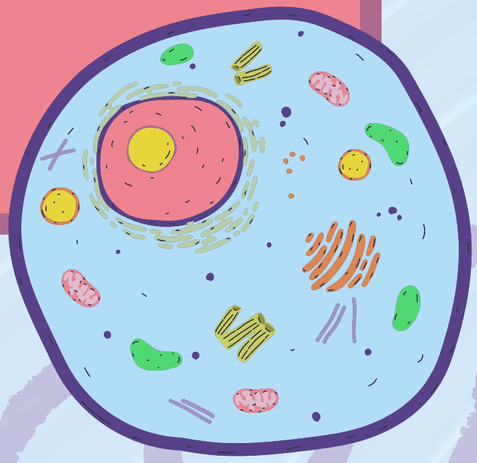
PLANT & ANIMAL CELLS

ORGANELLES & STRUCTURES



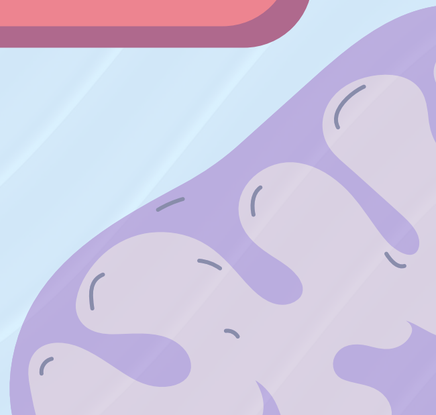
LEARNING OBJECTIVES

I know that there are special structures within cells that are responsible for specific functions.

I am able to identify different structures within a cell.

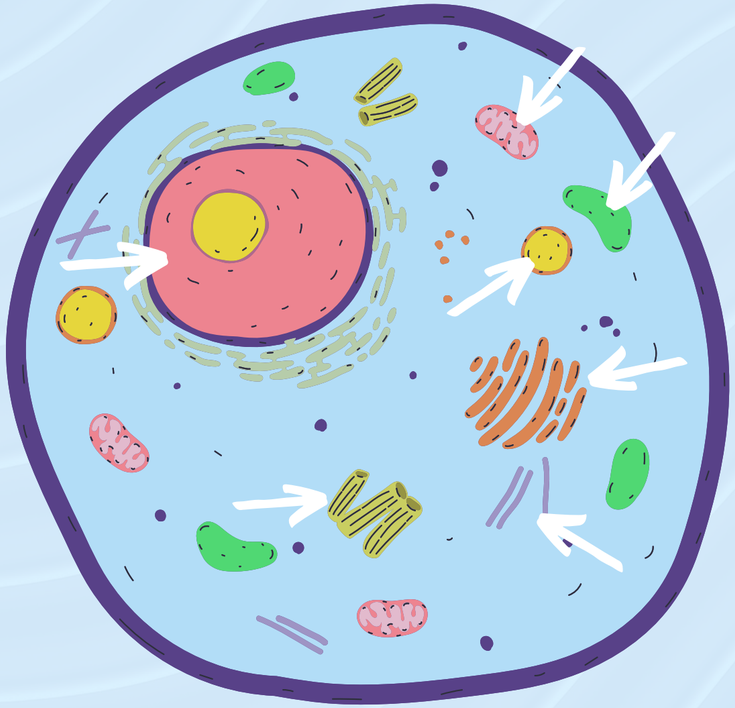
I am able to explain each structure’s function is within a cell.

DO YOU REMEMBER THE DEFINITION OF ORGANELLES?

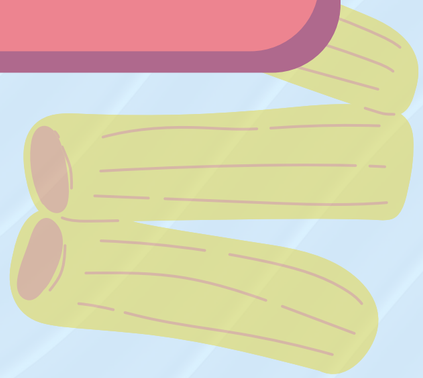


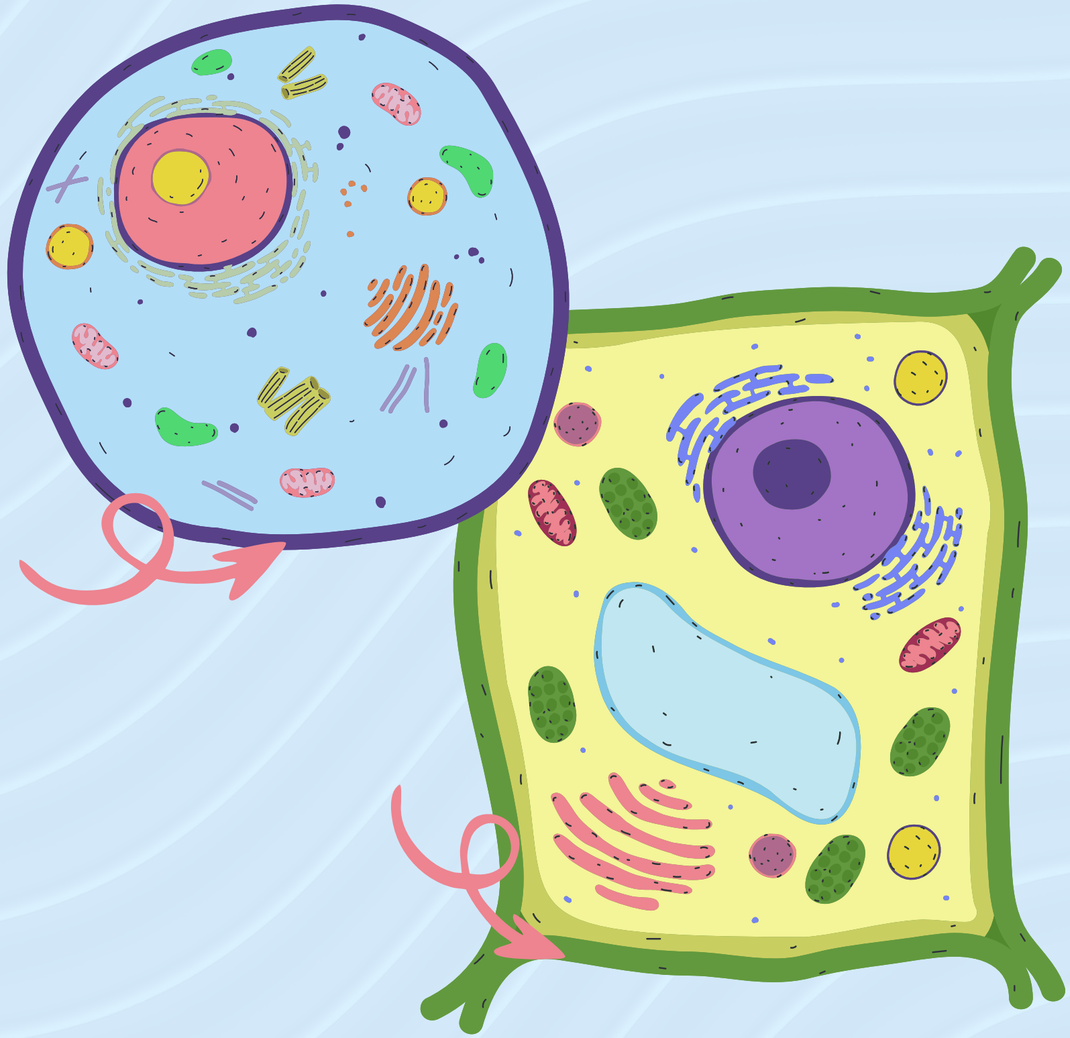
WHAT IS AN ORGANELLE?

Organelles are the different structures inside a cell that each have different jobs or functions to complete within the cell.



