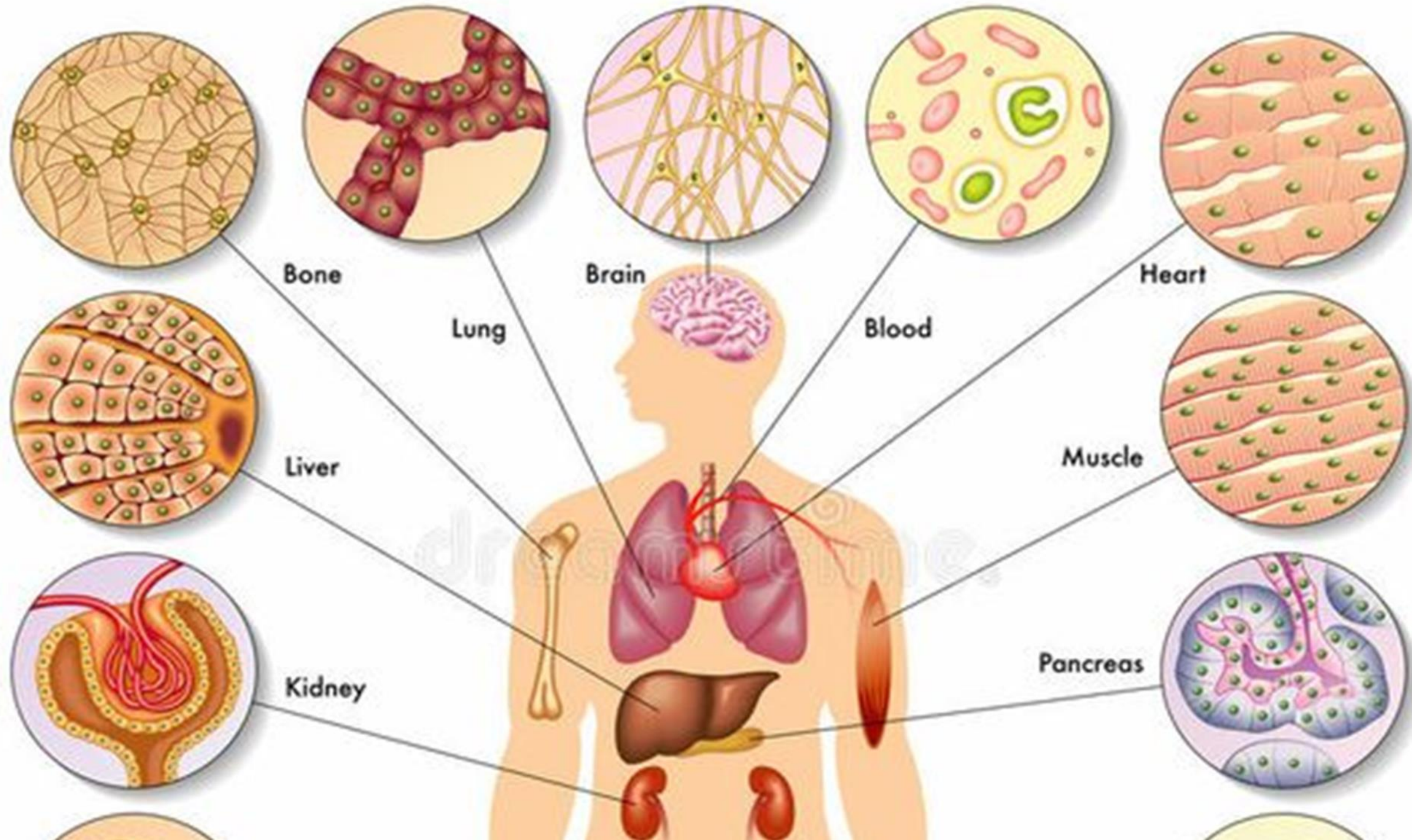
Cells are tiny building blocks that make up all living things. They are like the bricks that form a house, but much smaller. Every living organism, from plants and animals to us humans, is made up of cells. These cells work together to keep the living thing alive and functioning.



## General Features



Cells have some common features. They are like little bags that hold everything a living thing needs to survive. Each cell has a special «skin» called the cell membrane, which acts like a fence, keeping the insides safe and protected. Inside the cell, there is a control center called the nucleus that holds the cell's instructions.



