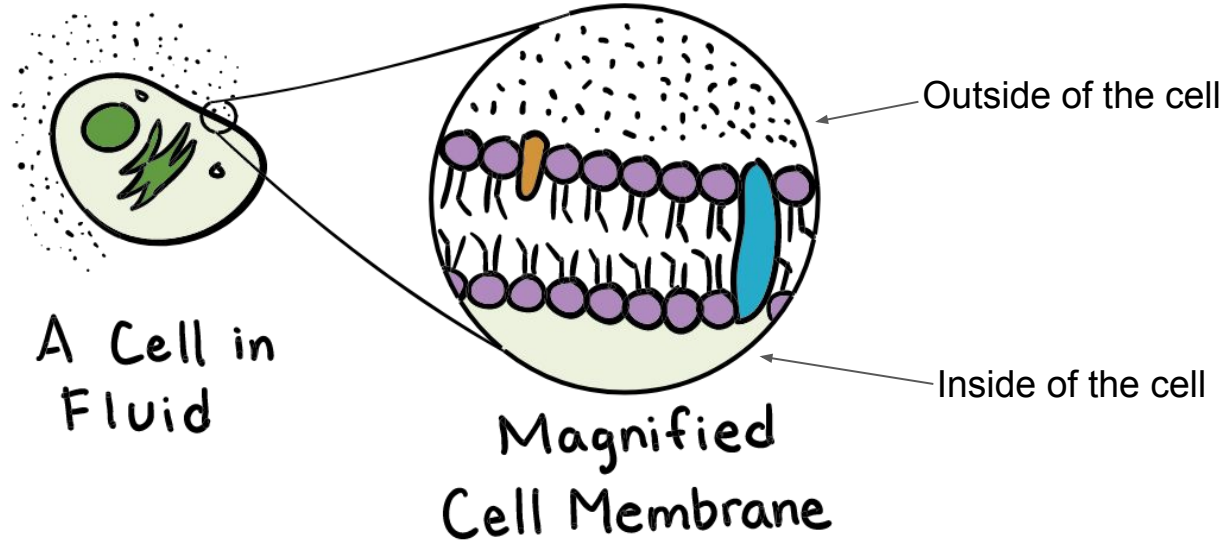
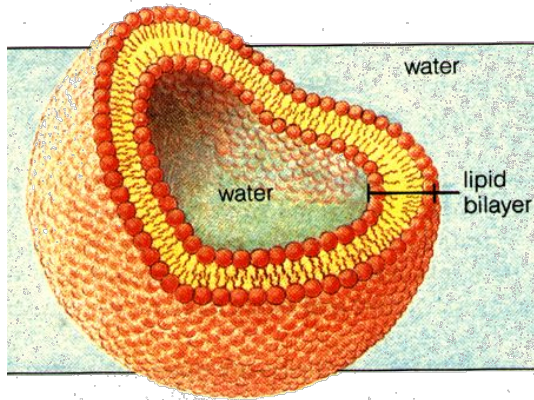


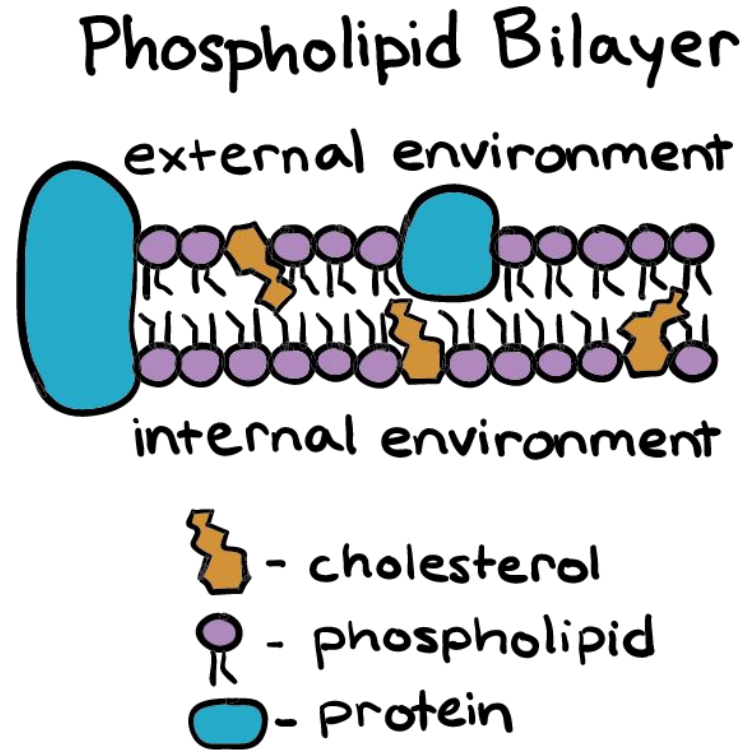
A. The cell membrane

1. Holds the cell together and protects it from the environment outside.
2. Controls what enters and exits the cell in order to maintain **homeostasis** (keep the cell stable).
3. Communicates with the environment or other cells