LET'S LOOK AT THE TYPES OF ORGANELLES

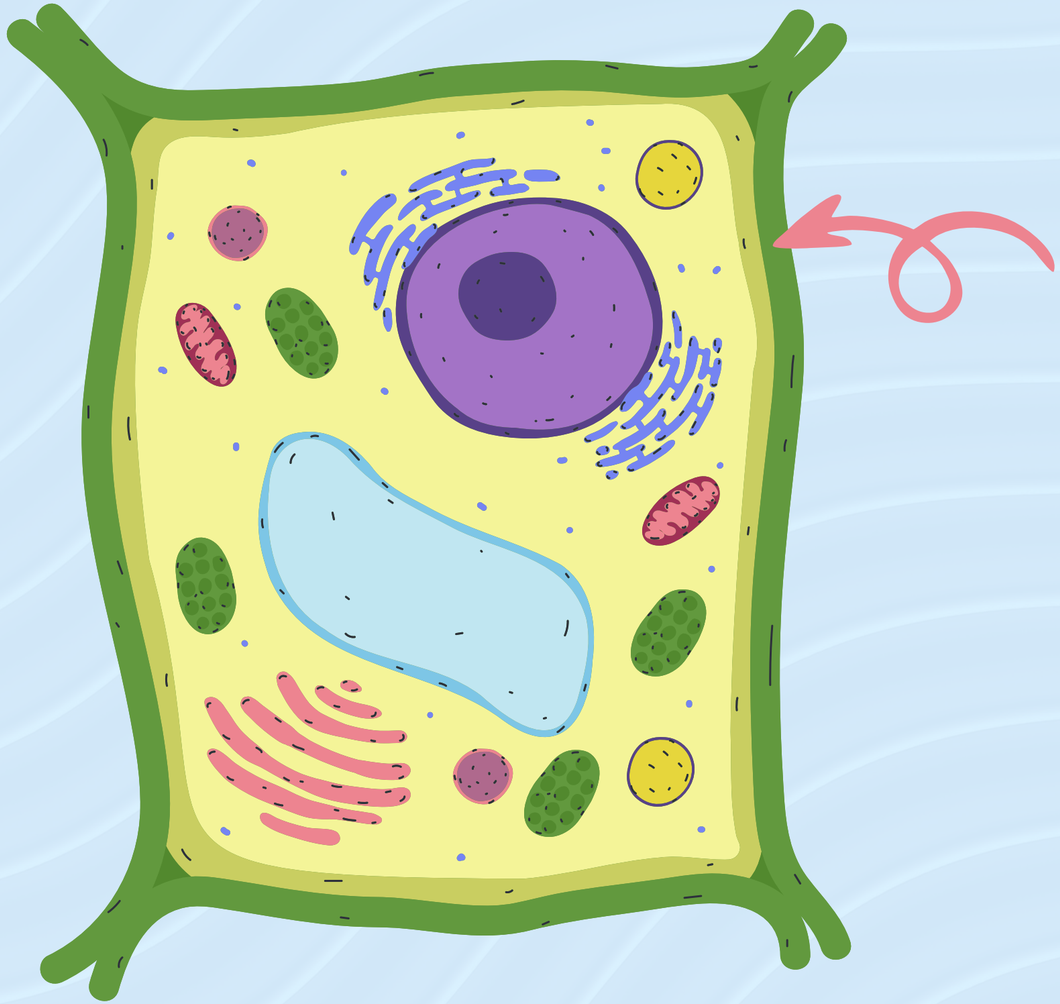




CELL MEMBRANE

The layer of both plant and animal cells that helps keep fluids and other organelles inside the cell.

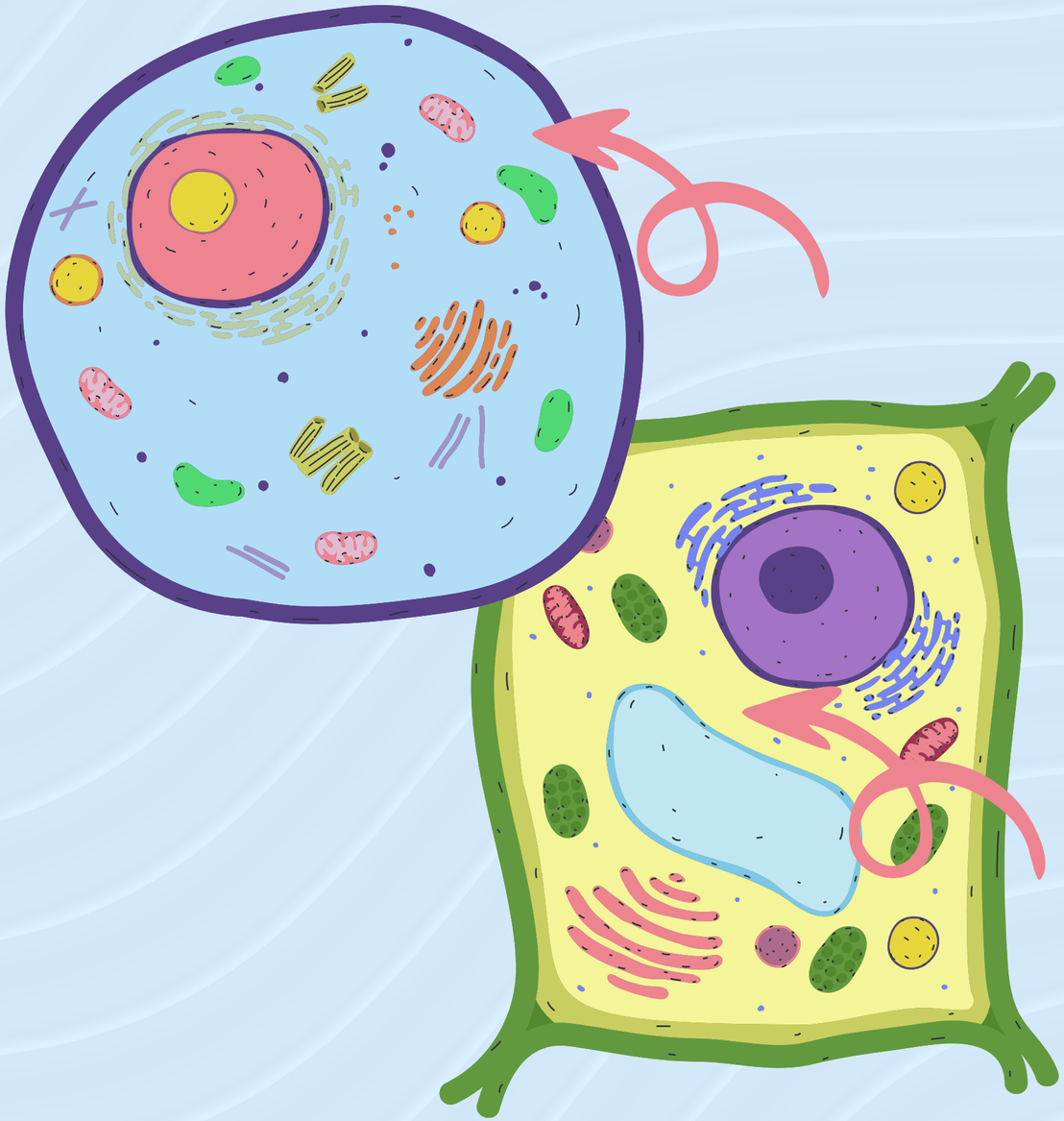
The cell membrane acts as a “security guard” as it has small holes that let some molecules in but keeps out any harmful molecules.



CELL WALL

The outer layer of plant cells that helps keep everything inside the cell protected.

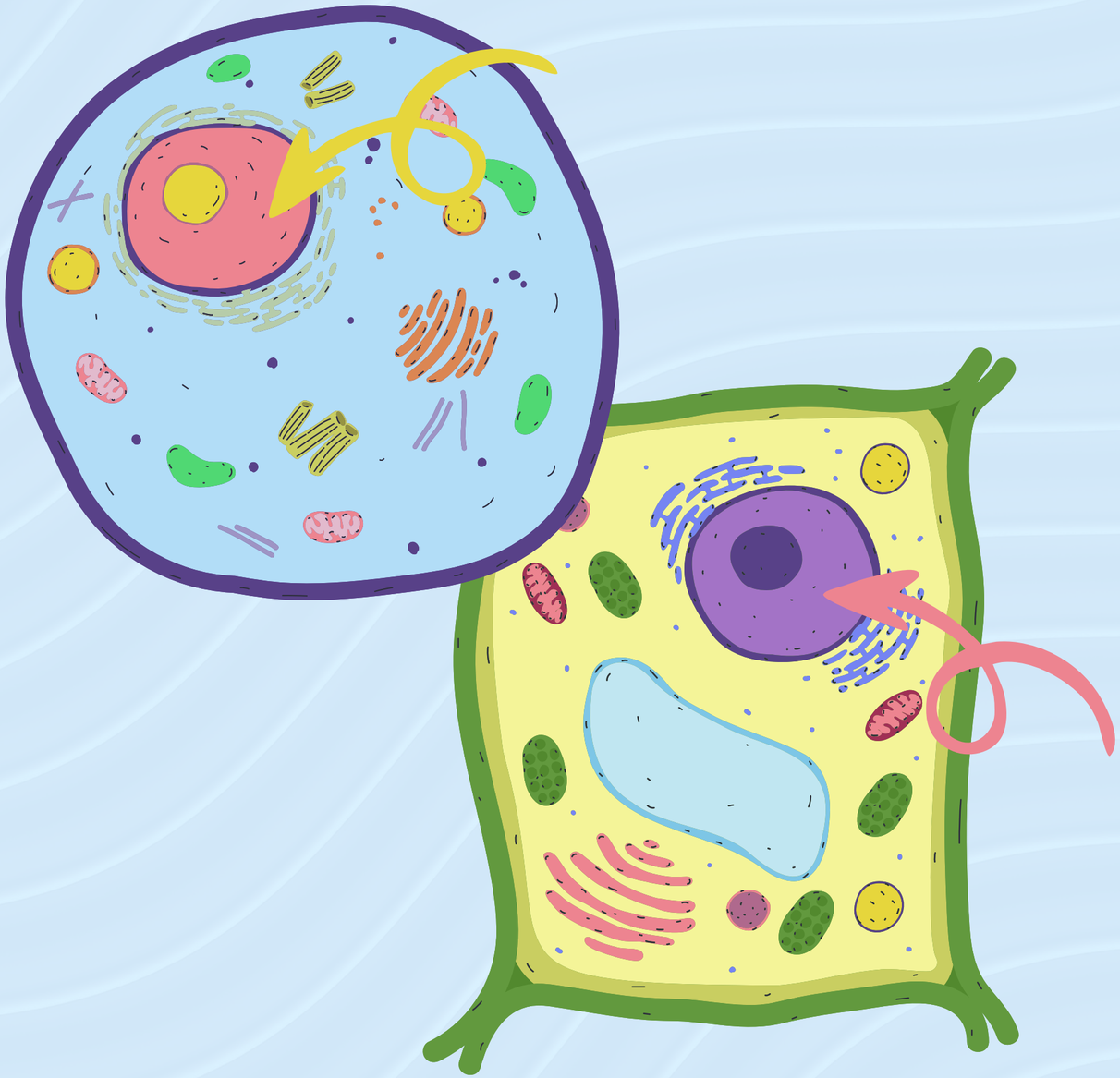
The cell wall is made of very strong materials that can keep anything harmful outside of the cell.