# BACTERIA



# Types of Cells

The main types are plant cells and animal cells. Simpler organisms, including bacteria, have simpler cells. They have a membrane and cytoplasm but no nucleus.

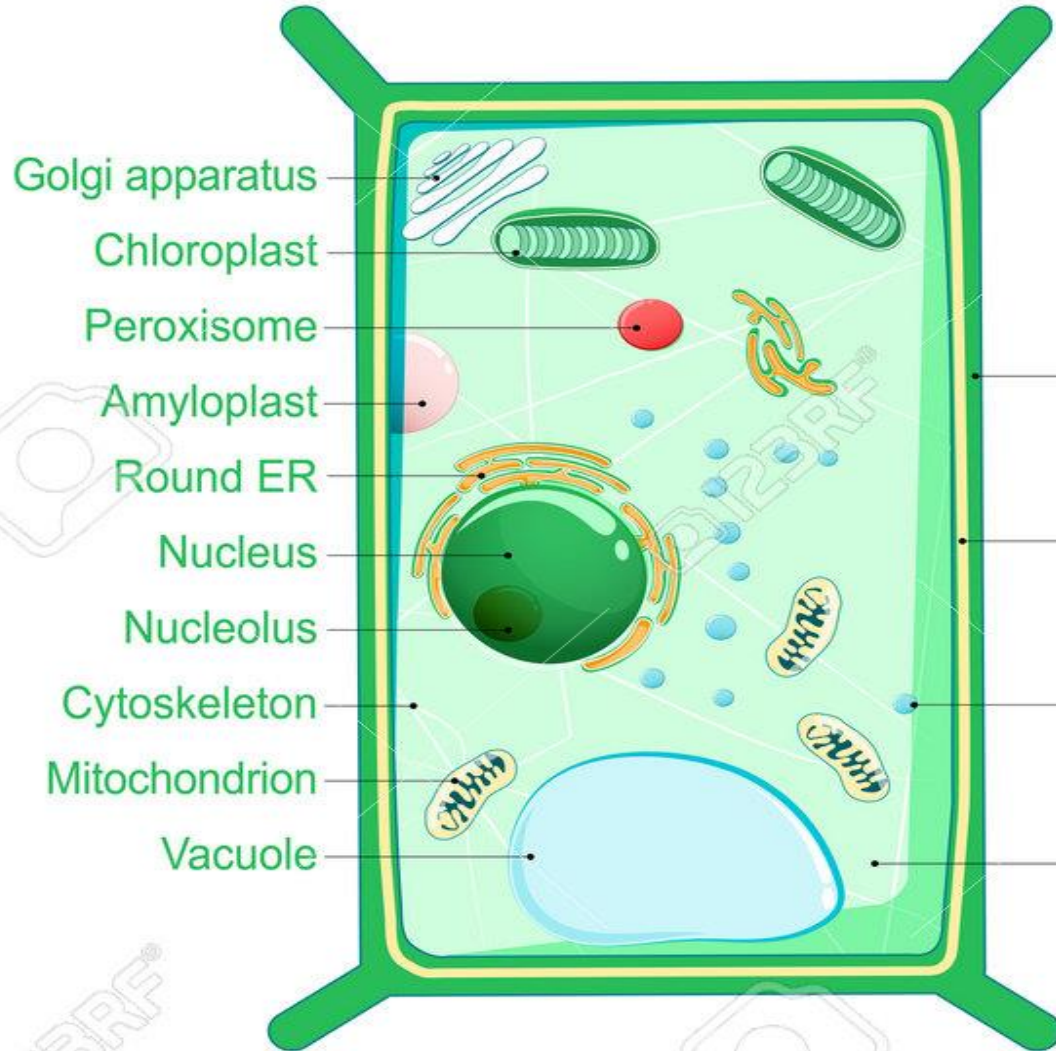
In plant cells, a rigid wall surrounds and protects the cell membrane. The wall is made of a woody substance called cellulose. A plant's cell walls make the plant hard enough to grow tall.



