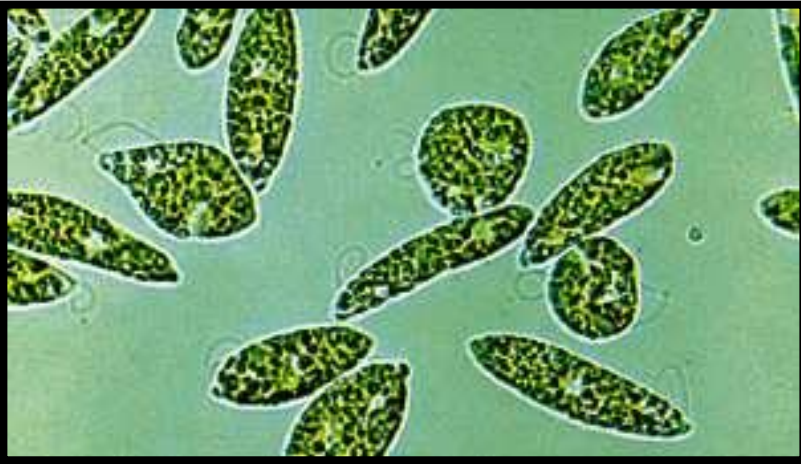


INTRODUCTION TO

CELLS

Living Things Have Organization

- As we said in Unit 1, all living things have organization and are made of cells
- Now we are going to discuss how this theory came to be and learn more about the types of cells



protist



alligator

Discovering Cells:

- ❑ The discovery of cells and their importance to life was dependent on the development of the microscope.

- **Robert Hooke (1660's):** first to describe cells in cork
- **Anton van Leeuwenhoek (1670's):** improved the microscope and observed bacteria and protozoa
- **Theodore Schwann** and **Mattias Schleiden (1830's)** developed the original cell theory
- **Rudolph Virchow (1855):** provided the last tenet of the cell theory- cells come from existing cells

Fig: I.