CYTOPLASM

The fluid that fills a cell.

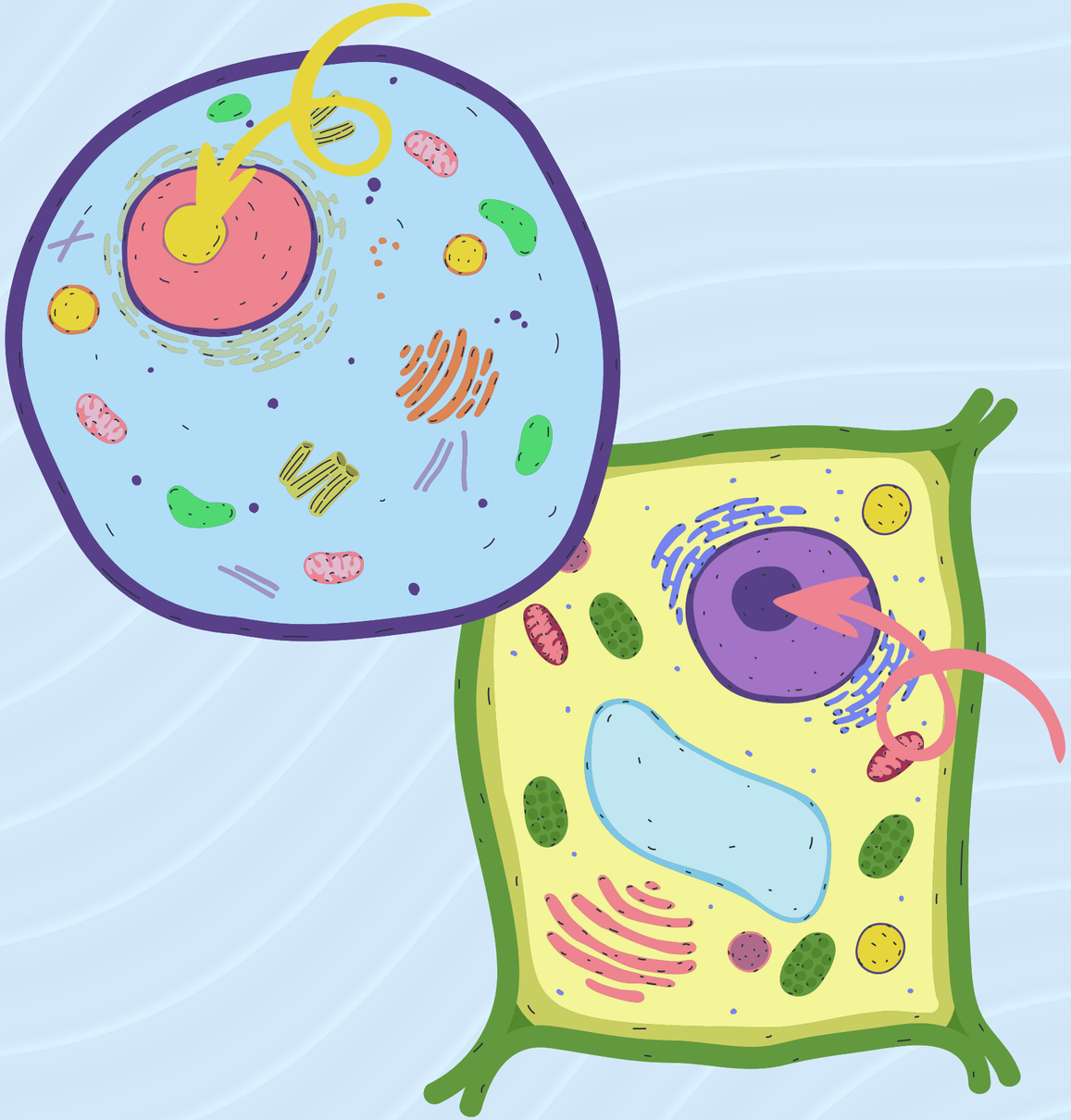
Cytoplasm is found in both plant and animal cells and is made up of many dissolved molecules that can be used for other processes throughout the cell.



NUCLEUS

The “control center” of both plant and animal cells that controls growth and reproduction.

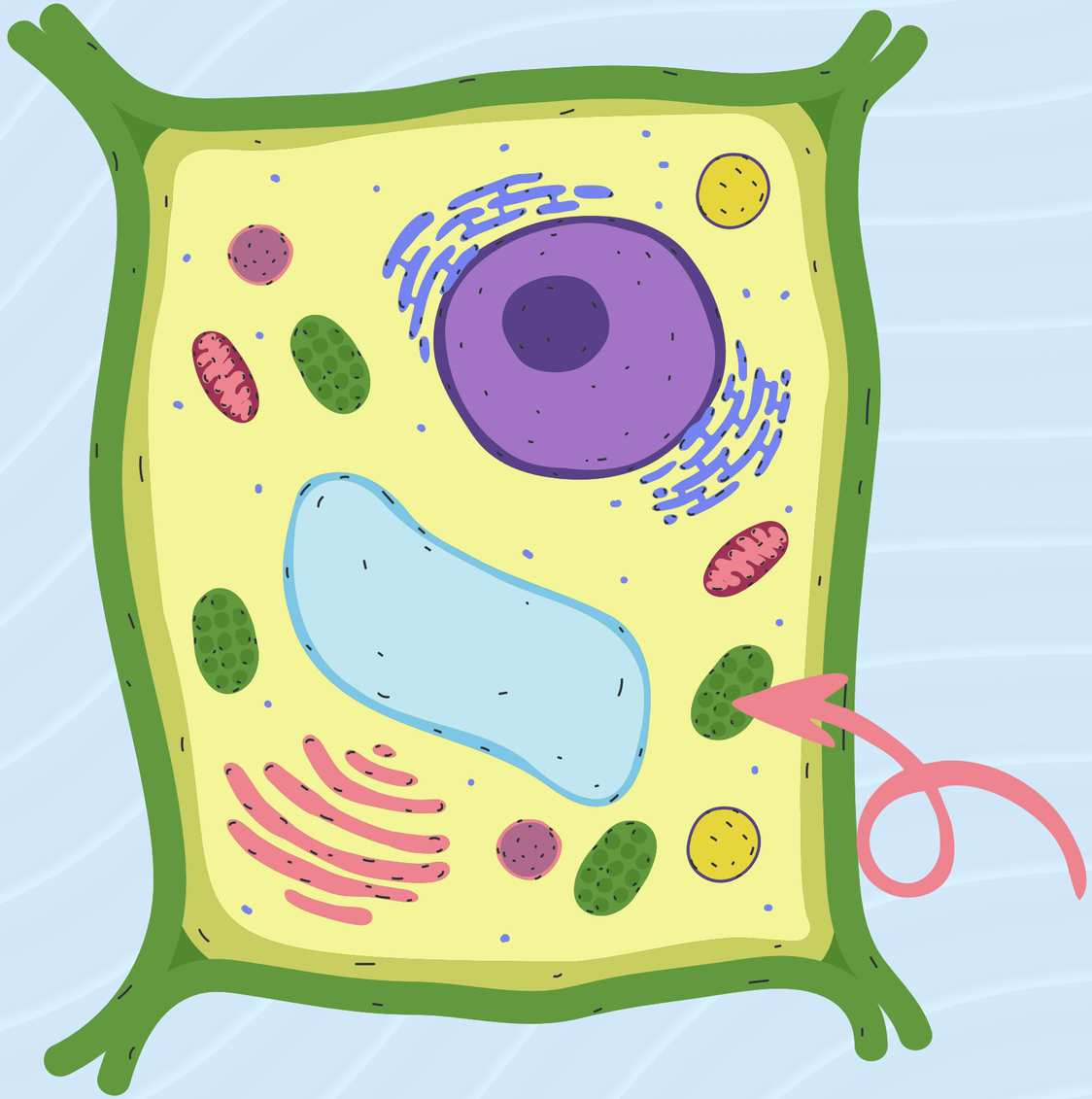
The nucleus is located near the center of the cell and contains all of the cell’s chromosomes.