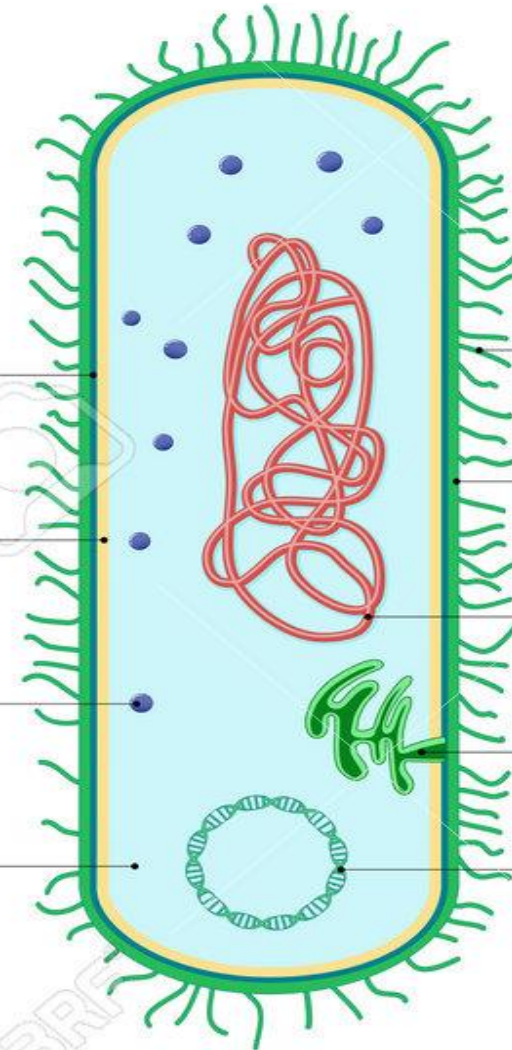
# Plant cell

# Bacterial cell

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- Cell wall
- Cell membrane
- Ribosomes
- Cytoplasm












- Pilus
- Capsule
- Nucleoid
- Mesosome
- Plasmid



# Parts of a Cell and Their Functions

Cells are made up of smaller parts, just like a house has rooms. Each part, called organelles, has a specific job to do. Here are some important ones:

-  **Nucleus:** This is like the cell's control center or brain. It holds the cell's instructions, which tell it what to do and how to grow.
-  **Cytoplasm:** It's like a jelly filling inside the cell that holds all the other parts together.
-  **Mitochondria:** These are like tiny powerhouses. They turn food into energy that the cell can use to do its work.

-  Cell Membrane: It's like the cell's protective fence. It controls what goes in and out of the cell.
-  Endoplasmic Reticulum (ER): This is like a transport system inside the cell. It helps move things around.
-  Golgi Apparatus: This part packages and sends out proteins and other materials from the cell.
-  Vacuole: It's like a storage space in the cell. It holds water, nutrients, and waste.
-  Chloroplasts (in plant cells): These help plants make food using sunlight. This process is called photosynthesis.
-  Each part works together like a team to keep the cell healthy and functioning properly, just like how all the rooms in a house work together to make it a comfortable place to live.

**Membrane**

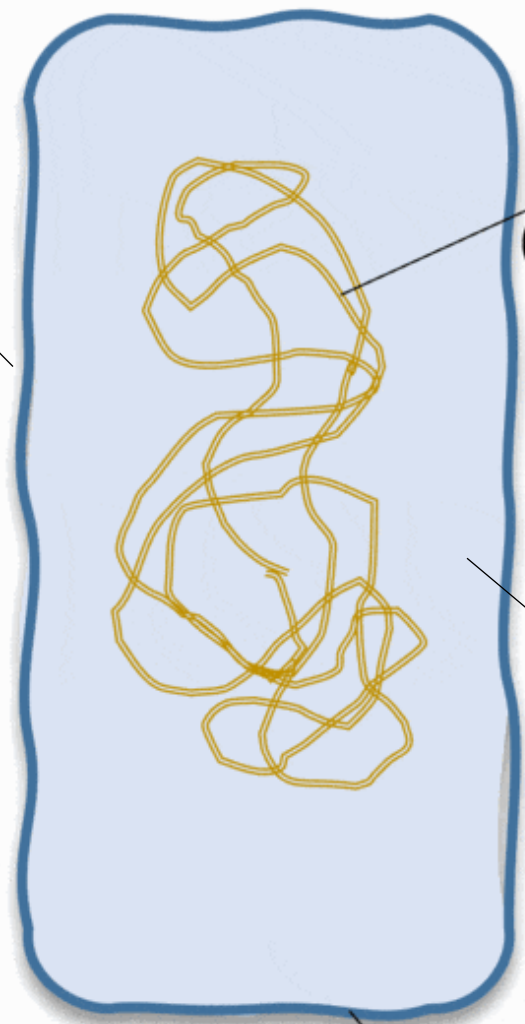
**nucleoid**

(bacterial chromosome)