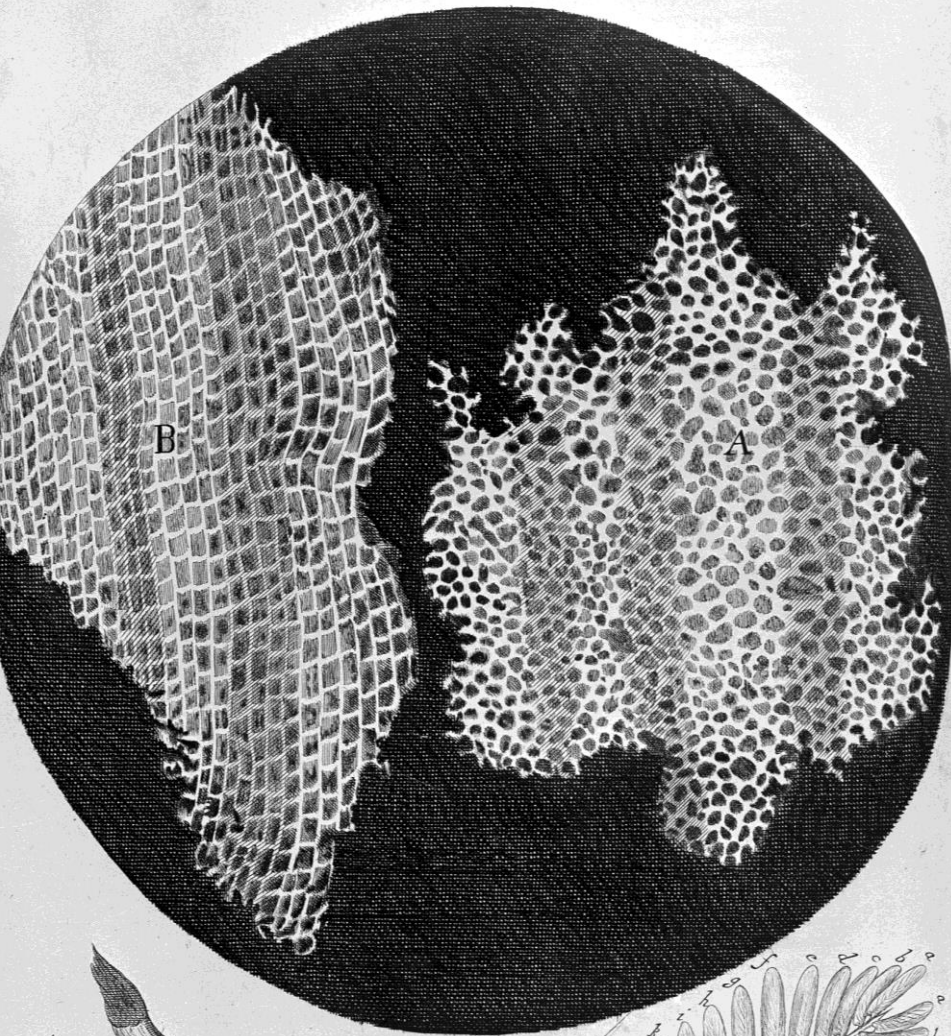
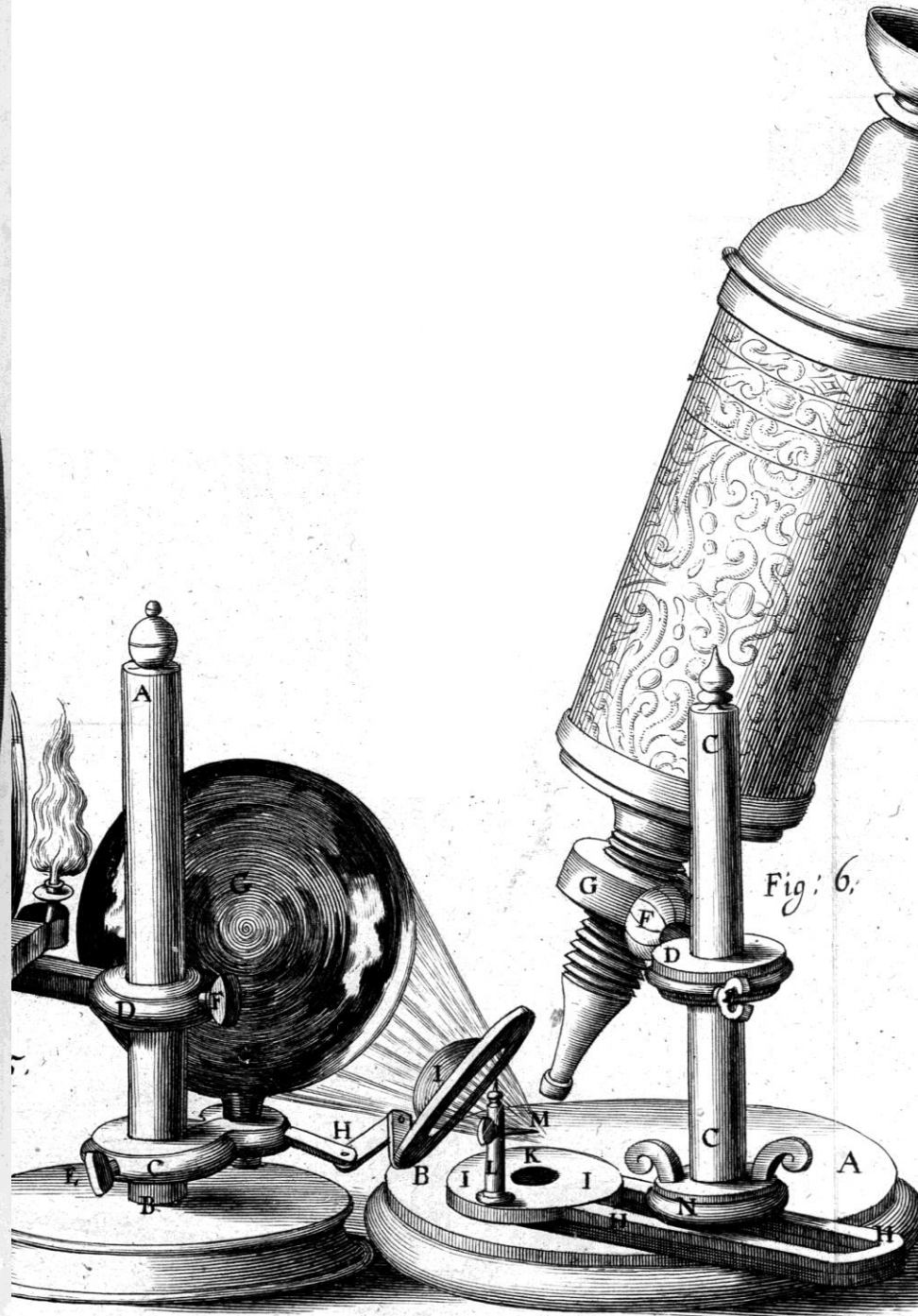
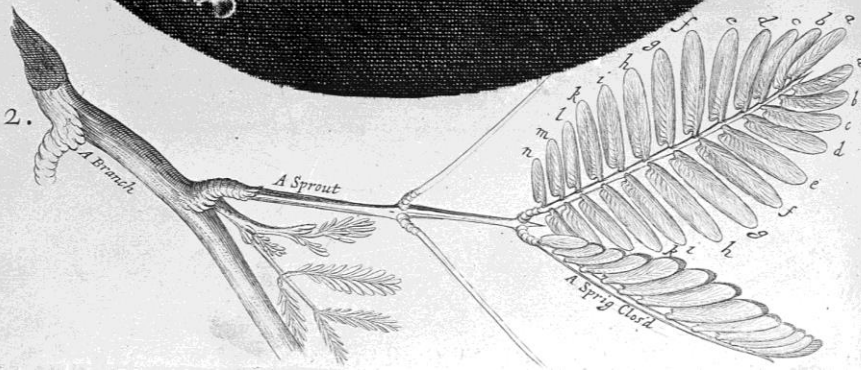


Fig: 2.



