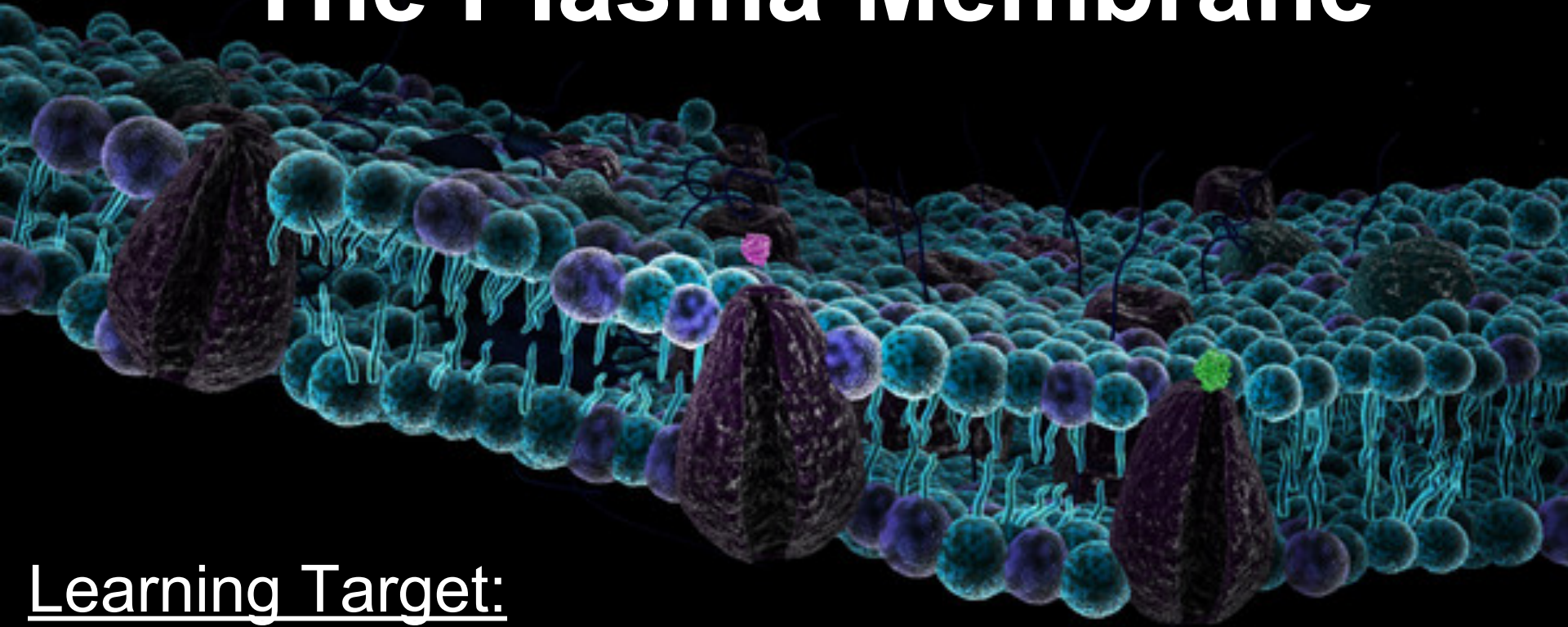


The Plasma Membrane



Learning Target:

Explain the importance of the plasma membrane.



Recall: What is the function of the plasma membrane?