NUCLEOLUS

The part of both plant and animal cells that is found inside the nucleus.

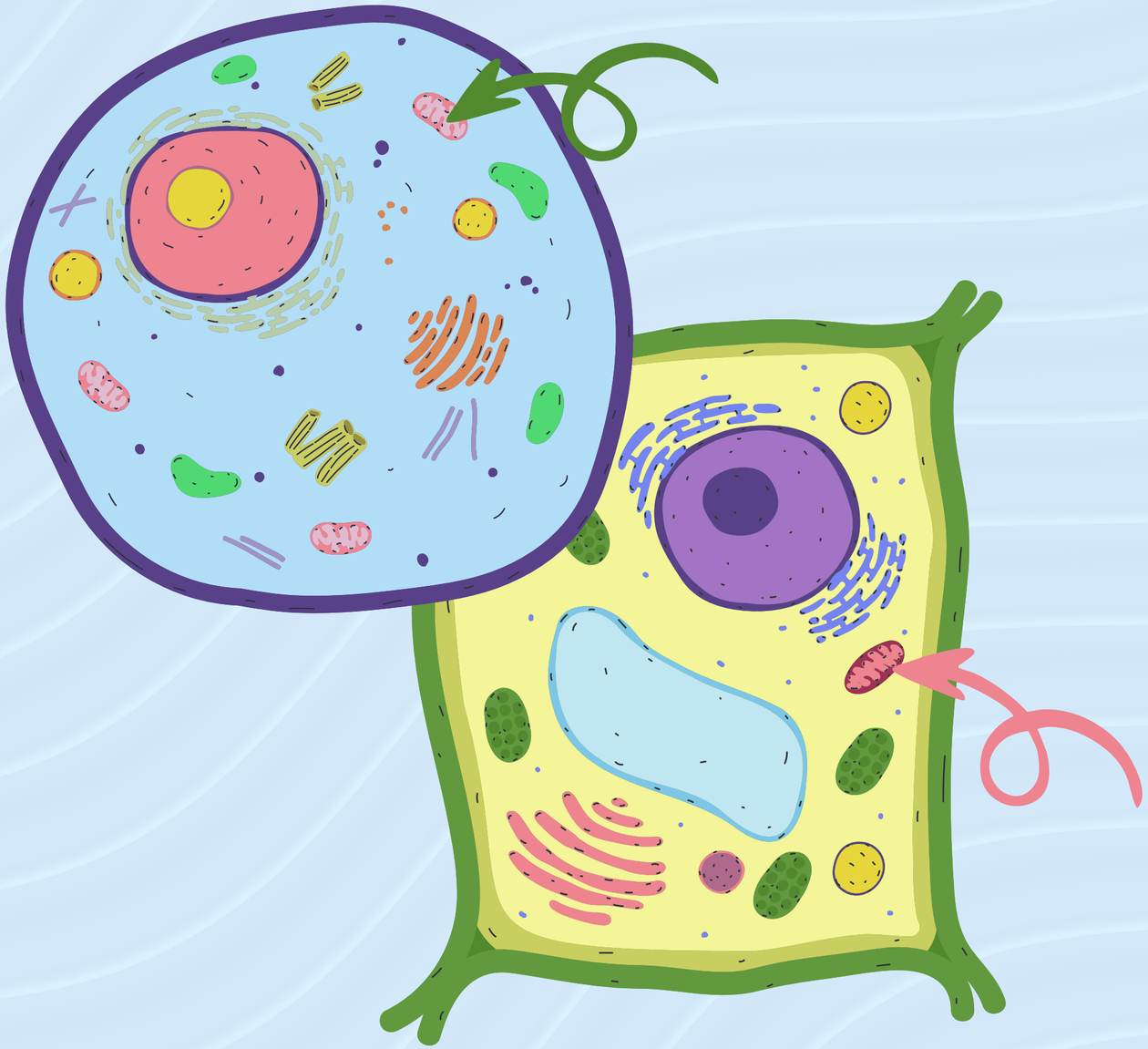
The nucleolus is made of RNA and protein. It looks like a nucleus inside of a nucleus.



CHLOROPLAST

Converts light energy of the sun into sugars that can be used by cells.

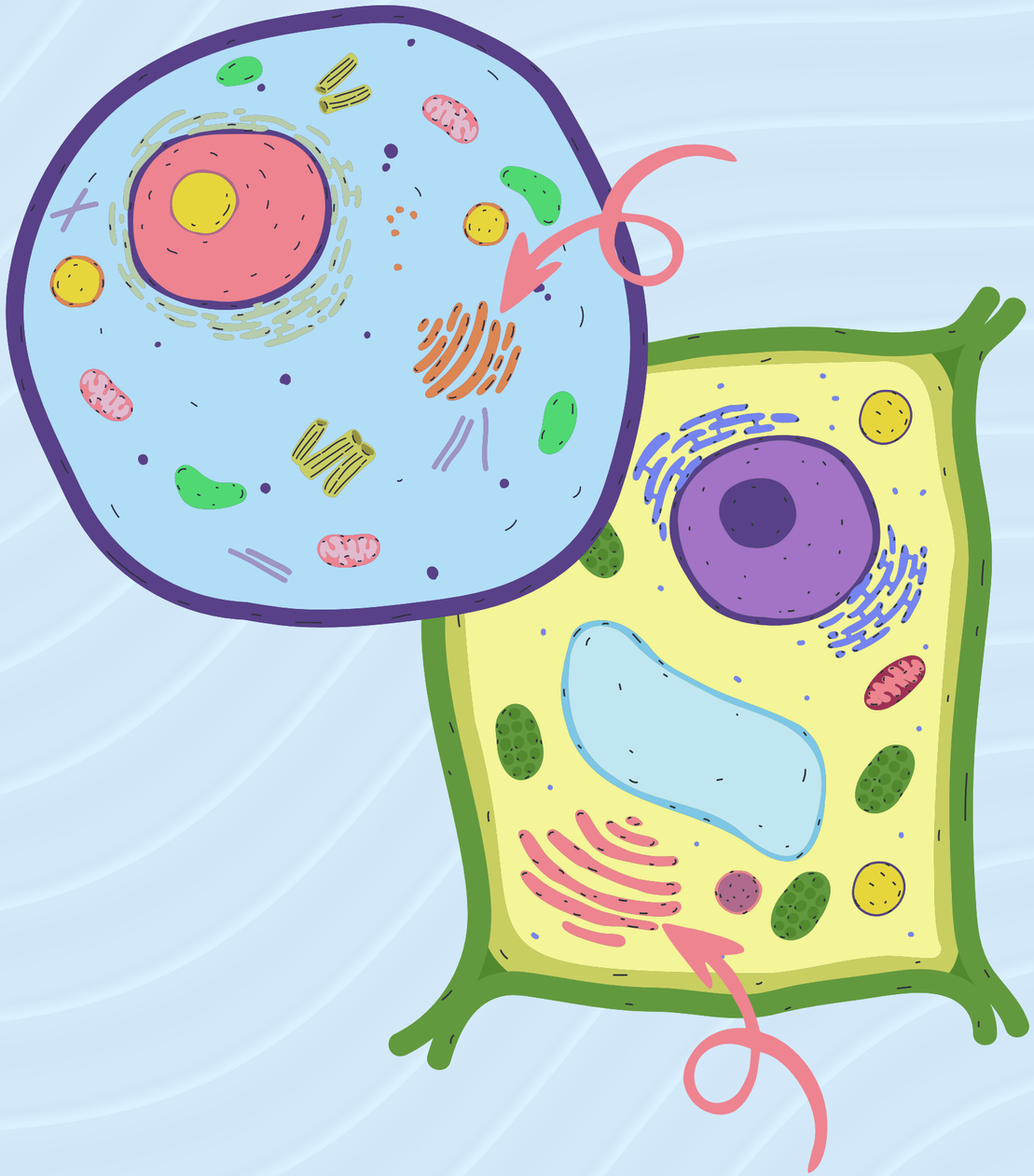
Chloroplast is the organelle where photosynthesis takes place and is only found in plant cells.



MITOCHONDRIA

Performs cellular respiration, or the process in which nutrients are broken down and turned into energy the cell can use.