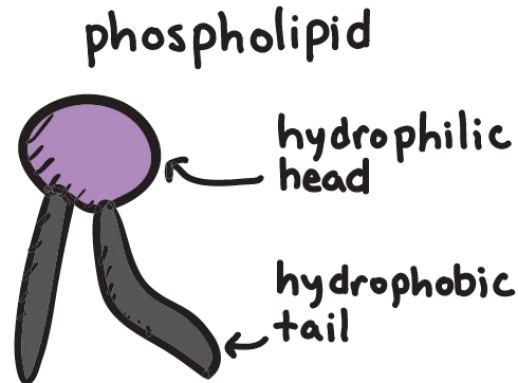
B. The cell membrane has 4 main parts:

- 1. Phospholipids**
- 2. Cholesterol**
- 3. Proteins**
- 4. Carbohydrates**



C1. Phospholipids

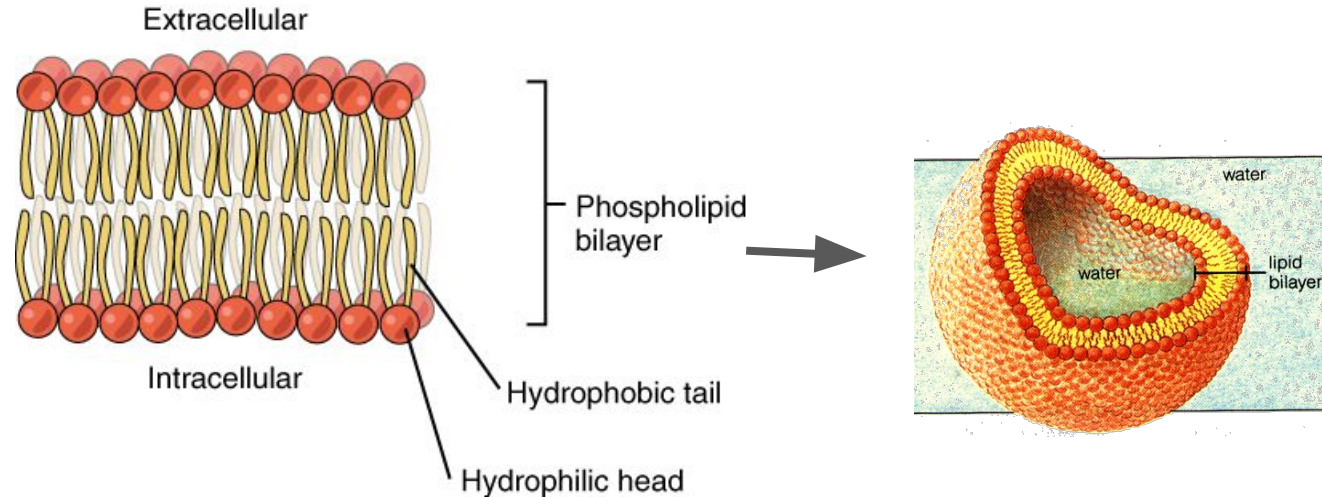
- Main part of the cell membrane (50-80% of its mass)
- Two parts: the phosphate head, and the fatty acid tails.
 - The phosphate head is polar, so it is *hydrophilic* (attracted to water).
 - The fatty acid tails are nonpolar, so they are hydrophobic (repelled from water)



C2. Phospholipid Bilayer

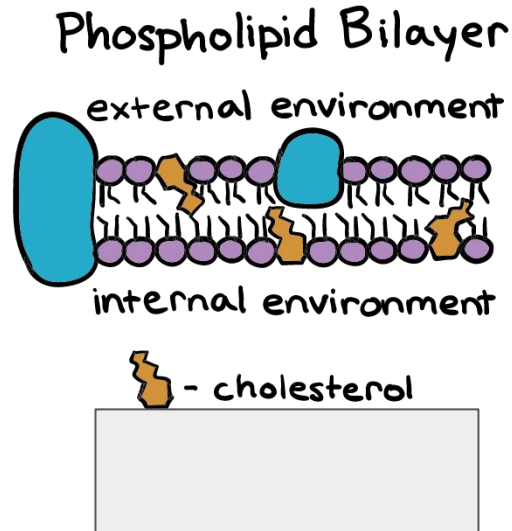
Phospholipids in the membrane organize into 2 layers (the phospholipid bilayer).

