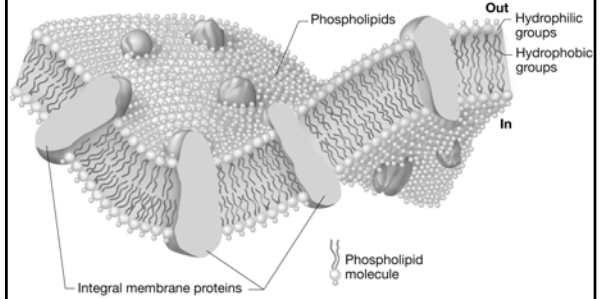


Comparing Prokaryotic and Eukaryotic Cells

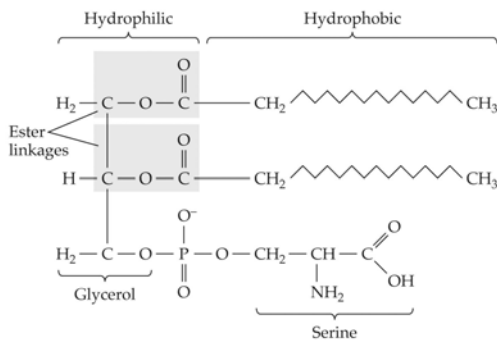
Classification of prokaryotic cellular features: Invariant (or common to all)

- **Ribosomes:** Sites for protein synthesis – aka the grand translators.
- ➡ ● **Cell Membranes:** The barrier between order and chaos.
- **Nucleoid Region:** Curator of the Information.

The cytoplasmic membrane



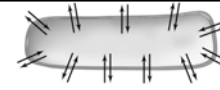
Rem: Fluid Mosaic Model



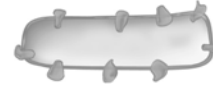
Amphipathic

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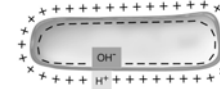
Functions of the cytoplasmic membrane



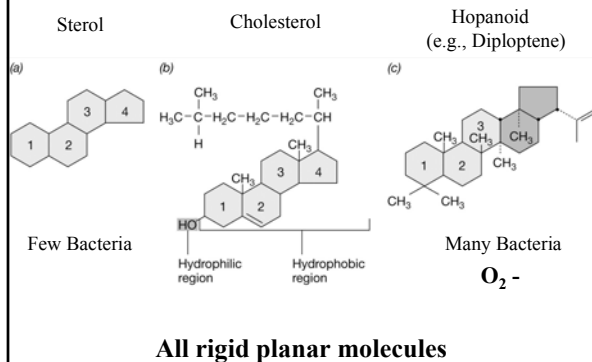
Permeability Barrier—Prevents leakage and functions as a gateway for transport of nutrients into and out of the cell



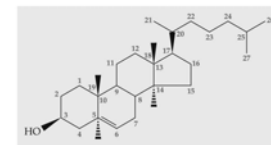
Protein Anchor—Site of many proteins involved in transport, bioenergetics, and chemotaxis



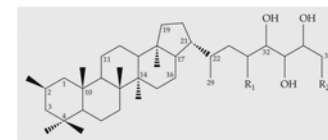
Energy Conservation—Site of generation and use of the proton motive force