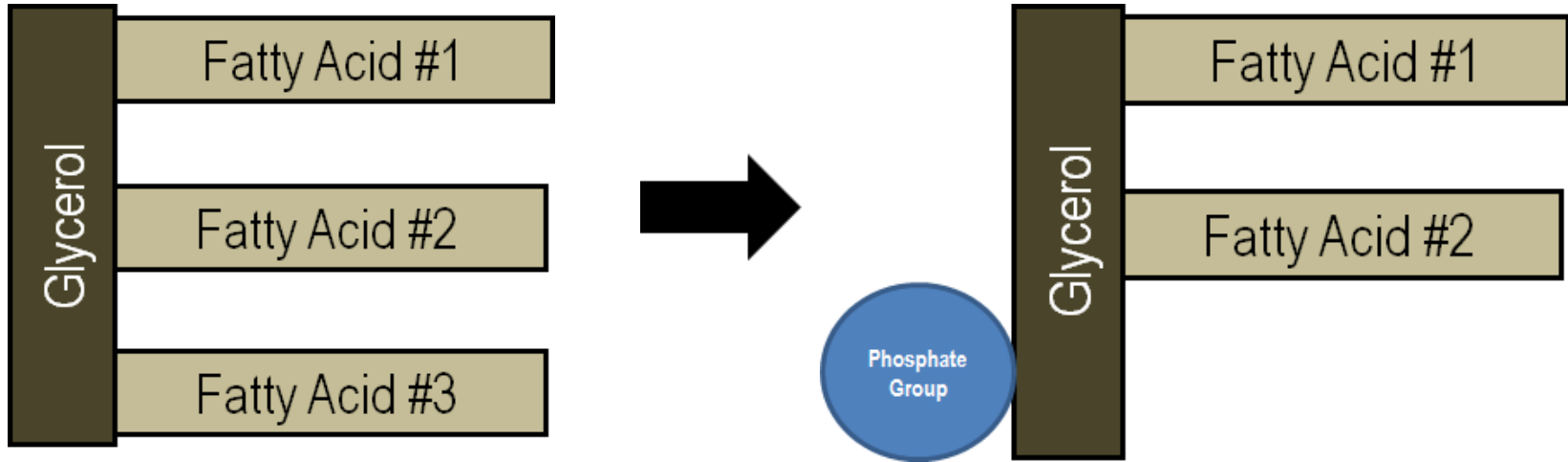


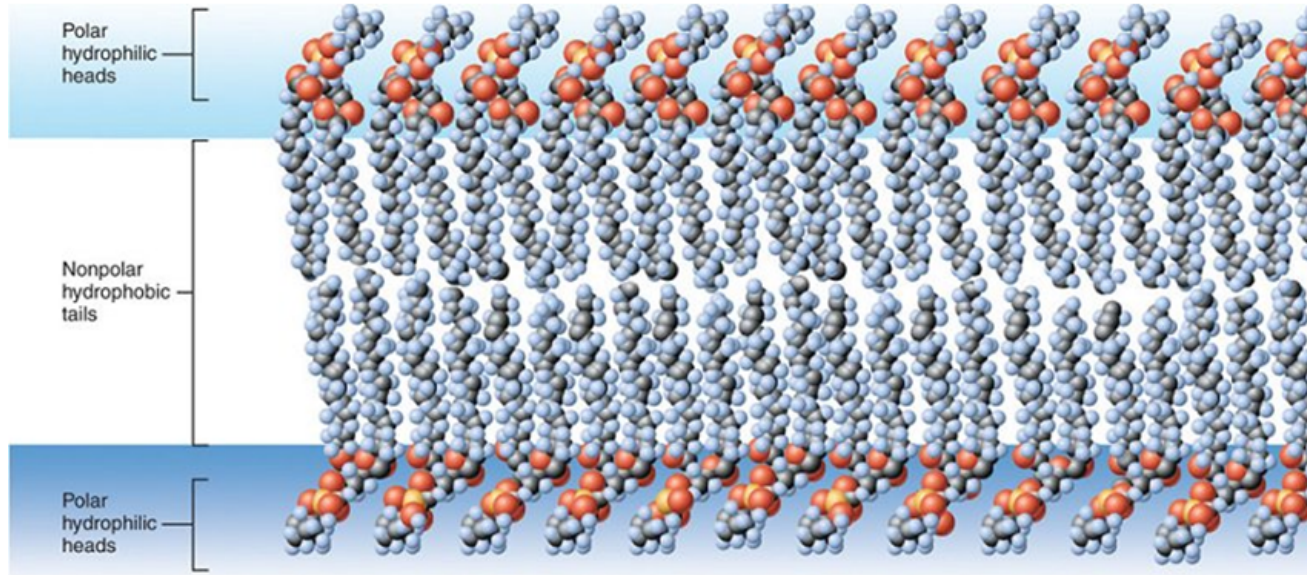
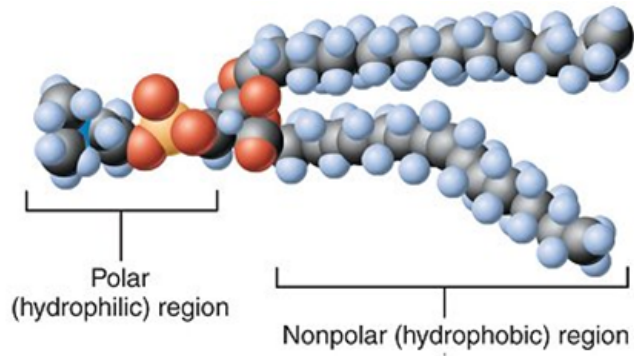
Recall: What is the function of the plasma membrane?