Cell Theory

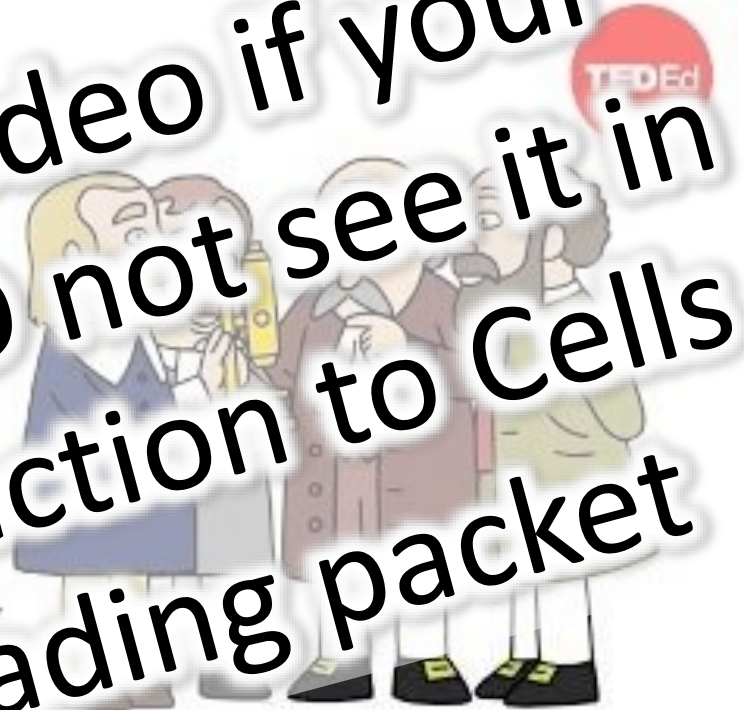
Ideas from these scientists come together to form the cell theory:

1. All living things are made of one or more cells.
2. Cells are the basic unit of life.
3. All cells come from existing cells.



Cell Theory Video

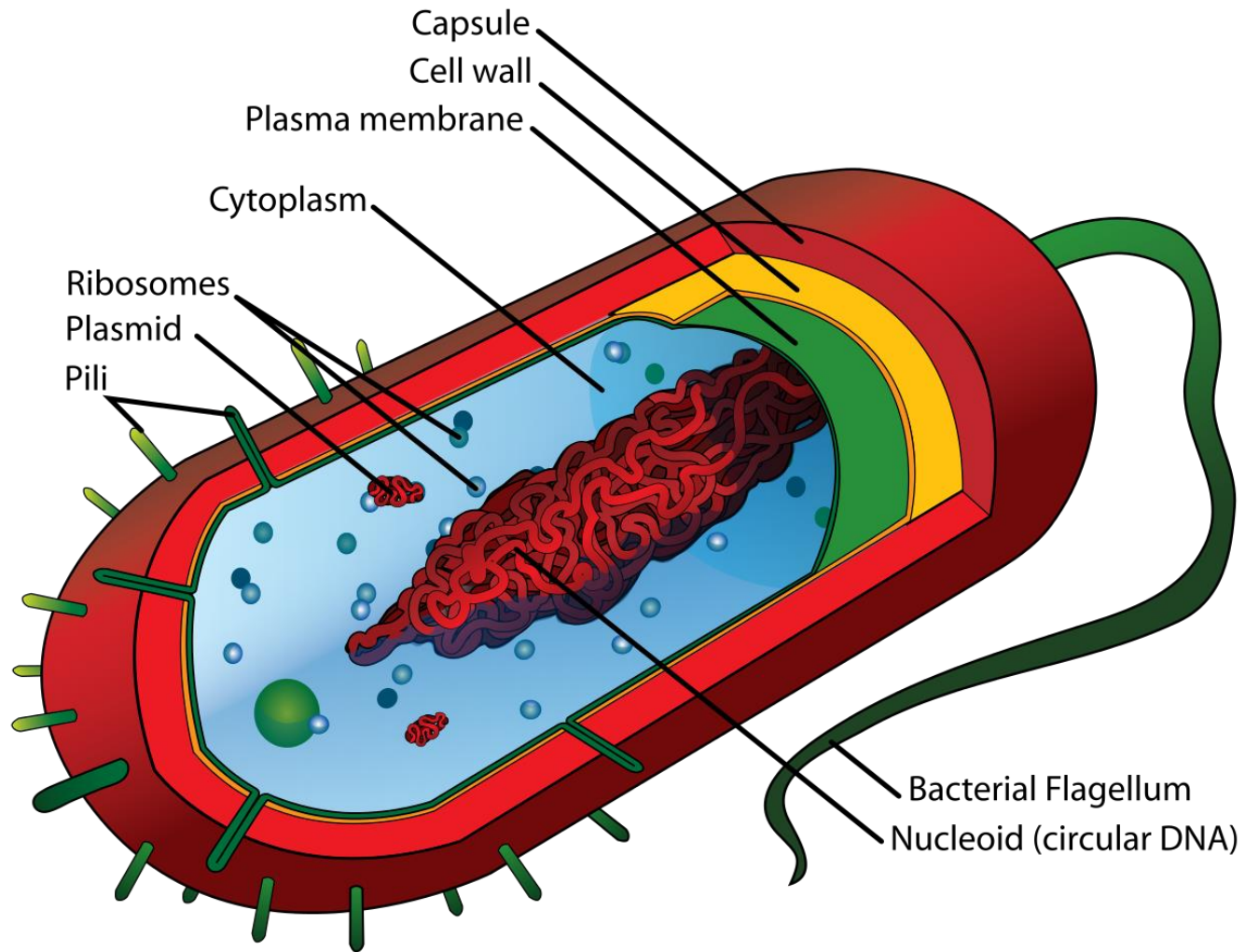
Show this video if your
students DID not see it in
the Introduction to Cells
Close Reading packet