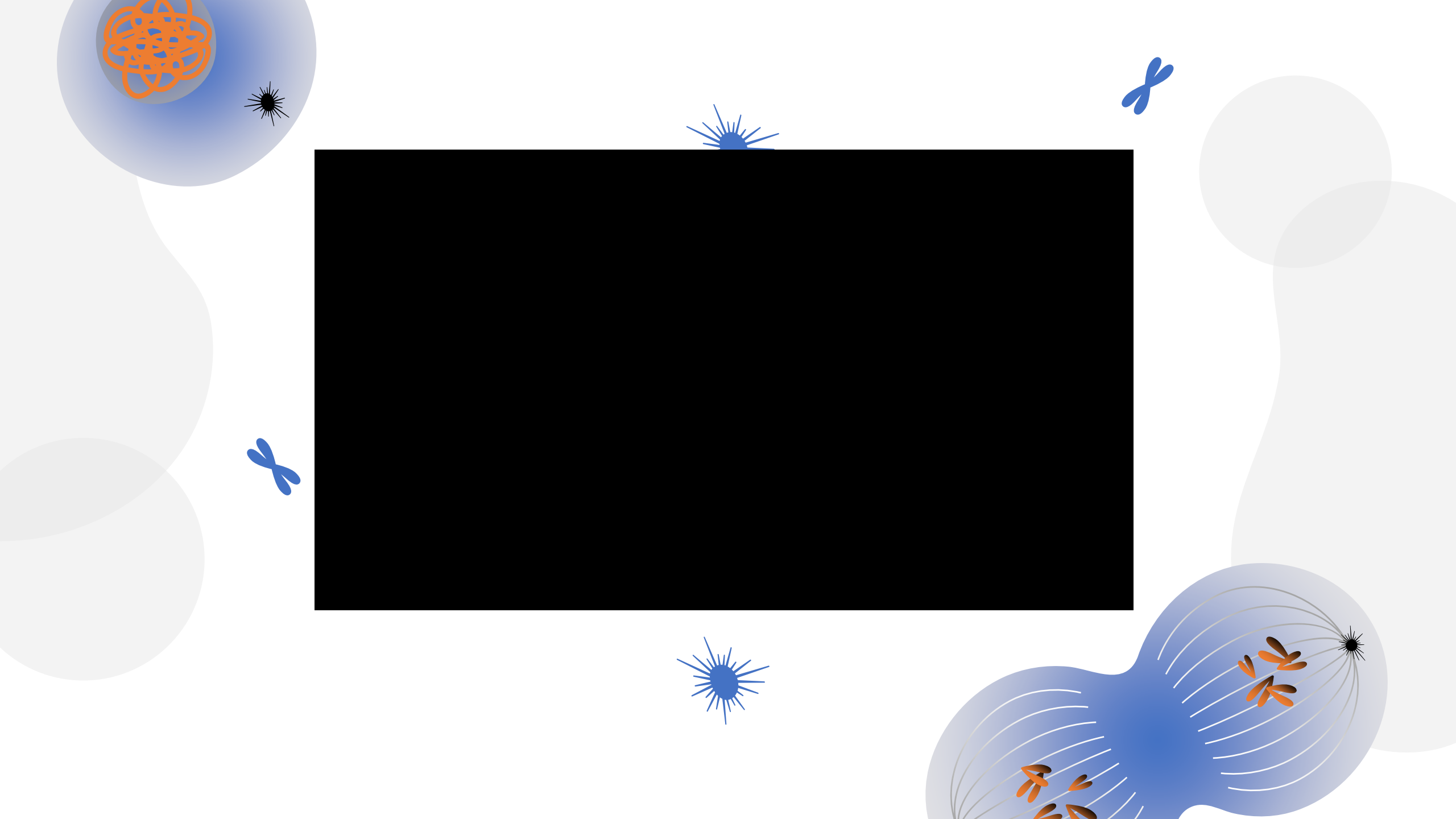
**cytoplasm**

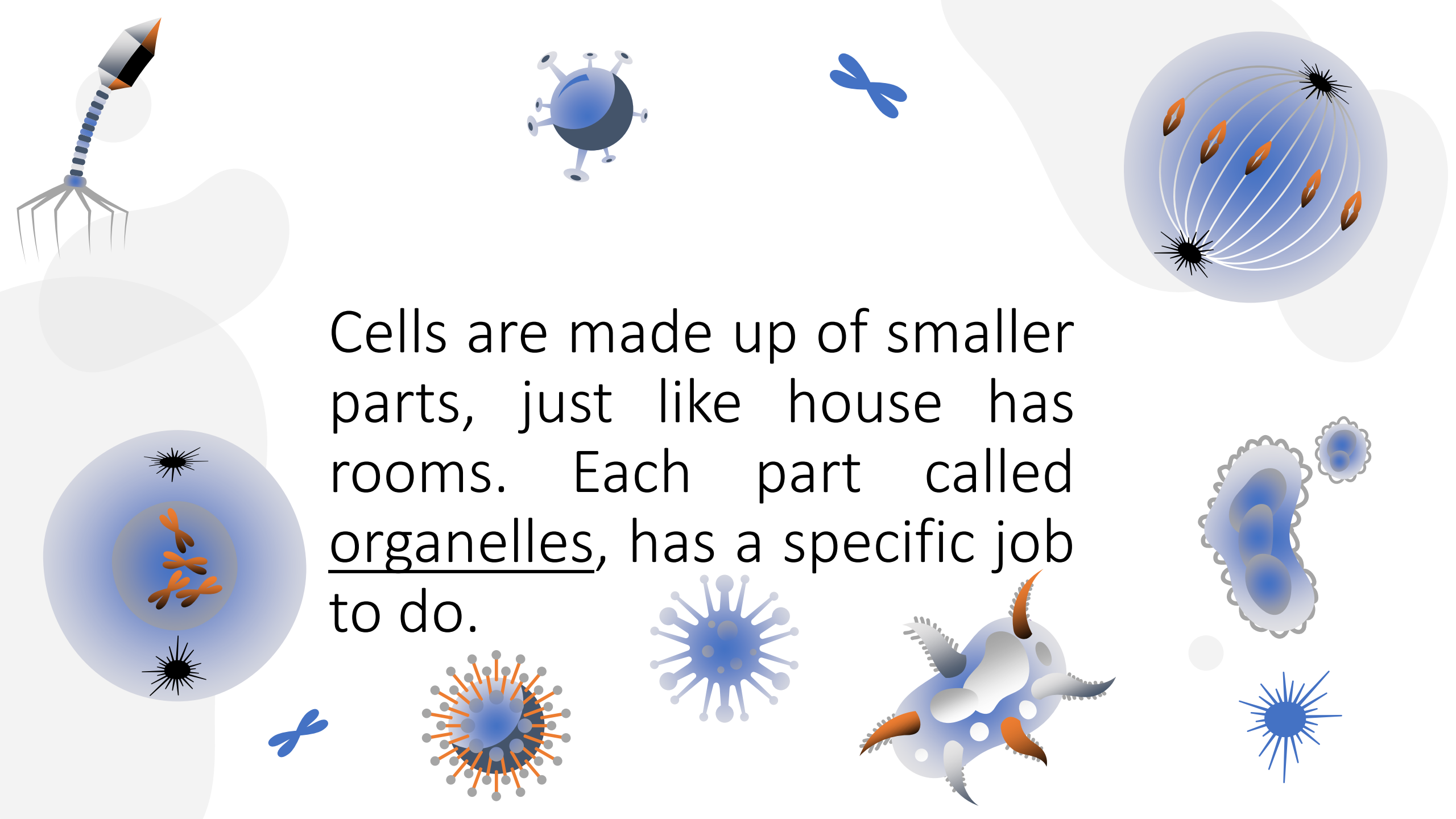


**plasmid**




**bacterial cell**





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Conclusion