- Controls movement of materials into and out of the cell.
- Responsible for maintaining homeostasis in the cell.
 - Keeps the proper chemical balance inside the cell.
 - The cell must regulate substances such as water, glucose, amino acids, oxygen, and carbon dioxide.

What is the structure of the plasma membrane?

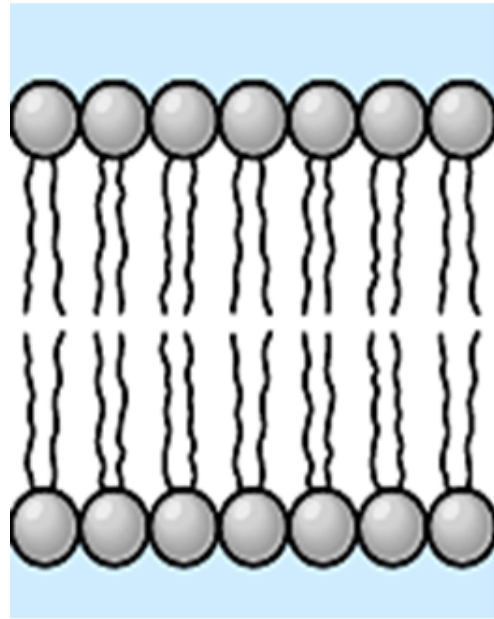
- Made of phospholipids (modified lipids).





Phospholipid Bilayer

What is the plasma membrane made up of?



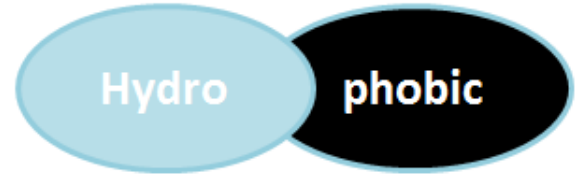
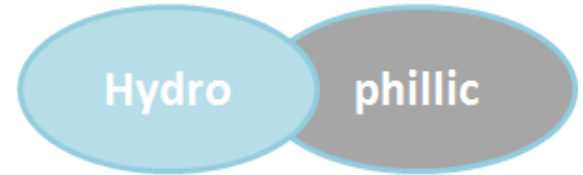
← “heads”

← “tails”

