

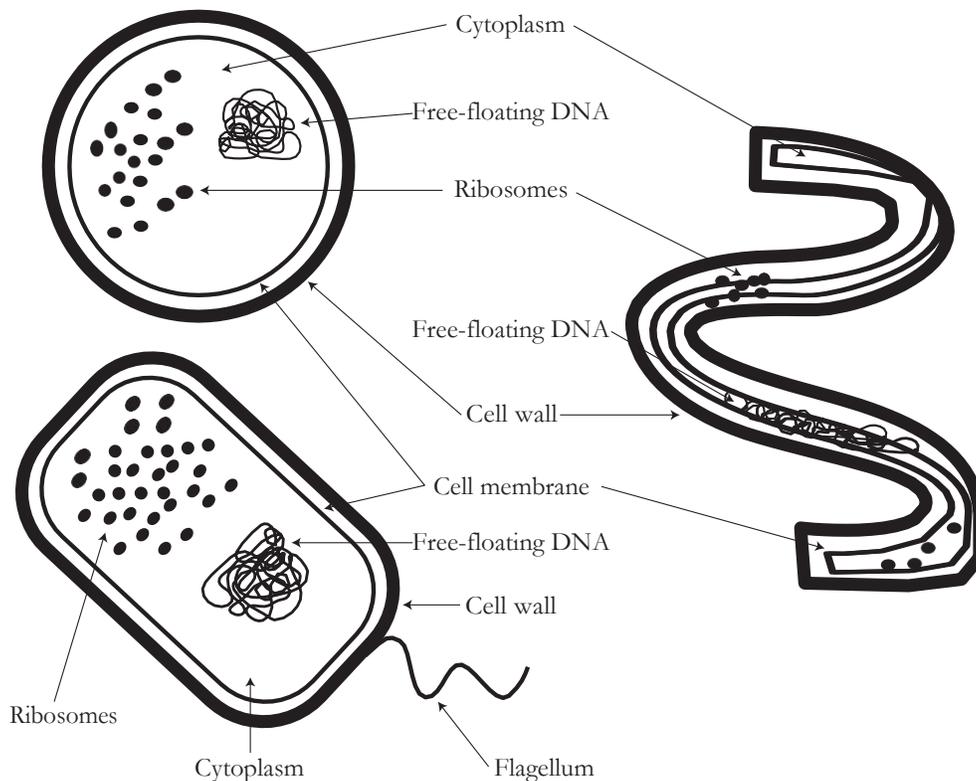
Prokaryotic and Eukaryotic Cells

Do all cells have the same structure?

Why?

An efficiency apartment is a one-room apartment. This one room is where you sleep, eat, shower, and entertain your guests. It all happens in one room. It is a simple way of living in a small space. A mansion is a large, complex living space with many separate rooms. There are rooms for cooking, eating, sleeping, bathing, reading, watching TV, entertaining guests, exercising, and storage. The rooms in a mansion are constructed for the specific things you would like to be able to do. You can live in simple efficiency or complexity. In this activity, we will be looking at cells that are as simple as a one-room efficiency apartment or as complex as a mansion.

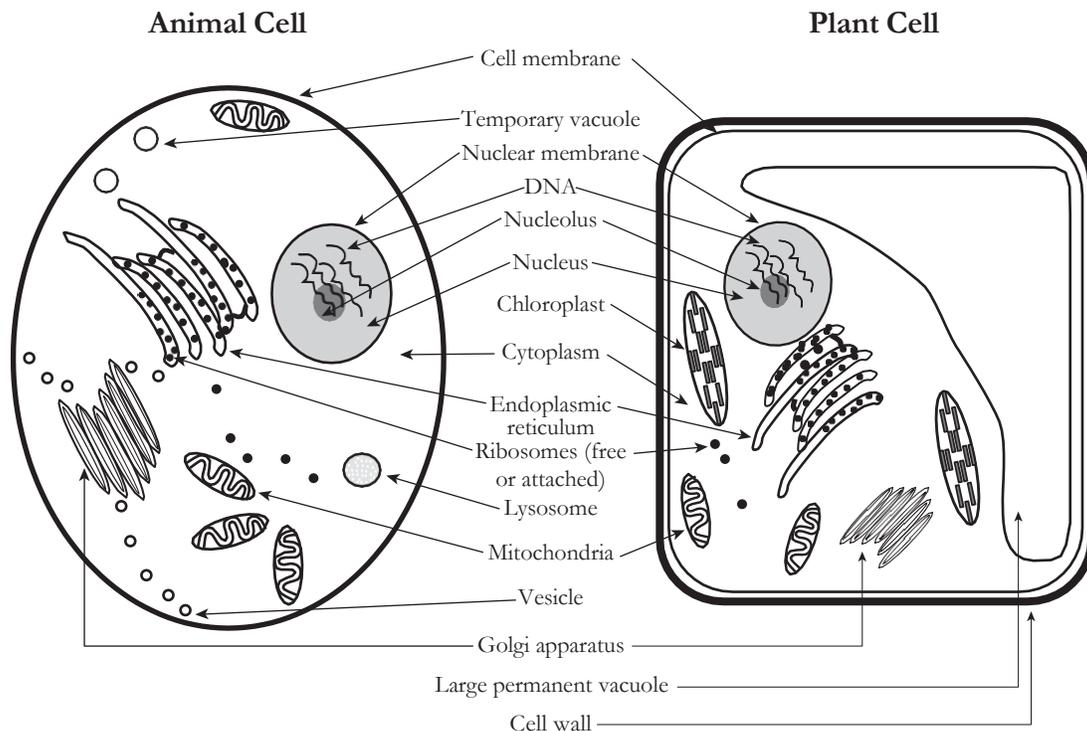
Model 1 – Three Types of Prokaryotic Cells



1. The three bacterial shapes in Model 1 are referred to as *coccus* (sphere), *spirillum*, and *bacillus* (rod). Label the diagrams in Model 1 with the correct descriptions.
2. What is represented by the small dots found in each of the bacteria cells?
3. What is the name of the outermost layer that forms a boundary around the outside of each cell?
4. How is the DNA described and what does this mean?

5. All the internal structures are suspended (floating) in what substance?
6. One of the bacteria in Model 1 has a tail-like structure.
 - a. What is this structure called?
 - b. What might be the purpose of this structure?
 - c. Based on your answer to the previous question, what might you infer about the absence of this structure in the other two bacteria cells?

Model 2 – Eukaryotic (Animal and Plant) Cells



7. Looking at Model 2, list at least three structural differences (other than shape) between an animal and a plant cell.
8. Where do you find the DNA in each cell in Model 2?
9. Do both cells in Model 2 have a nucleus?

10. List the structure(s) that form the boundary between the inside and the outside of each cell in Model 2.

11. What is different about the outermost boundary in a plant cell compared to an animal cell?

12. Refer to Models 1 and 2 to complete the chart below. Write yes or no in the box for each cell.

	Bacterial Cell	Animal Cell	Plant Cell	All Cells
Cell Membrane				
Ribosome				
Cytoplasm				
Mitochondria				
Nucleolus				
Nucleus				
DNA				
Cell Wall				
Prokaryotic				
Eukaryotic				

13. As a group, discuss the opening analogy of an efficiency apartment and a mansion as it relates to cells. Record your final consensus of how this analogy applies to cell structure.

14. What effect do you expect the structural differences between prokaryotes and eukaryotes to have on their functions? Explain in detail.