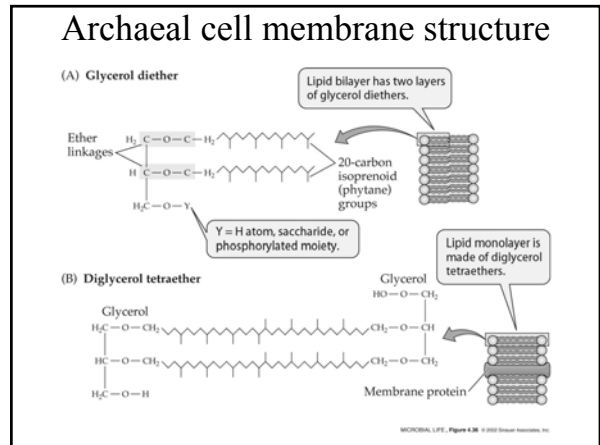
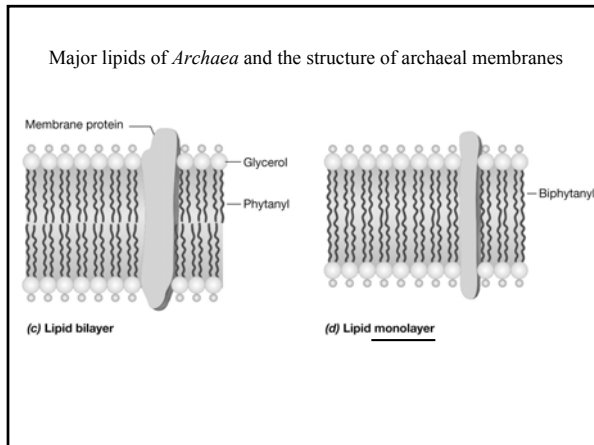
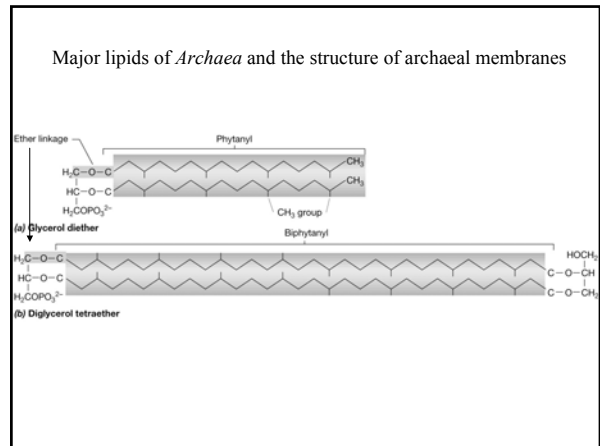
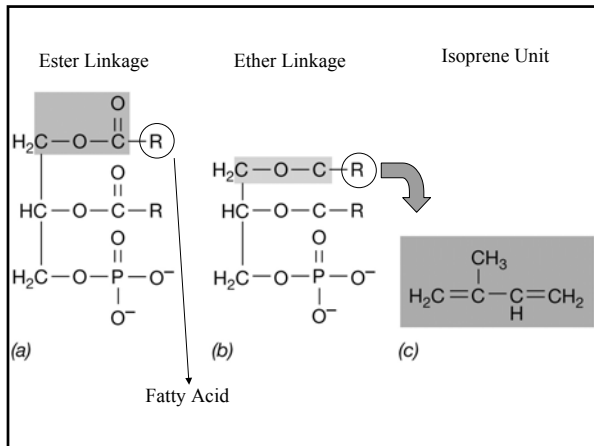
(A) Cholesterol



(B) A hopanoid from a cyanobacterium



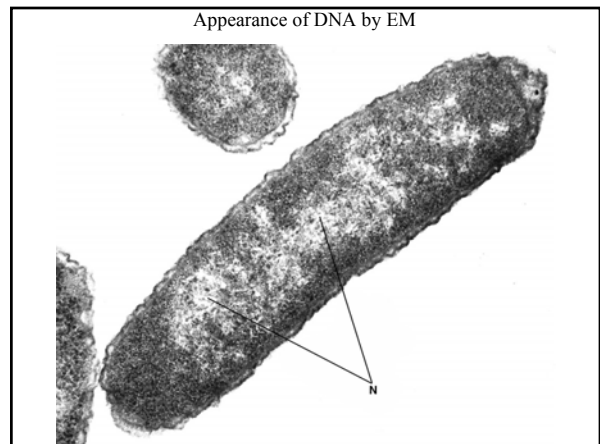
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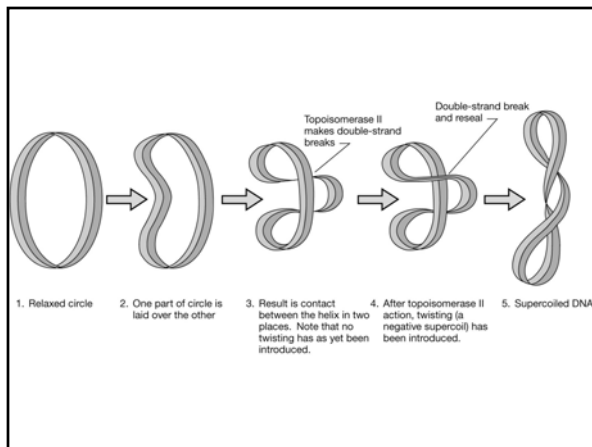
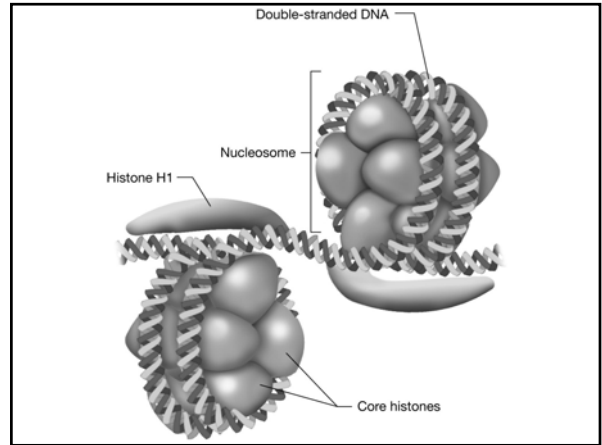
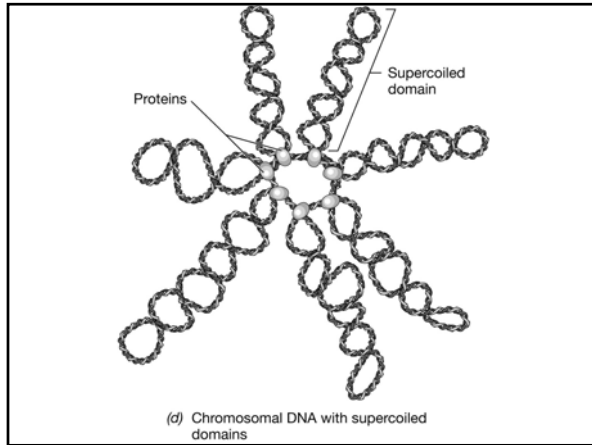
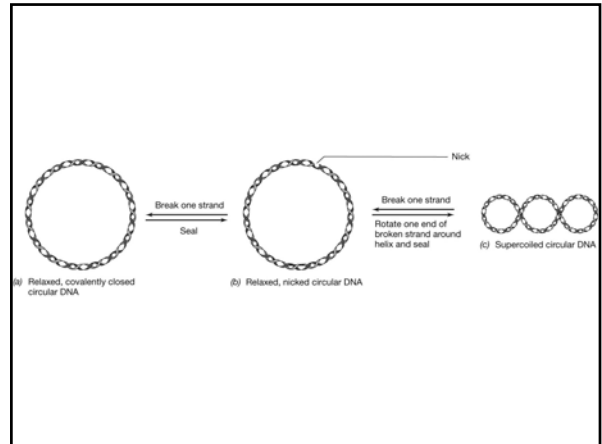
Comparing Prokaryotic and Eukaryotic Cells