Phospholipid Bilayer

HYDROPHILIC

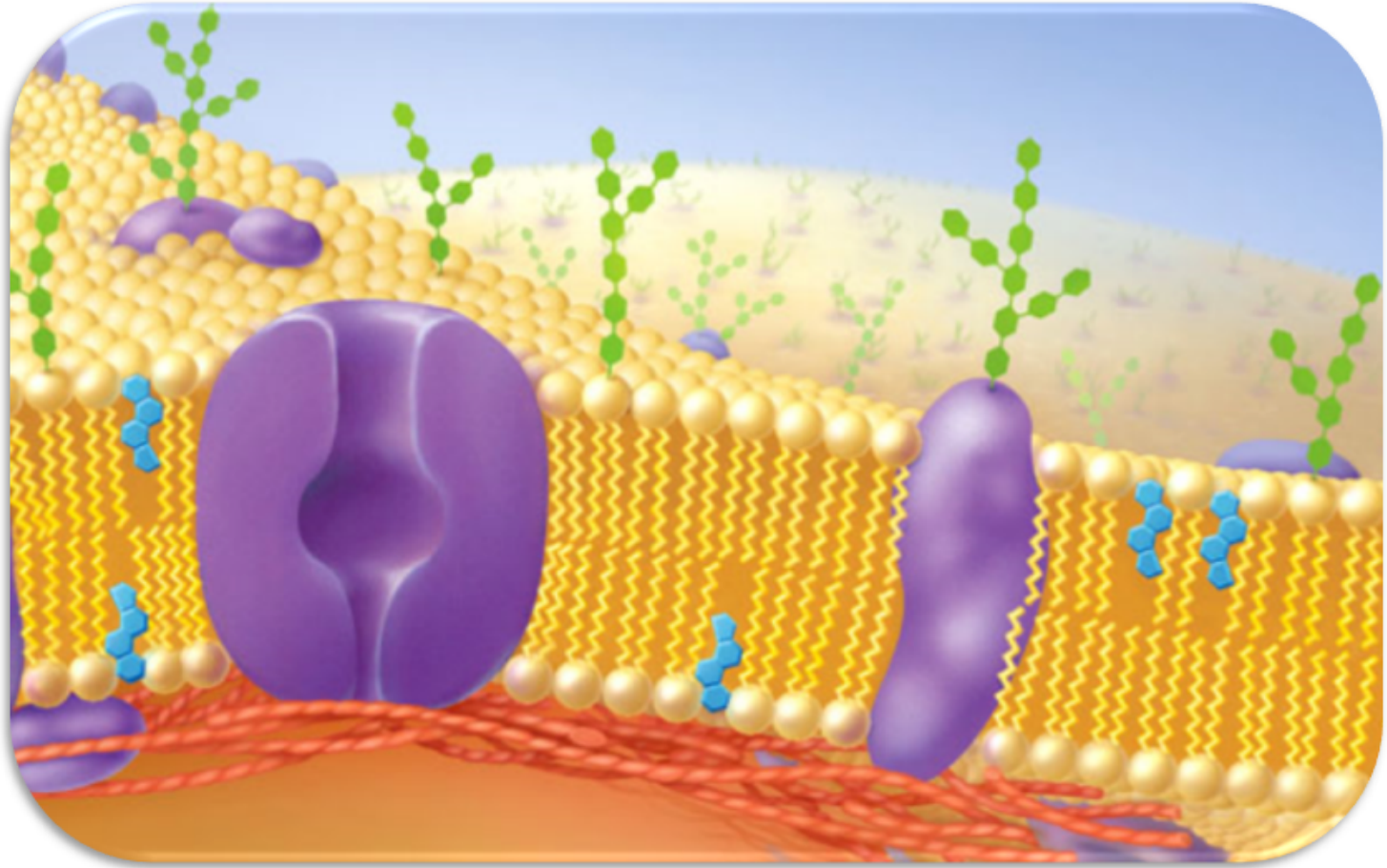
“water” + “loving”



“water” + “fearing”