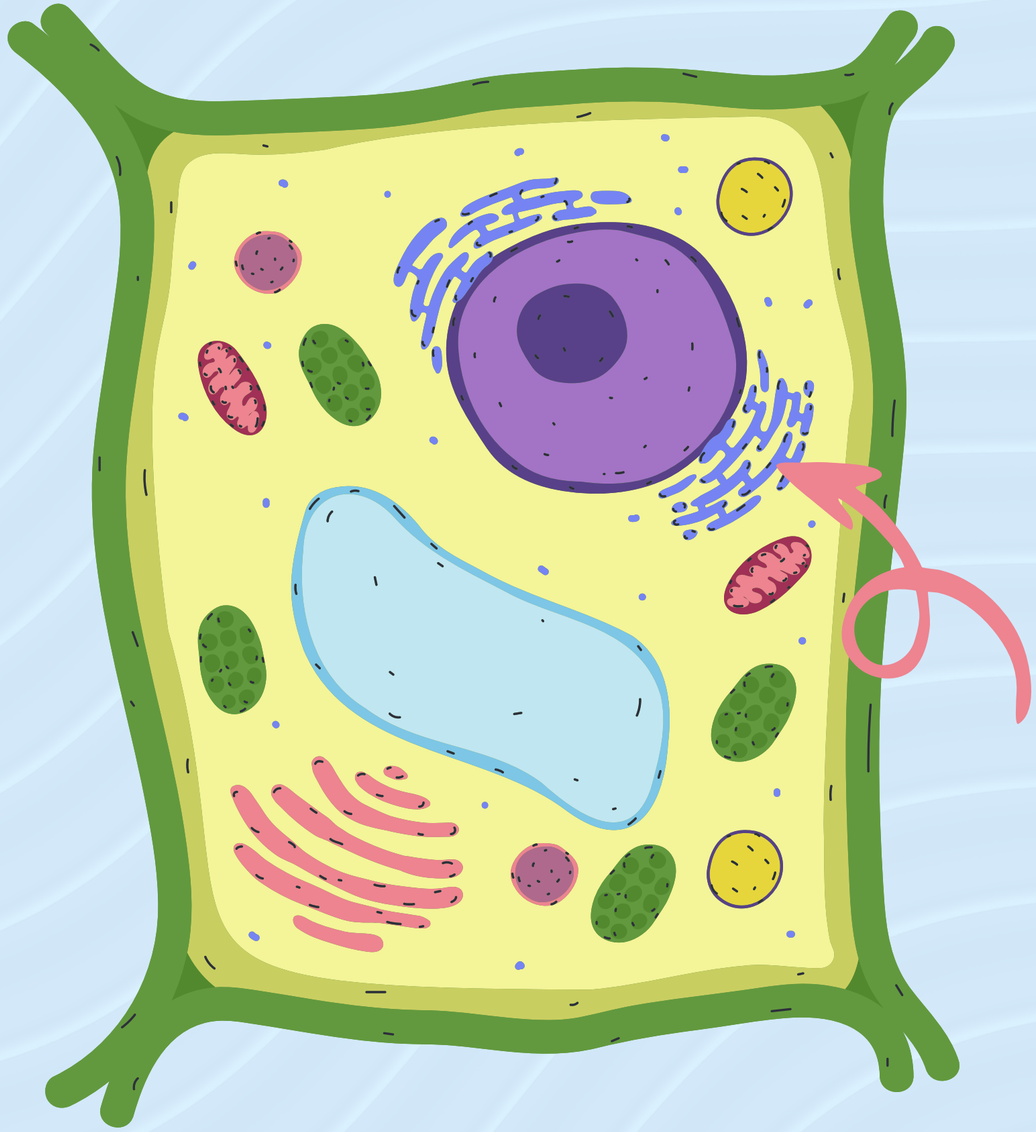
Mitochondria is found in both plant and animal cells and is known as the “powerhouse” of the cell.



GOLGI APPARATUS

Turns combinations of molecules into new, more complex molecules and then sends them out of the cell or stores them.

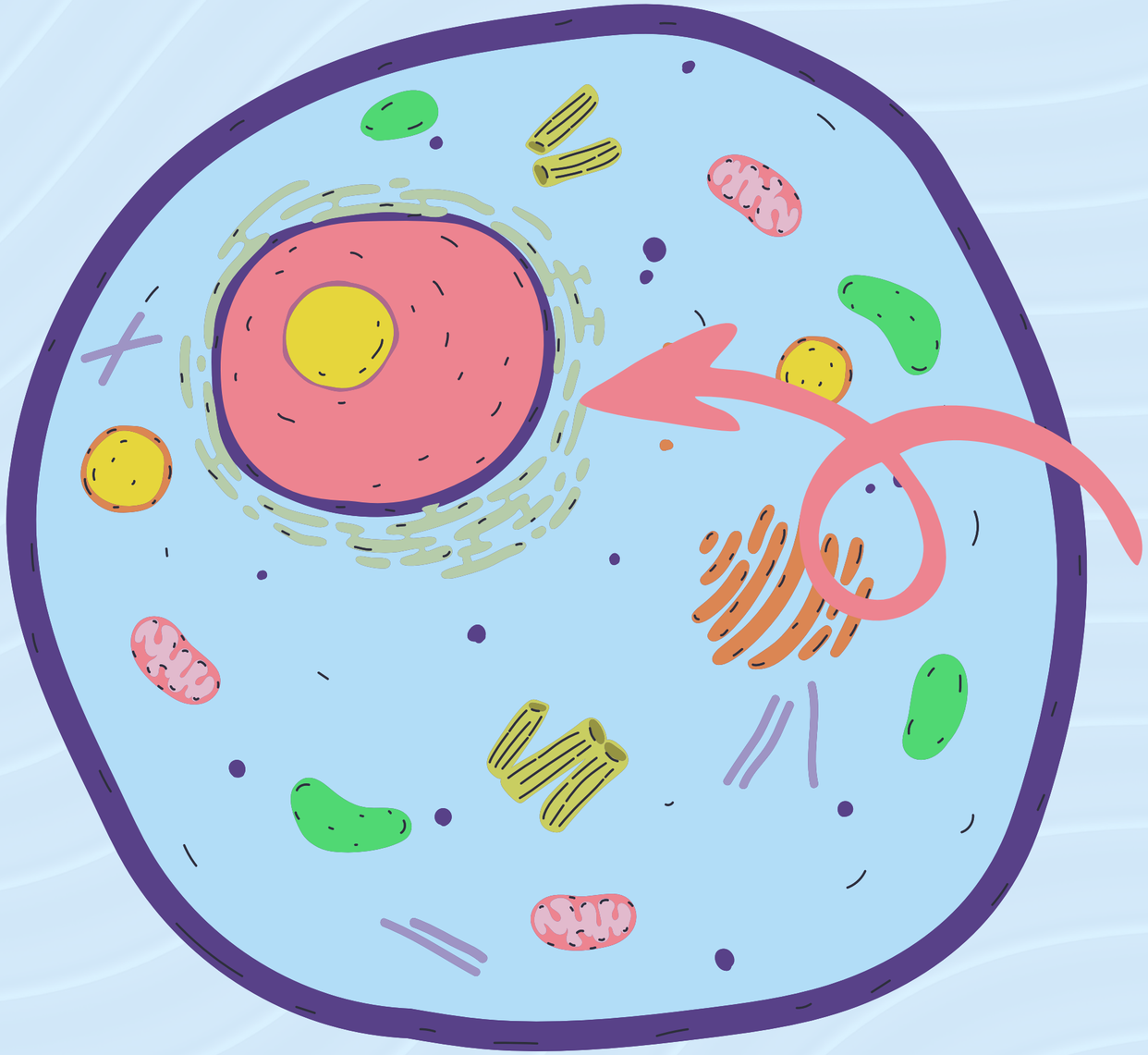
Golgi apparatus is found in both plant and animal cells.



SMOOTH ENDOPLASMIC RETICULUM (E.R.)

An organelle attached to the nucleus that's important in the creation and storage of lipids.