Classification of prokaryotic cellular features:
Invariant (or common to all)

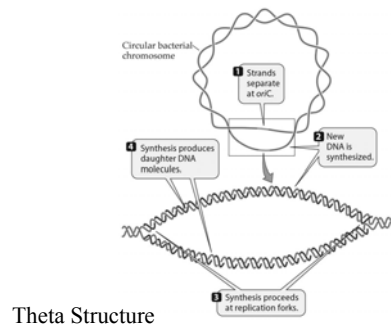
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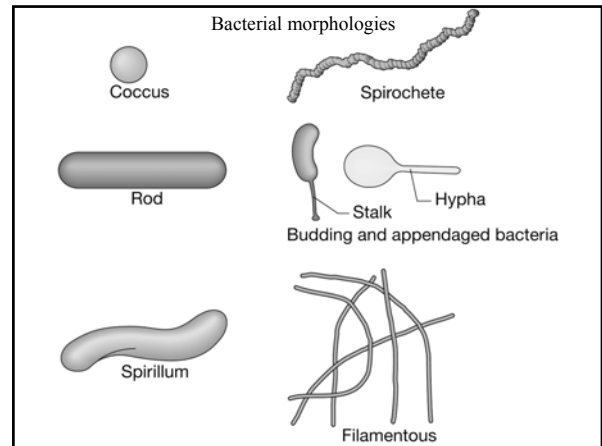
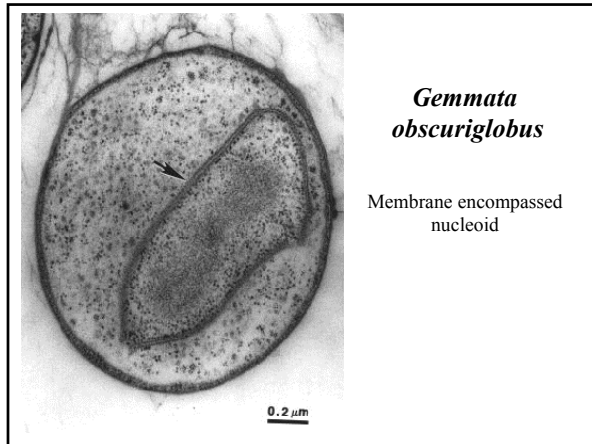


DNA strands released from cell



Overview of DNA replication





Comparing Prokaryotic and Eukaryotic Cells

**Classification of prokaryotic cellular features:
Variant (or NOT common to all)**

- Cell Wall (multiple barrier support themes)
- Endospores (heavy-duty life support strategy)
- Bacterial Flagella (appendages for movement)
- Gas Vesicles (buoyancy compensation devices)
- Capsules/Slime Layer (exterior to cell wall)
- Inclusion Bodies (granules for storage)
- Pili (conduit for genetic exchange)