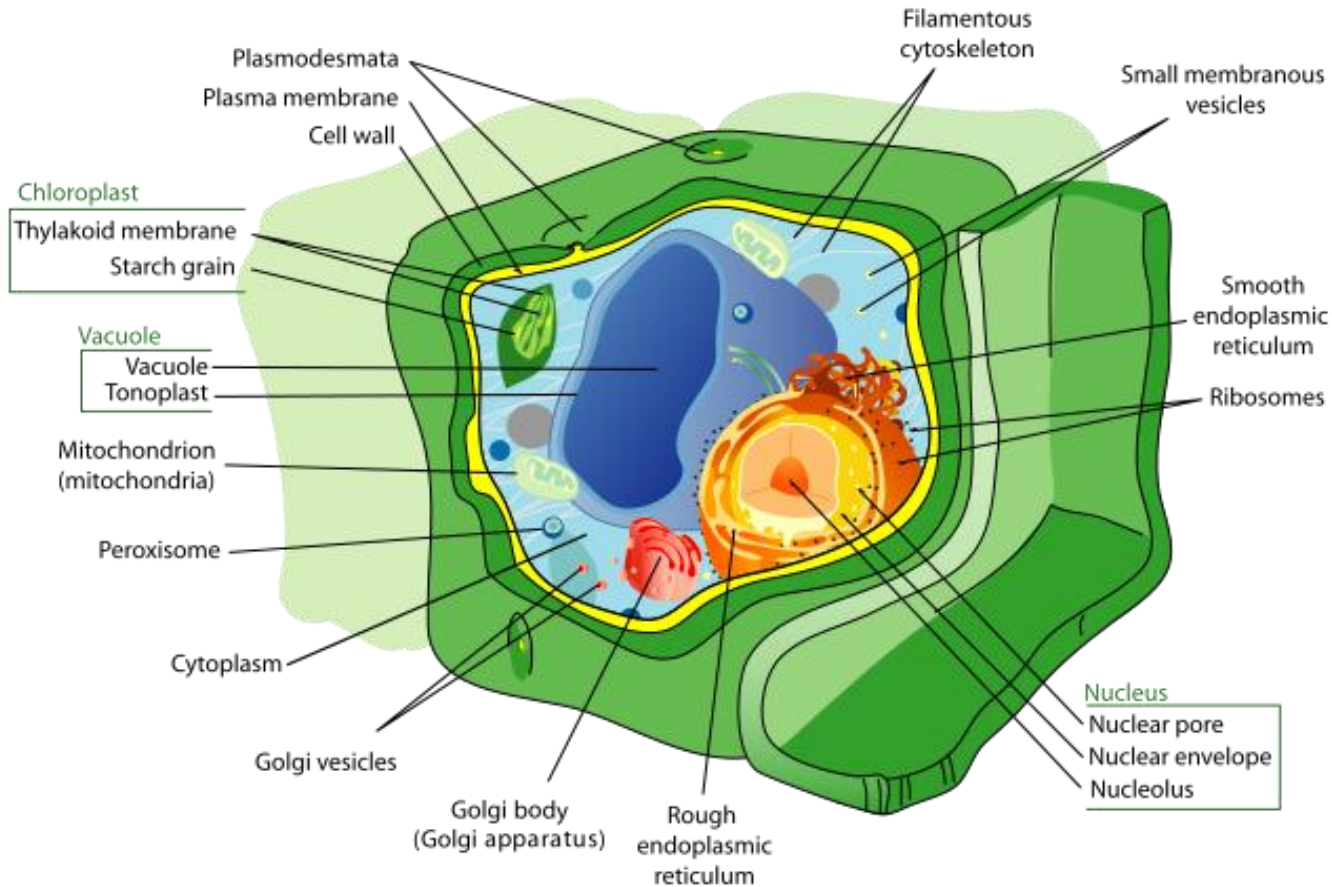
Types of Cells

Prokaryotic Cells	Eukaryotic Cells
<ul style="list-style-type: none">• Smaller	<ul style="list-style-type: none">• Larger
<ul style="list-style-type: none">• Unicellular (always)	<ul style="list-style-type: none">• Can be unicellular or multicellular
<ul style="list-style-type: none">• No nucleus	<ul style="list-style-type: none">• Has a nucleus
<ul style="list-style-type: none">• No membrane bound organelles	<ul style="list-style-type: none">• Has membrane bound organelles
<ul style="list-style-type: none">• Circular DNA	<ul style="list-style-type: none">• Linear DNA
<ul style="list-style-type: none">• Ex: bacteria & archaea	<ul style="list-style-type: none">• Ex: plants, animals, fungi