- Phosphate heads in the outer layer face the watery external environment.
- Fatty acid tails hide away from water, in between the layers of phosphate heads.
- Phosphate heads in the inner layer face the watery internal environment.



D. Cholesterol

- Located randomly inside the phospholipid bilayer.
- Cholesterol stabilizes the cell membrane by controlling the spacing of phospholipids.



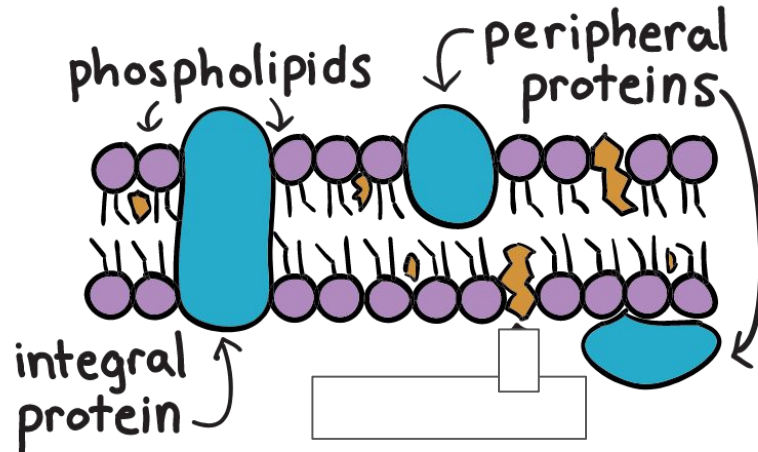
E. Proteins

1. Integral proteins

- inside the phospholipid bilayer and stick out on either end
- transport molecules across the cell membrane.

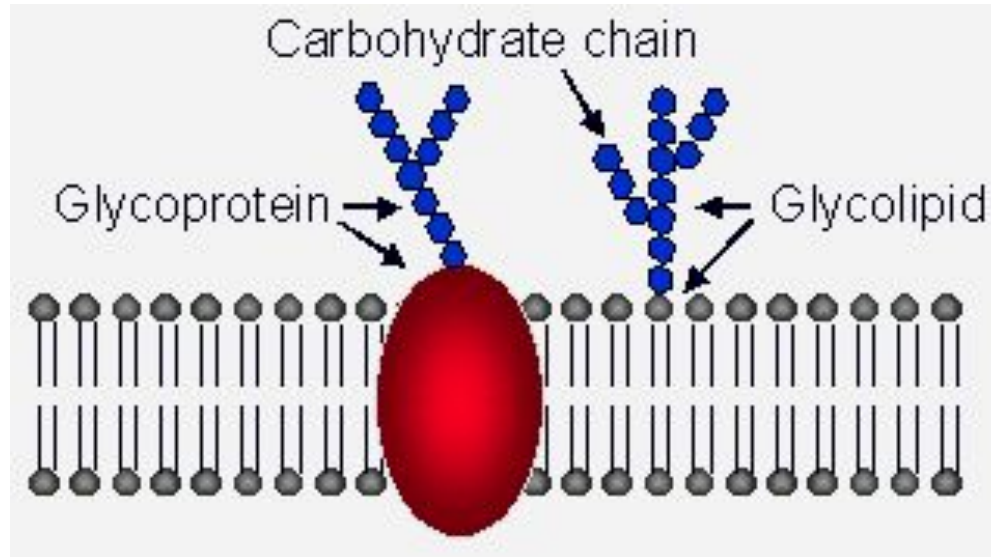
2. Peripheral proteins

- attach to either the inside or outside of the membrane
- help communicate with other cells.



F. Carbohydrates

- Attached to proteins, making them “glycoproteins,” or to lipids, making them “glycolipids”
- Involved in cell recognition and communication (kind of like name tags)



G. The Fluid Mosaic Model:

- A **model** we use to help us describe how the cell membrane works,
- Consisting of a collection of different molecules, like a **mosaic**,
- Which are constantly moving, like a **fluid**.

