

Cells

The Basic Unit of Life

Prokaryotic Cells and Eukaryotic Cells

The first living organisms on Earth were made of a **single cell**. These organisms are called **prokaryotes**. **Prokaryotic** organisms are made of one **prokaryotic cell**. Prokaryotes are **unicellular** and they consist of:

Bacteria—the first domain of life

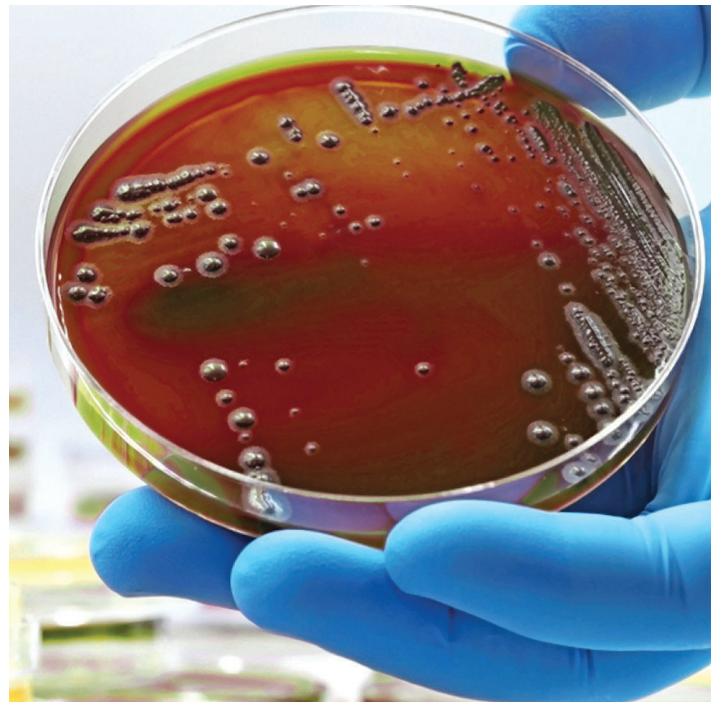
Archaea—the second domain of life

- Prokaryotic cells are always unicellular
- Prokaryotic cells lack a nucleus
- Prokaryotic cells lack membrane-bound organelles
- Prokaryotic cells are very small and it is not possible to see the inner cell without an electron microscope

Common Examples of Prokaryotic Cells:



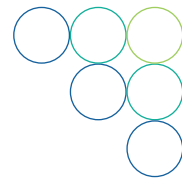
Escherichia Coli (E. Coli)



Streptococcus

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Cells



All other organisms are called **eukaryotes**.

Eukaryotic organisms consist of **animals, plants, fungi, and protists**.

They can be **unicellular** or **multicellular**.

Eukaryotes have **eukaryotic cells** and are called:

Eukarya—the third domain of life

- Eukaryotic cells can be unicellular or multicellular
- Eukaryotic cells have a nucleus with DNA
- Eukaryotic cells have membrane-bound organelles
- Eukaryotic cells are 100 to 10,000 times larger than prokaryotic cells and it is possible to see some organelles and functions with a compound microscope.

Common Examples of Multicellular Eukaryotic Cells:



Ferns



Cats



Starfish

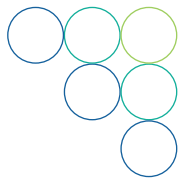


Humans



Sea Turtles

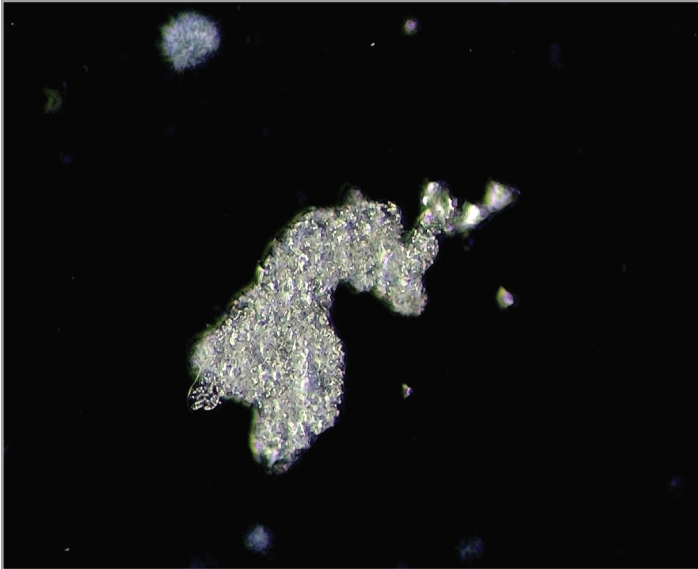
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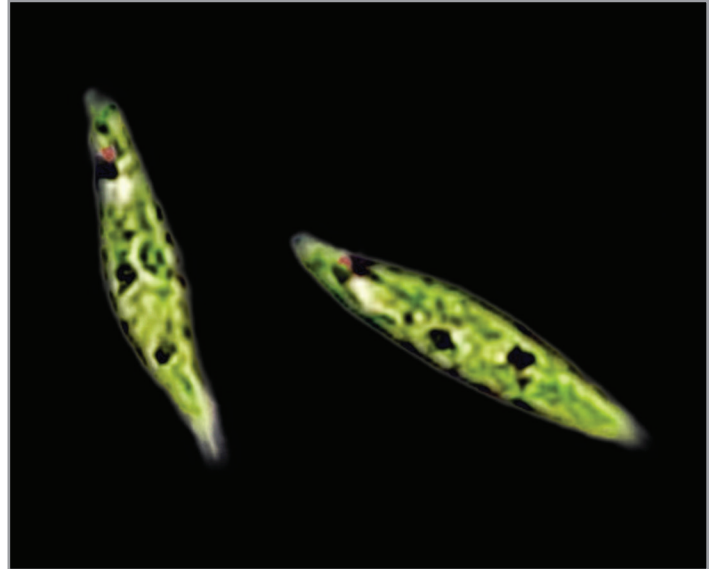
Unicellular Eukaryotic Cells

These are single-celled protists that make up only around 3% of eukaryotes. They are microorganisms that can be found in pond water.

Common Examples of Unicellular Eukaryotic Cells:



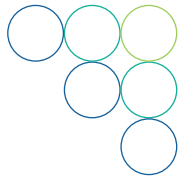
Amoeba



Euglena



Paramecium



Name: _____ Date: _____

Handout: Check Your Understanding

1. "Cells are the basic unit of life."

How would you put this phrase into your own words?

2. Based on what you read in this handout, what are 3 things eukaryotic cells have that prokaryotic cells don't have?

3. There were a few examples of eukaryotes in this handout. List 4 more examples below.

4. You or someone you know may have been ill with strep throat before. What causes this sickness?

5. Name the 3 single-celled eukaryotes that are found in pond water.