Prokaryotic Cell- Bacteria

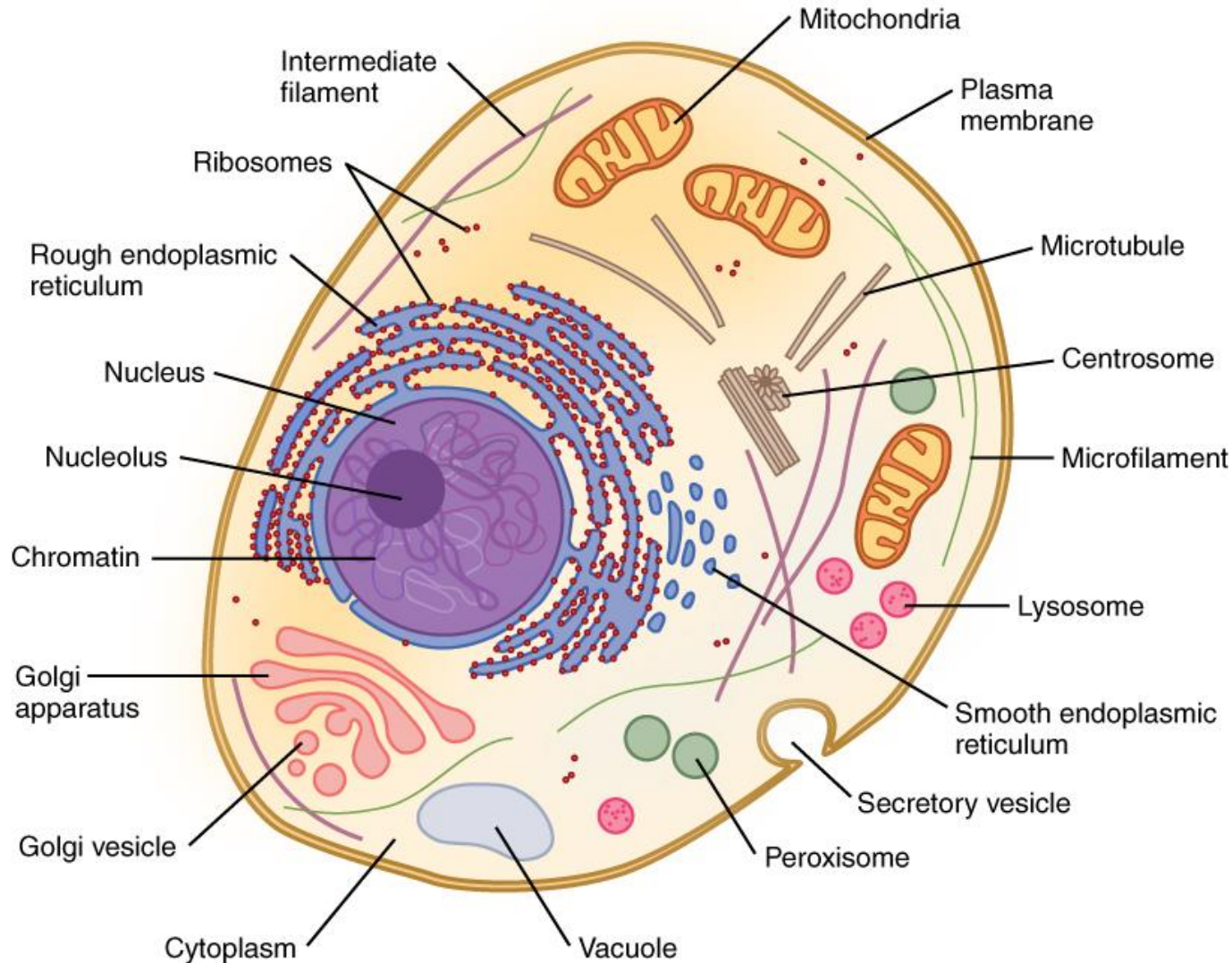


Eukaryotic Cell- Plant & Animal



Plant Cell

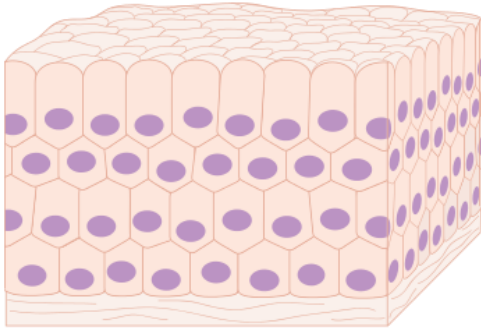
Eukaryotic Cell- Plant & Animal



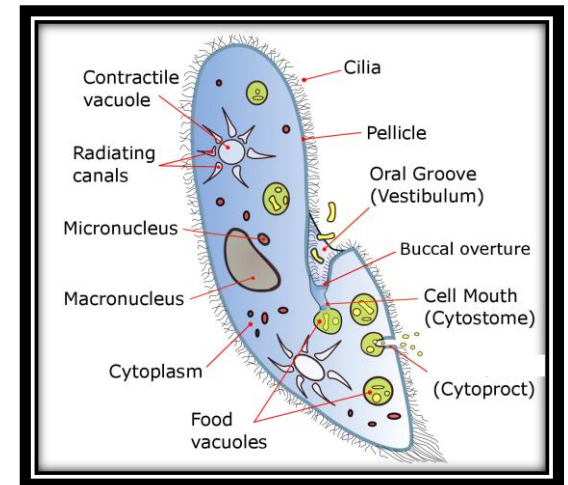
Animal Cell

Types of Organisms

- Organisms can either be made of:
 - One cell= unicellular
 - Ex: bacteria and some eukaryotes
 - Many cells= multicellular