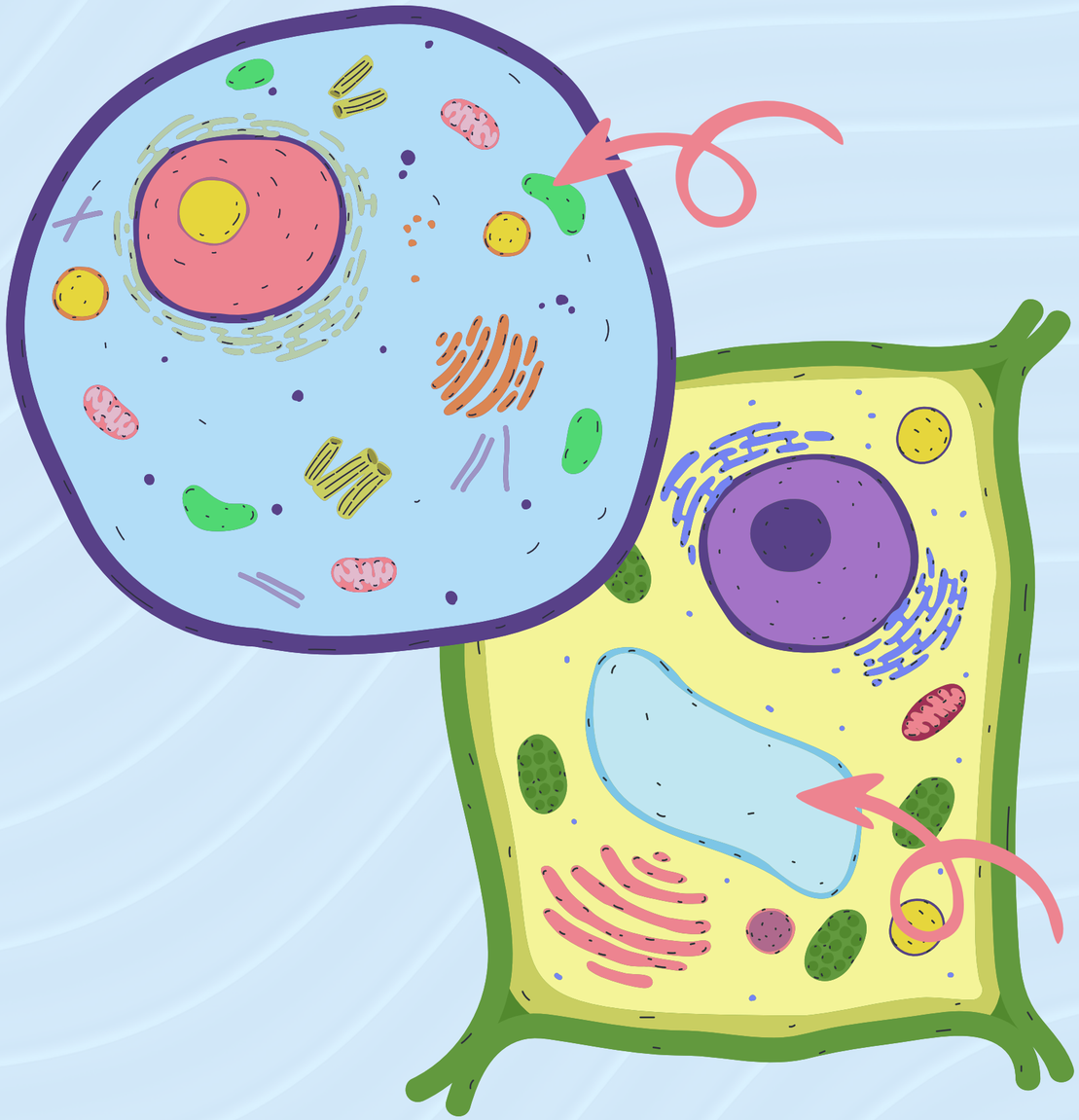
Smooth E.R. is found in both plant and animals cells and looks like a group of tubes.



ROUGH ENDOPLASMIC RETICULUM (E.R.)

Works with ribosomes attached to it to help with the synthesis and packing of proteins.

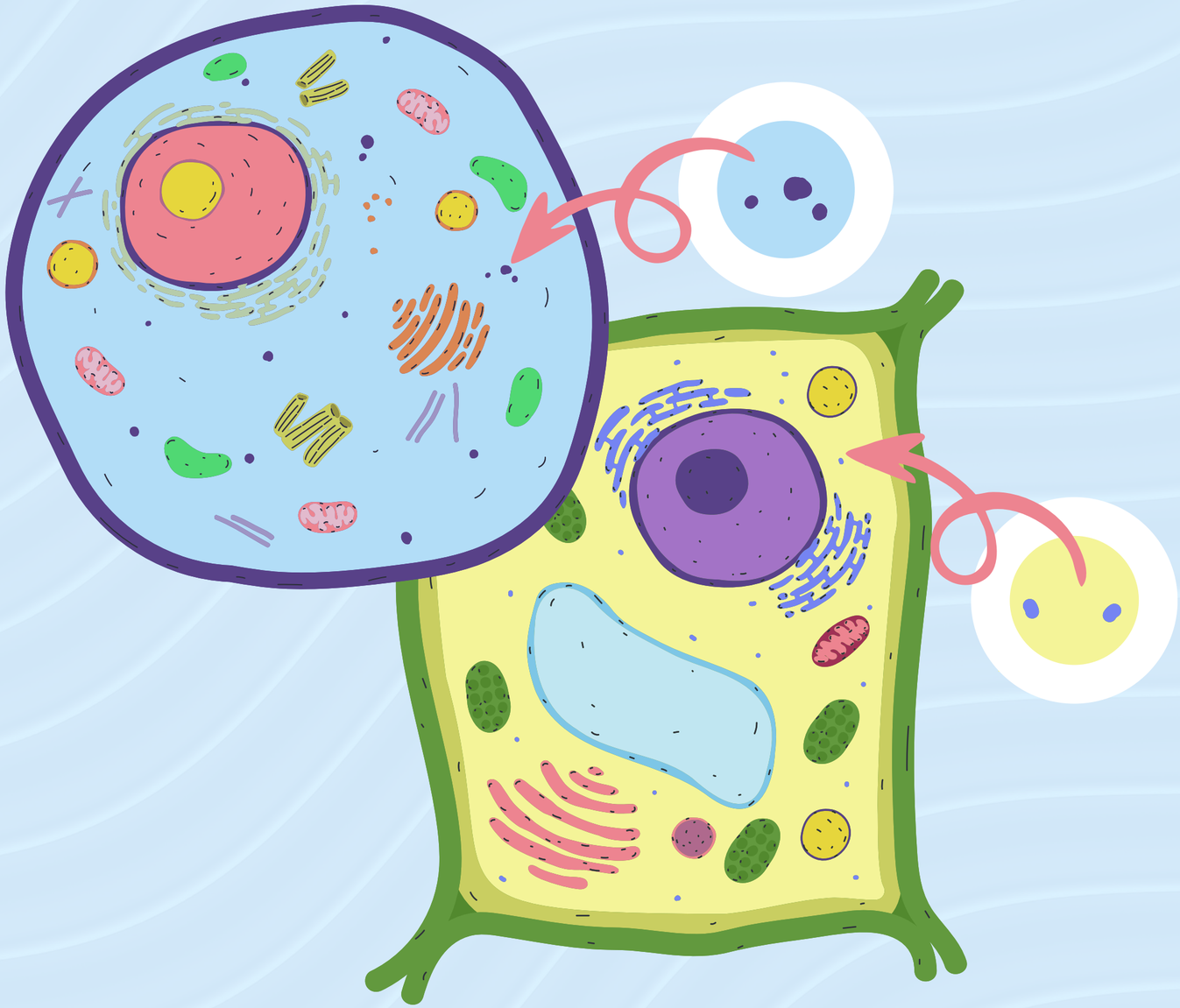
Rough E.R. is found in both plant and animal cells and looks like sheets of bumpy membranes attached to the nucleus.



VACUOLE

A storage bubble that stores food and nutrients the cell needs to survive.

