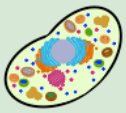
CONCEPT: PROKARYOTIC & EUKARYOTIC CELLS

- _____*karyotic* & _____*karyotic* are the *broadest & most distinct groupings of all life*.

  1) **Prokaryotic Cells**: do _____ have a *nucleus* (includes both _____ & _____).

  2) **Eukaryotic Cells**: do have a _____ & other membrane-bound *organelles*.

EXAMPLE: Prokaryotic & Eukaryotic Cells.

Domains of Life	Cell Type	Nucleus	Organelles	Cell Size	Cellularity
Bacteria	 Prokaryotic	_____	Absent	Small 1µm	_____cellular
Archaea	 _____	Absent	_____	Small 1µm	Unicellular
Eukarya	 Eukaryotic	_____	Present	**LARGE** 100µm	Unicellular or _____cellular

PRACTICE: Which domains of life are classified as prokaryotes?

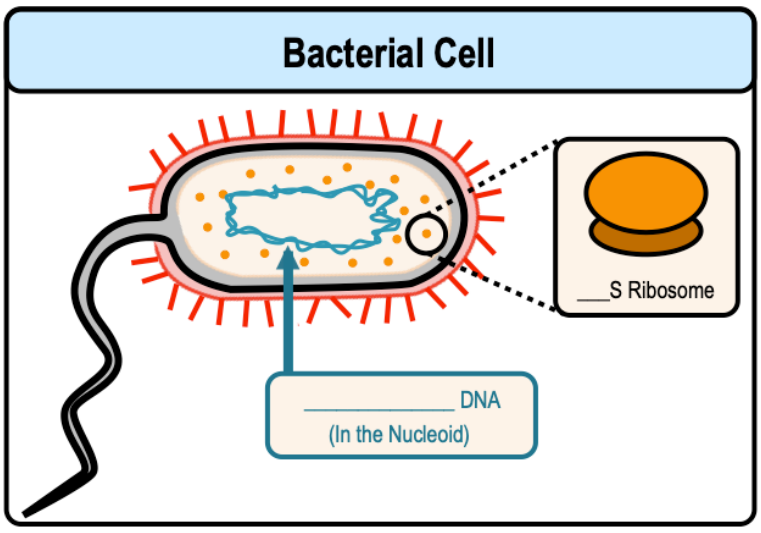
a) Bacteria & Eukarya. b) Archaea & Fungi. c) Bacteria & Archaea. d) Bacteria & Protista.

Features of Bacterial Cells

- _____ are the most abundant & diverse organism on Earth.

  □ Bacterial DNA is _____ in shape & found in a region called the _____.

  □ Bacteria have small (_____S) *ribosomes* & divide by _____ *fission*.



PRACTICE: In bacteria, DNA will be found in _____.

a) A membrane-enclosed nucleus. b) Mitochondria. c) The nucleoid. d) Ribosomes.

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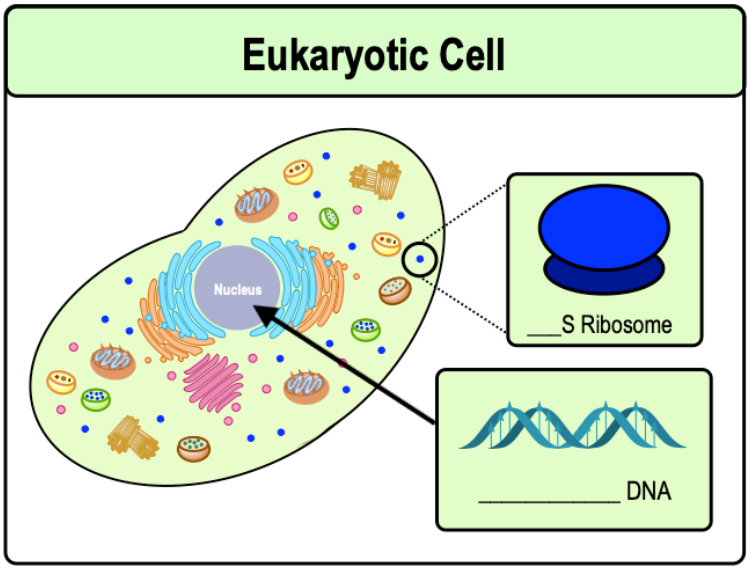
Features of Eukaryotic Cells

●Eukaryotic cells contain several *membrane-bound* organelles, including a _____.

□ Eukaryotic DNA is _____ in shape & found _____ of the *nucleus*.

□ Eukaryotes have *large* (_____S) ribosomes & divide by _____ & *cytokinesis*.



PRACTICE: Which organelle packages the genetic/hereditary material in eukaryotes but not in prokaryotic cells?

a) Nucleus. b) Mitochondria. c) Chloroplasts. d) Nucleolus.

Recap: Prokaryotic vs. Eukaryotic Cells

●Prokaryotic & Eukaryotic cells have _____ key differences:

Prokaryotic Cells	BOTH	Eukaryotic Cells
1. ____ Nucleus	Have a Cell Membrane	1. Has a **Nucleus**
2. Size: **Smaller** (1-10 µm)	Contain the major Biomolecules: - Carbohydrates - Proteins - Nucleic Acids - Lipids	2. Size: **Larger** (10-100 µm)
3. **Less** Complex		3. **More** Complex
4. Only _____cellular		4. **Uni**cellular or _____cellular
5. _____ DNA		5. **Linear** DNA
6. _____ membrane-bound organelles		6. **Has** membrane-bound organelles
7. Cell Division: **Binary Fission**		7. Cell Division: _____
8. Small _____ Ribosomes		8. Larger **80S** Ribosomes

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PRACTICE: Which of the following is/are a primary difference(s) between all prokaryotes and eukaryotic cells?

a) Prokaryotes have DNA that floats freely in the cytoplasm.
b) Prokaryotes are significantly smaller than eukaryotic cells.
c) Prokaryotes do not have ribosomes like eukaryotic cells.
d) a and b.
e) a, b, and c

PRACTICE: Which of the following is not a common feature shared by all types of cells?

a) Contains DNA as the genetic material.
b) Contains a protective cell wall or cell membrane.
c) Contains a fluid-like portion called the cytoplasm.
d) Contains a nucleus that stores the genetic material.

PRACTICE: You isolate a cell with the following characteristics: (1) no nucleus, (2) a cell wall, and the cell is (3) 2 μm in size. This cell could be a/an:

a) Bacterium.
b) Plant cell.
c) Animal cell.
d) Bacterial cell or a plant cell.
e) Plant cell or an animal cell.