 - Ex: plants, animals, most fungi



Many cells work together
in multicellular organisms



Organelles

- All cells have organelles
- **Organelles**- small structures inside a cell that have specific functions
 - “mini organs”
- You will learn some of the main organelles, their function, and the type of cells they are found in.

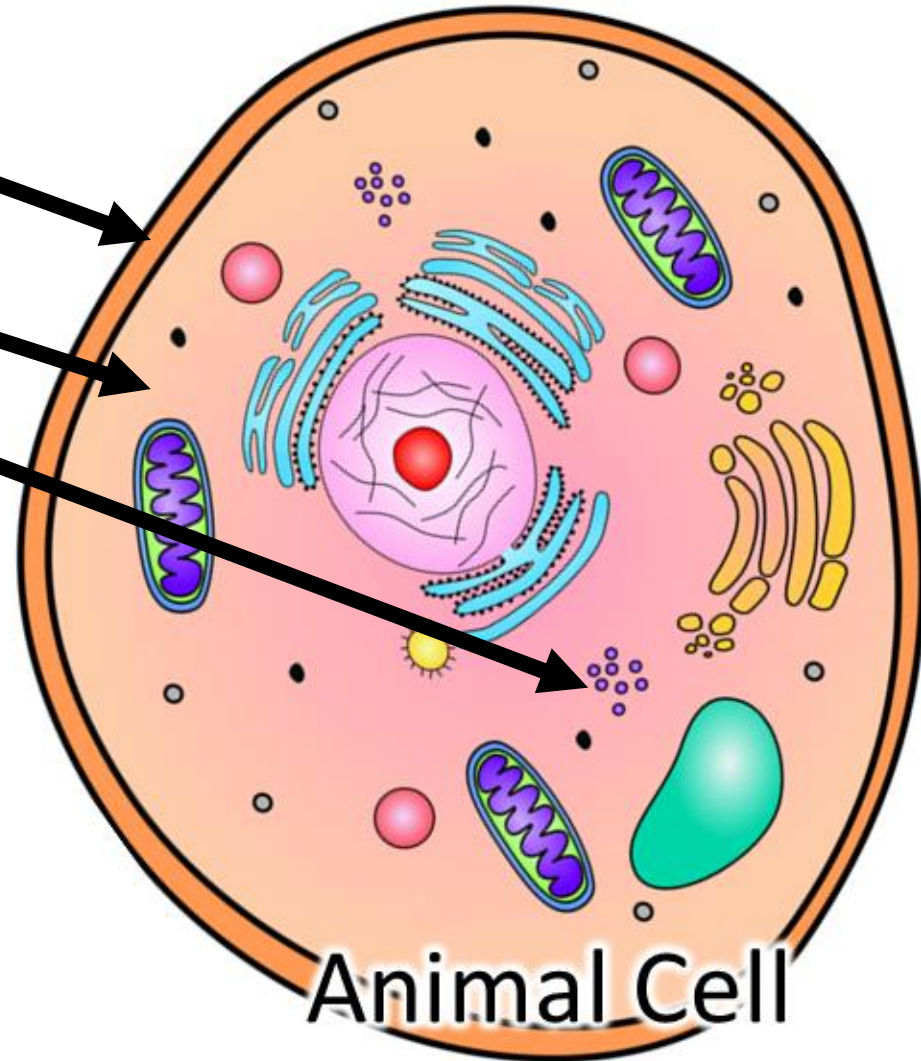
Do you remember any organelles?