HYDROPHOBIC

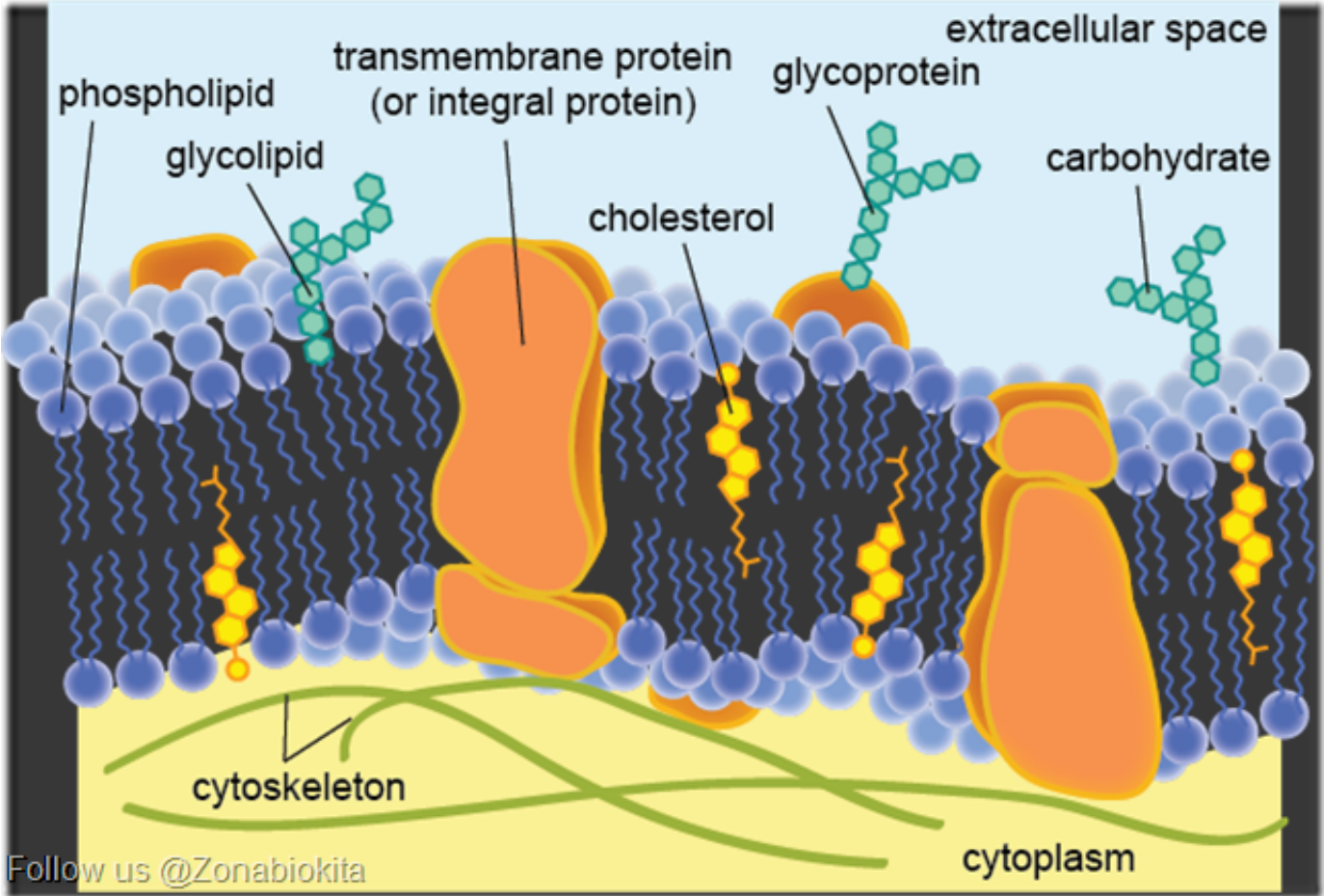
What is the plasma membrane made up of?



What is the plasma membrane made up of?

- **Cholesterol:** helps solidify and stabilize the “fluid” membrane.
- **Carbohydrates:** specific pattern on the outer surface of cells for self-recognition.
- **Proteins:** channels for molecules to pass through that otherwise wouldn't fit.

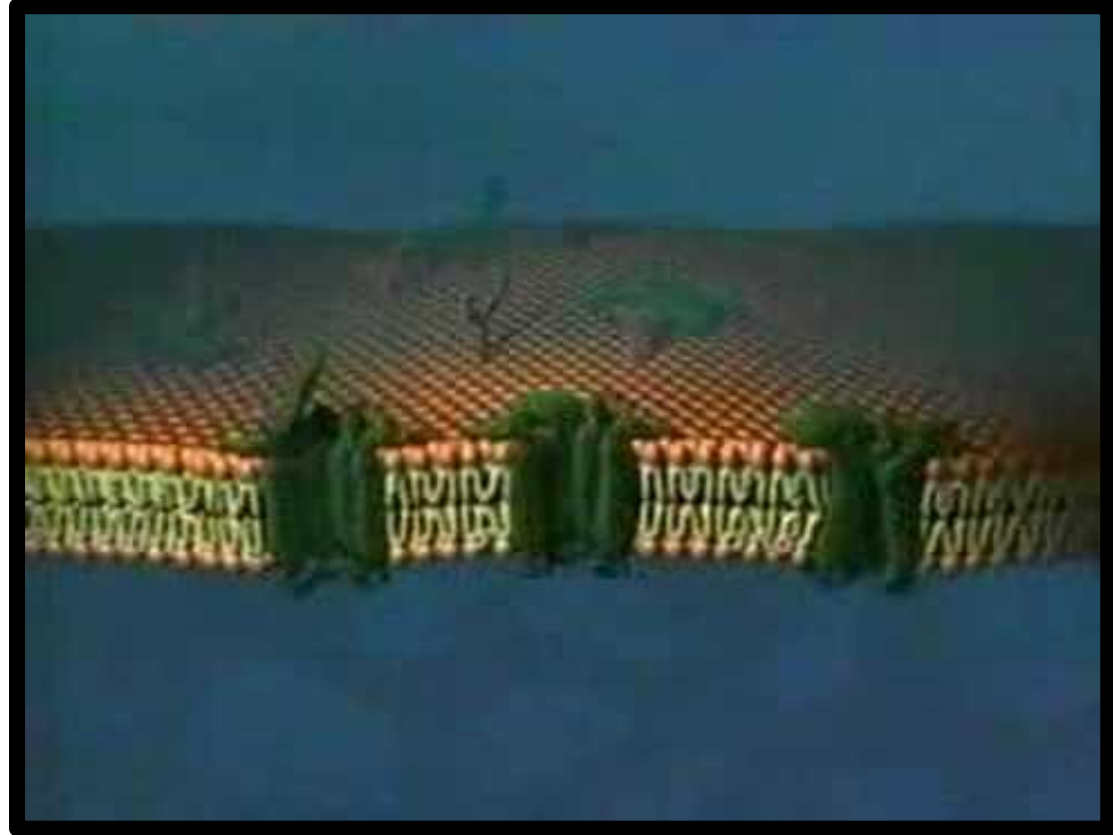
What is the plasma membrane made up of?



