2B

CELL STRUCTURES

How do the parts of a cell work together?

2B Questions

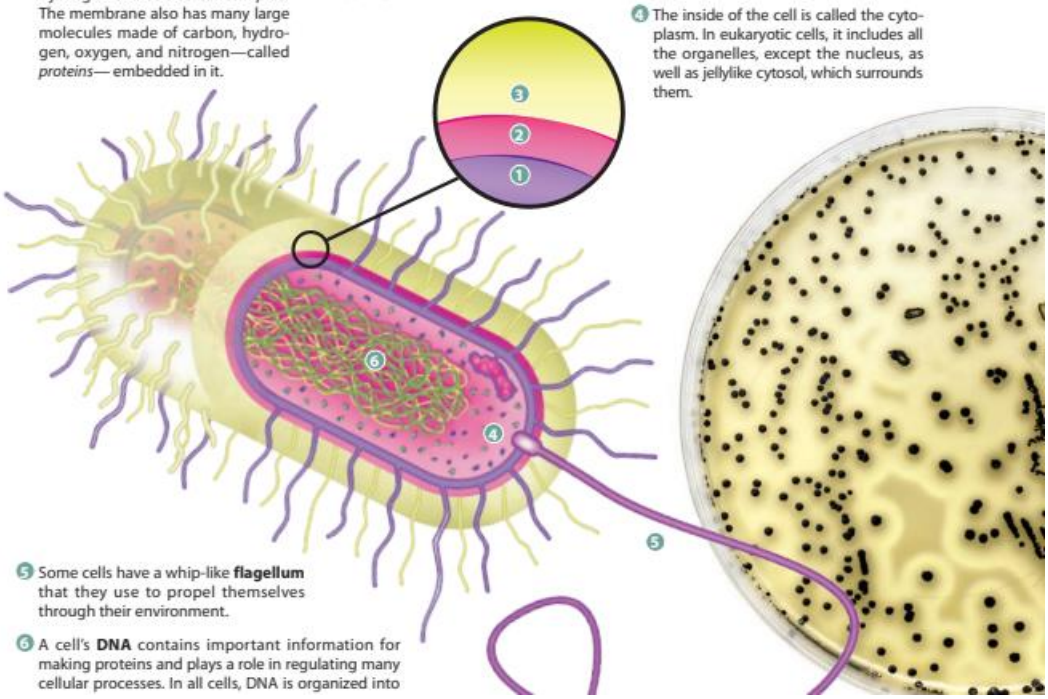
- What are the main cellular organelles?
- What does each organelle do?
- How do cells keep some molecules out and let others in?
- How do creationists and evolutionists differ in their views of the cell?

2.3 CELL PARTS

In the previous subsection, you learned that a eukaryotic cell has a nucleus, while a prokaryotic cell does not. There are other differences as well. A eukaryotic cell has many structures that perform special functions in the cell. These structures, which are usually surrounded by a membrane, are called **organelles**. Prokaryotic cells lack organelles, but the two types of cells do share some structures.

PROKARYOTIC CELL STRUCTURES

1. The **cell membrane** surrounds all cells and regulates what comes in and goes out. The membrane is made mostly of long carbon and hydrogen molecules called *lipids*. The membrane also has many large molecules made of carbon, hydrogen, oxygen, and nitrogen—called *proteins*— embedded in it.
2. Some cells have an additional rigid **cell wall** that protects them. Most bacteria, algae, fungi, and plants have cell walls, but animal, human, and protozoan cells do not.
3. Some bacteria surround themselves with a slimy layer called a capsule that protects the bacterium from harmful substances and prevents it from drying out.
4. The inside of the cell is called the cytoplasm. In eukaryotic cells, it includes all the organelles, except the nucleus, as well as jellylike cytosol, which surrounds them.



5. Some cells have a whip-like **flagellum** that they use to propel themselves through their environment.
6. A cell's **DNA** contains important information for making proteins and plays a role in regulating many cellular processes. In all cells, DNA is organized into