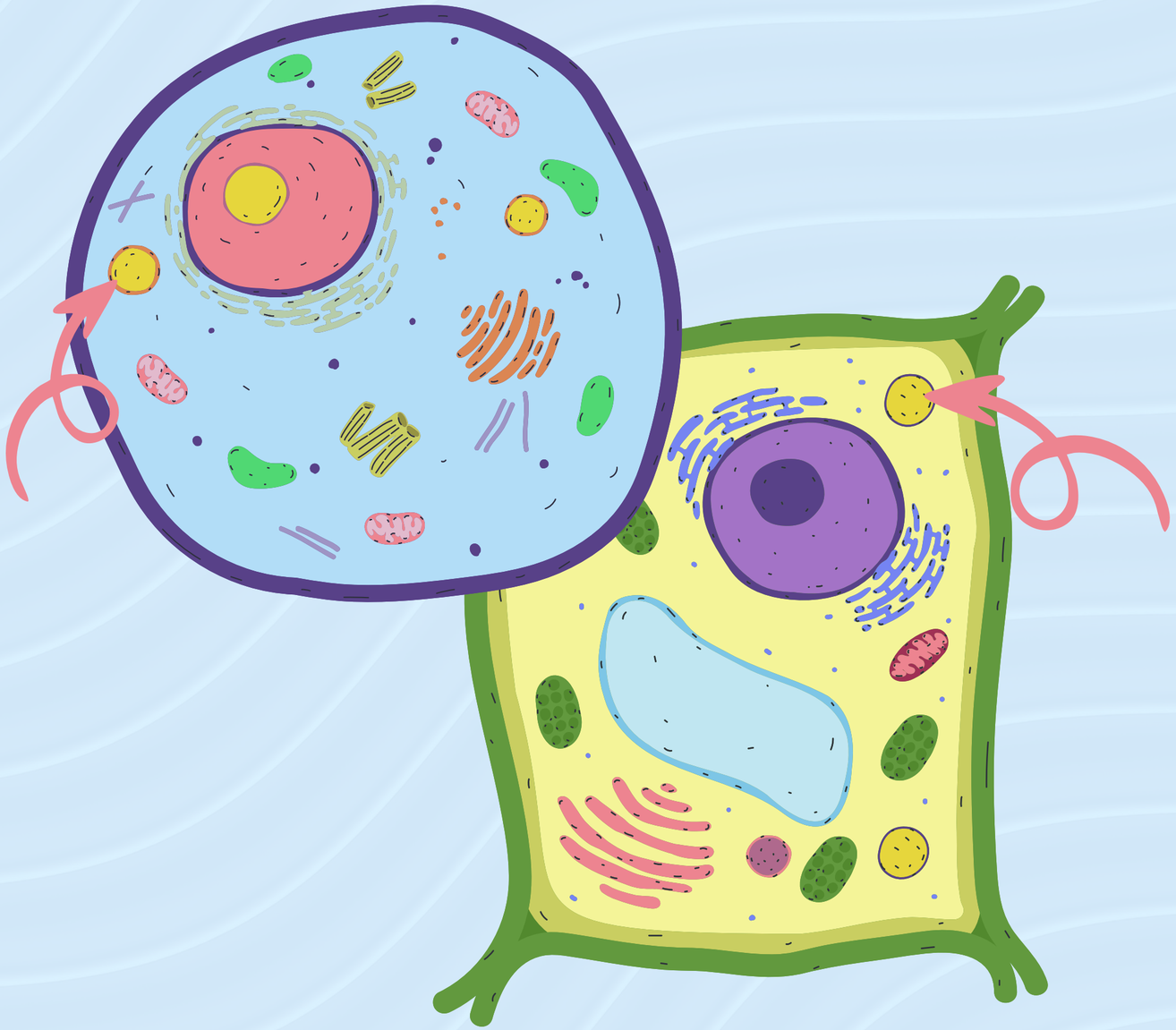
Vacuoles are found in both plant and animal cells but are larger in plant cells.



RIBOSOMES

Small organelles that build long chains of amino acids for the cell.

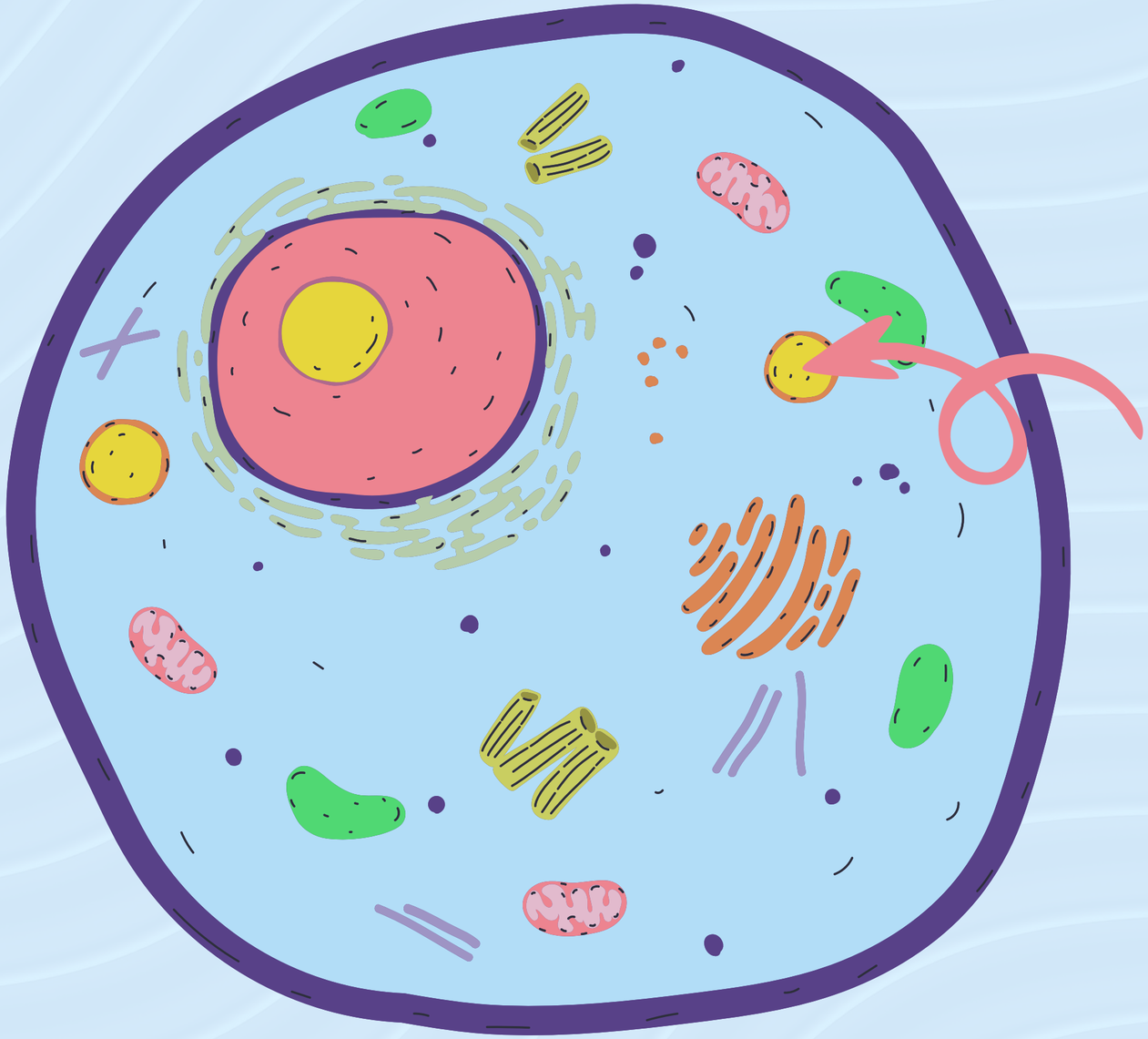
Ribosomes are found in both plant and animal cells and are known as the “protein builders” of the cell.



PEROXISOME

An organelle that digests nutrients and helps break down toxic materials.

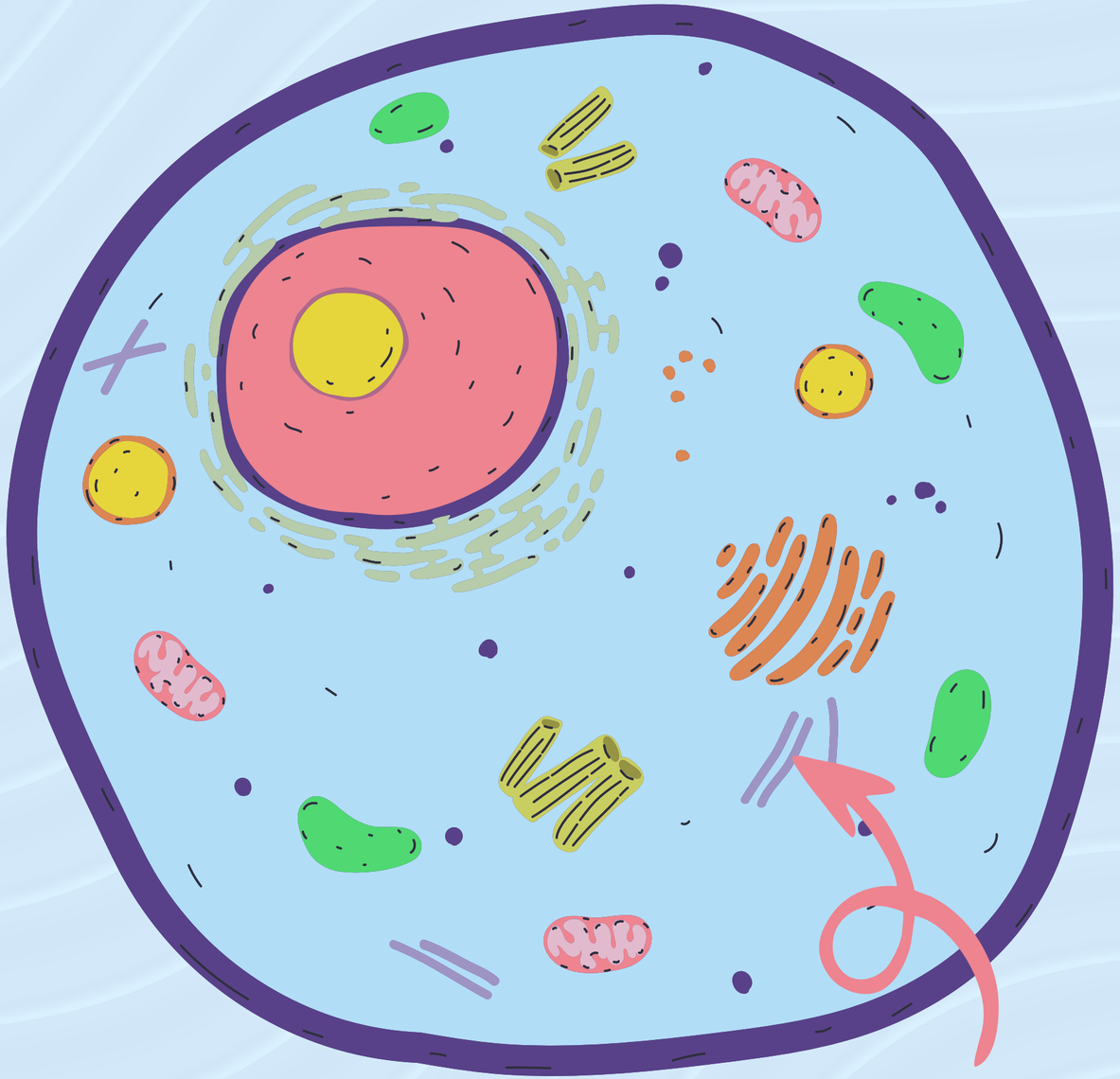
Peroxisomes are found in both plant and animal cells. They have digestive enzymes in their membranes to digest nutrients like amino acids, cholesterol, and fatty acids.



