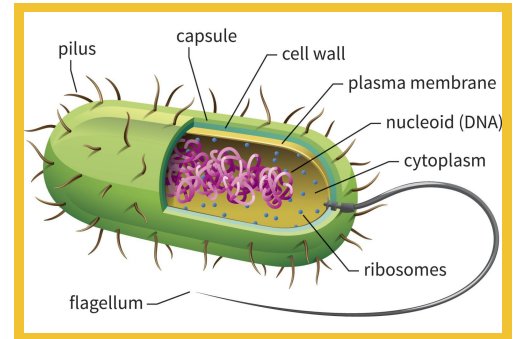


- **Cytoplasmic streaming (cyclosis** in plants) to actively transport cytoplasmic contents.
- Vesicles in proteins fibers can also act as a quick Uber.

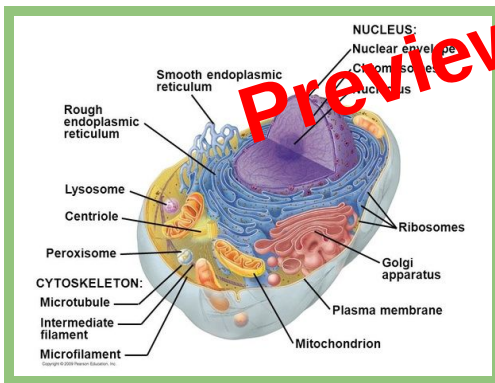
● **How Simple are Bacteria Really?**

- Bacterial and archaeal cells have genetic info that is folded into a **nucleoid** and is attached to the cell membrane.
 - But there aren't organelles!
- "How to draw bacteria on the test"
 - 1. Draw a circle-- make sure it's a bilayer! Two circles!
 - 2. Draw DNA in a circle attached to the cell membrane you drew.
 - 3. Draw the other structures:



- Draw hash marks around the entire thing to represent **peptidoglycan** (proteins and sugar)
 - *"know this for the test"
 - Then draw another bilayer around that
- Ribosomes around the DNA part
- Proteins around the DNA part

● **Eukaryotes, baby!**



- "For the test " recognize the nucleus, the ER,
 - Notes on the nucleus
 - Double membrane to protect DNA. Notice the small part of the membrane that connects to the ER.
 - Notice the pores that are on the nucleus to transport proteins. There too big and charged to get out through the double membrane.
 - The nucleolus is inside the nucleus... synthesizes ribosomes.
 - Those 80 proteins found in eukaryotic cells come together HERE to form ribosomes!

● **The Powerhouse of the Cell**

- Comparable in size to bacteria.
- Most eukaryotic cells have hundreds of mitochondria!
- They're mostly found in tissues that have a high demand for metabolic processes.
- They have an inner membrane and an outer membrane.
- Mitochondria can change shape to fit the needs of whatever they're doing. For example: the tail of a sperm.
- "Know the origins of where mitochondria came from"
 - The endosymbiont theory!!