Organelles in ALL Cells

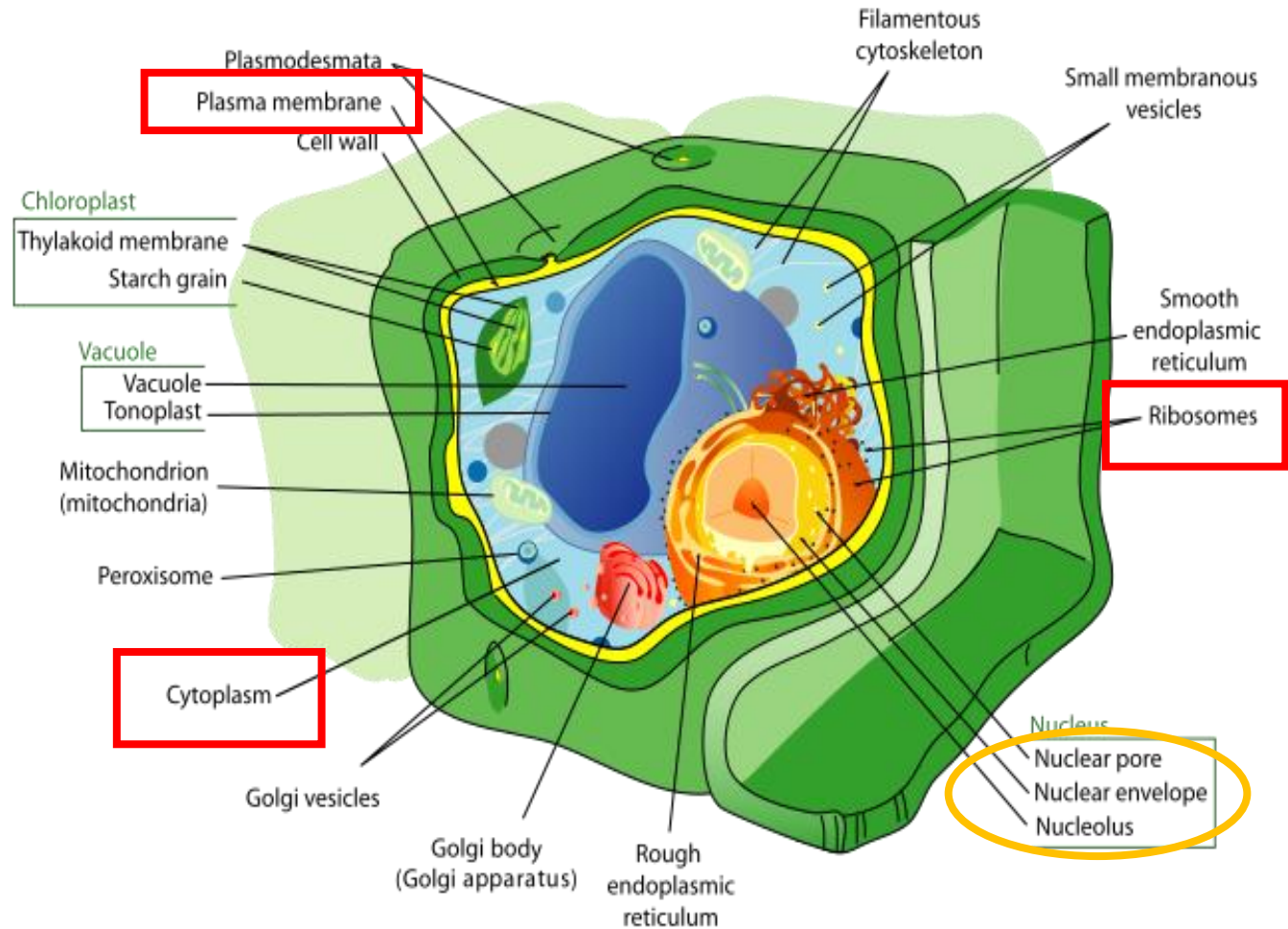
- Cell membrane
- Cytoplasm
- Ribosomes

Also found in all cells

- DNA
 - Found in different places



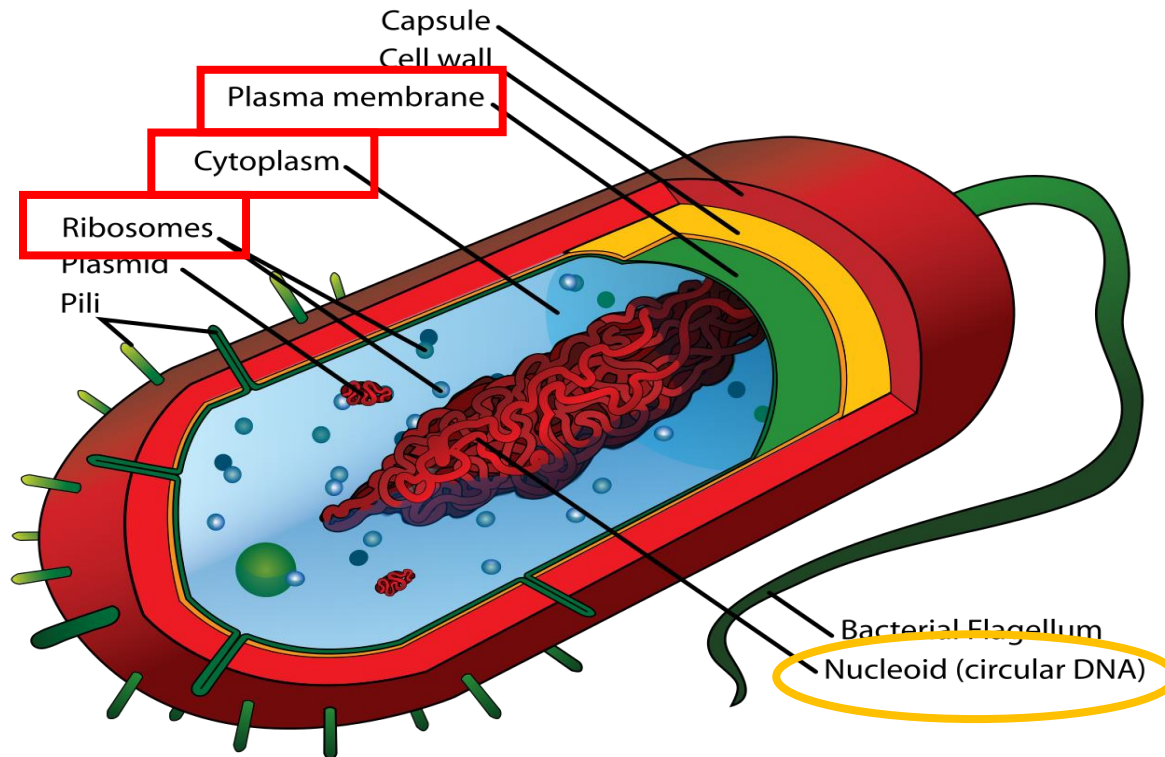
Plant Cell



Bacteria Cell

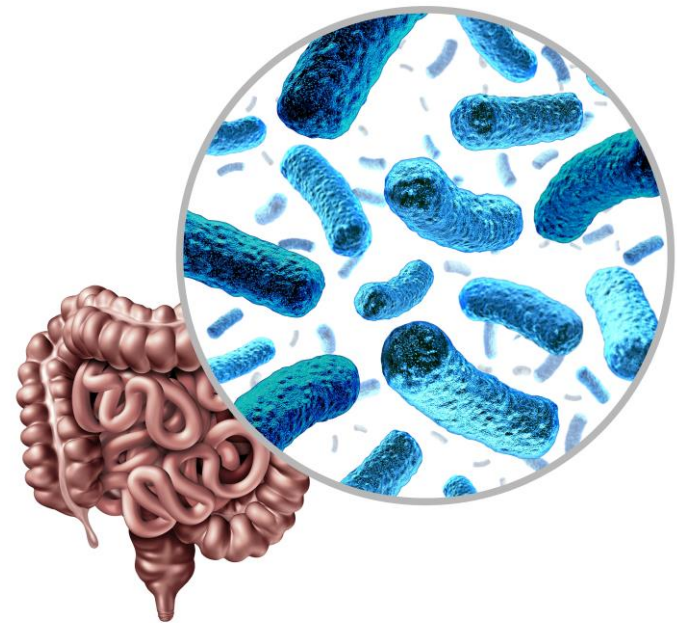
Organelles common
to all cells

DNA



Microbiome

- Did you realize that you are covered in prokaryotic microbes?
- Most of these prokaryotes are beneficial to you!
- Have you heard of probiotics?
- There is a community of these microbes that live in your “gut” (AKA intestines) = microbiome
- Research is beginning to show just how important this eukaryotic-prokaryotic interaction is for our health.



Let's Learn More!



- Click to watch about our [MICROBIOME](https://youtu.be/5DTrENdWvvM)
- Link: <https://youtu.be/5DTrENdWvvM>