LYSOSOME

Helps digest and break down food in the cell with the help of enzymes that are stored here.

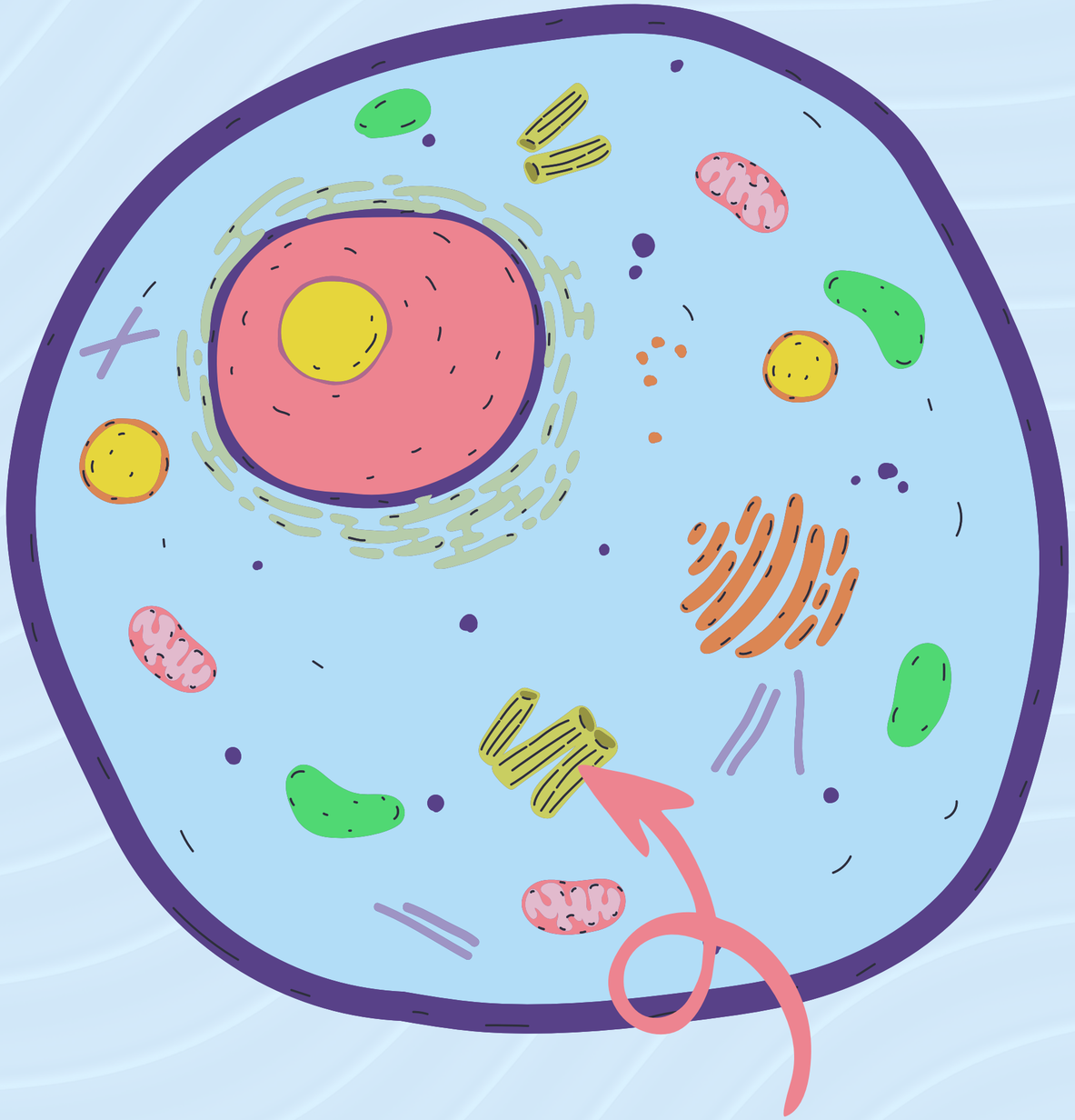
Lysosomes are only found in animal cells.



MICROTUBULES

Helps provide structure to the cell and also helps with cell division.

Microtubules are only found in animal cells.



CENTRIOLES

Helps the cell divide during mitosis and meiosis.

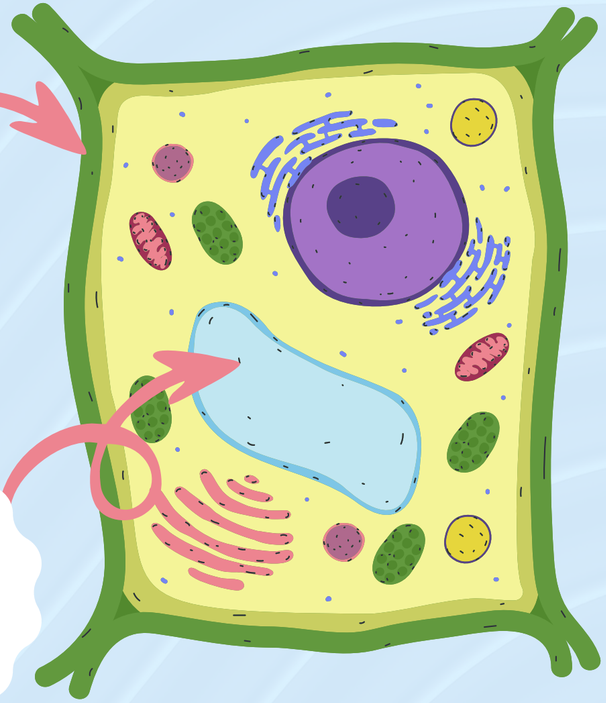
Centrioles are only found in animal cells and are made up of multiple microtubules.

THAT'S ALL OF THEM! HERE'S A QUICK TIP...

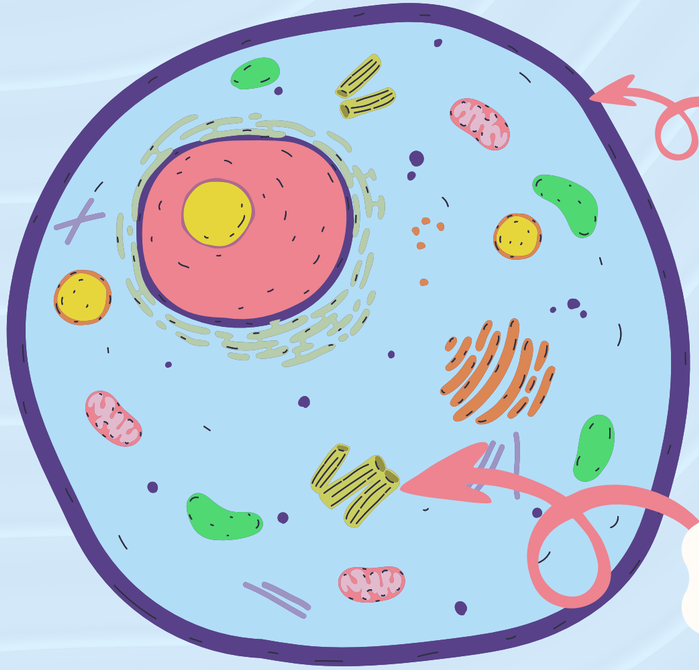
THE DIFFERENCES BETWEEN CELLS

Plant cells have cell walls.

Plant cells have larger vacuoles.



Plant Cell



Animal cells don’t have a cell wall - only a cell membrane.

Animal cells have centrioles.

Animal Cell