What are some characteristics of the plasma membrane?

Fluid Mosaic Model:

- Describes how the parts of the membrane are not stuck in place, but have the ability to move around.



What are some characteristics of the plasma membrane?

Semi-permeable:

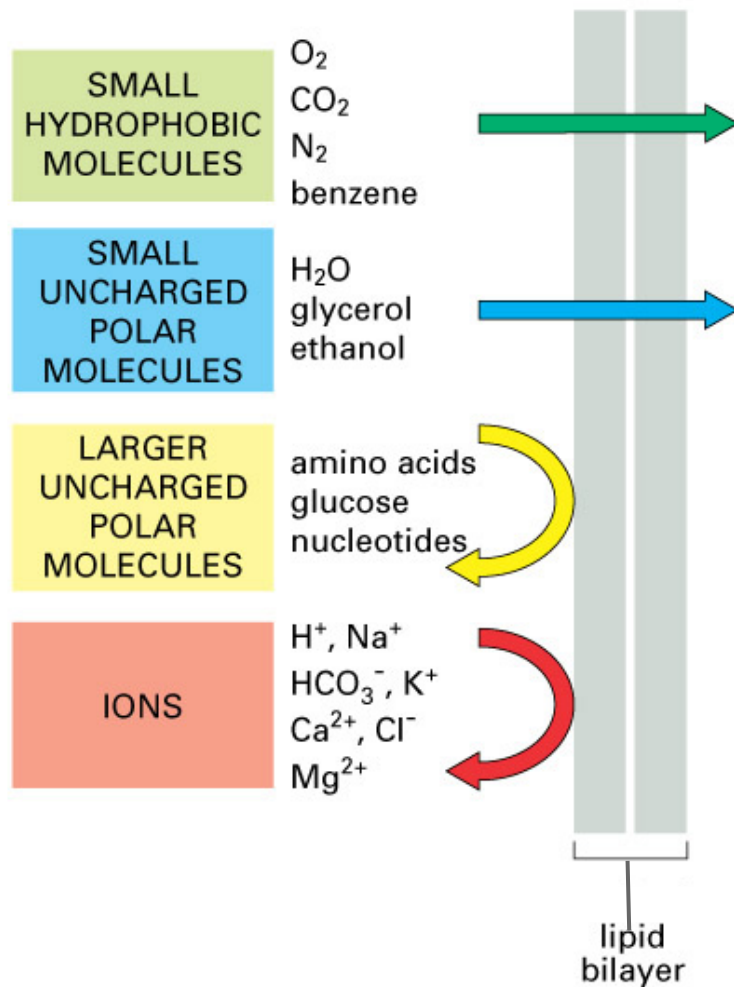
- Only allows some molecules to pass through the membrane.

Substances
can move
through

- Non-polar molecule: fatty acids, vitamins (A,D,E,K), steroids
- Oxygen, Carbon Dioxide, Water

Substances
can't move
through

- Ions: Na^+ , K^+ , Ca^{2+} , H^+
- Polar molecule: Polysaccharides, Amino acids, glucose, nucleic acids



Membranes!

