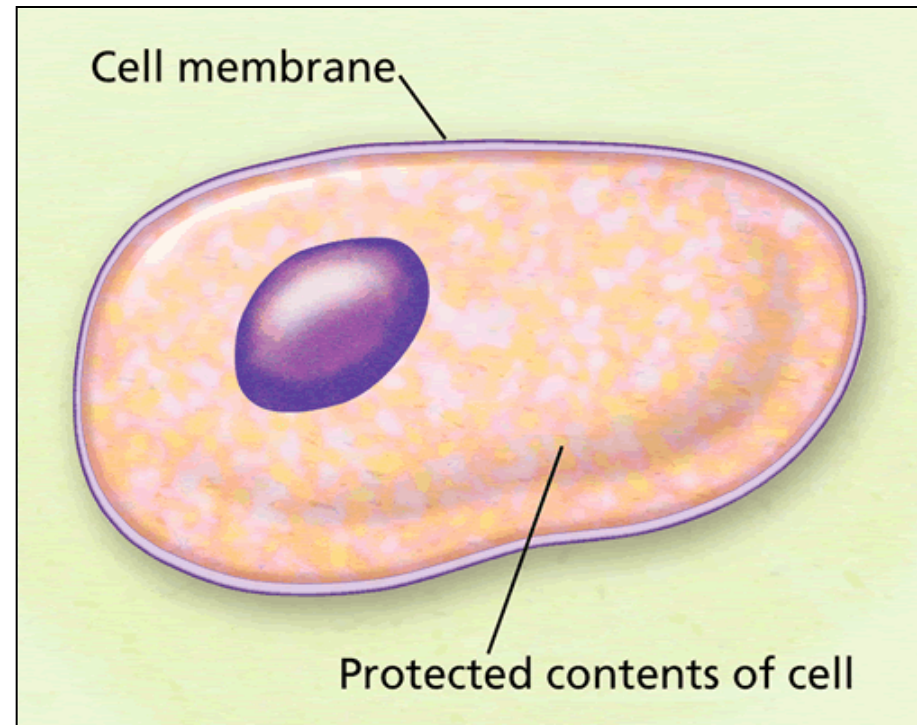


THE CELL MEMBRANE

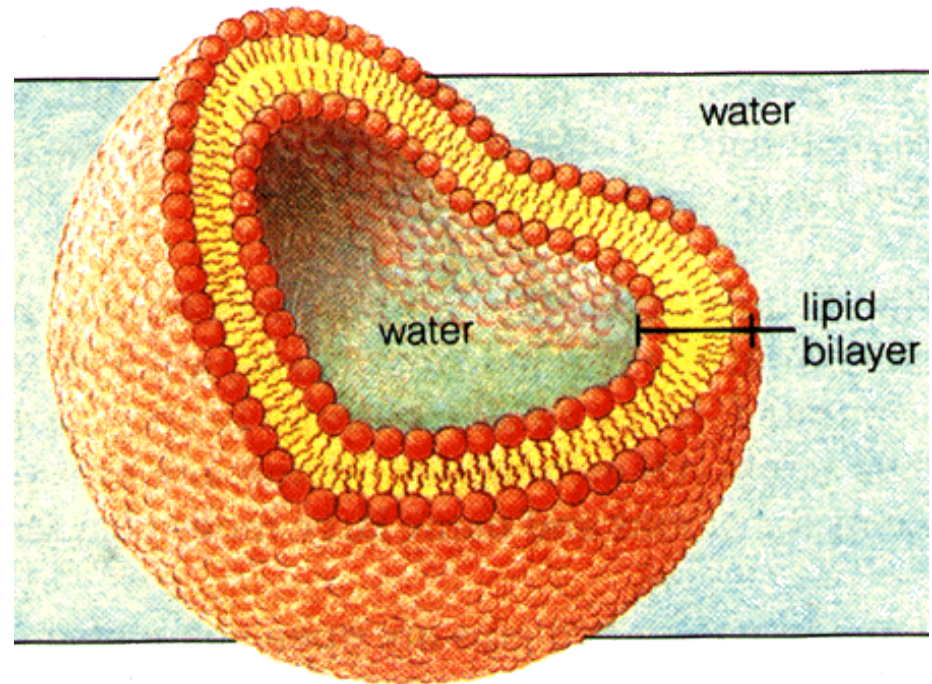
The Cell Membrane: A Selective Barrier

- All cells are surrounded by a thin, flexible barrier known as the cell (plasma) membrane (or lipid bilayer).
- The cell membrane protects what is inside the cell.
- The cell membrane controls the materials that enter and leave.



A Selective Barrier

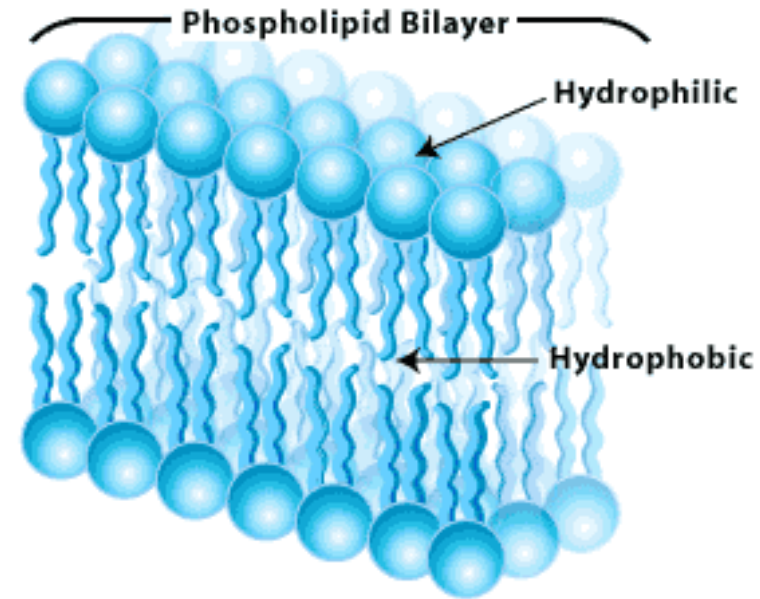
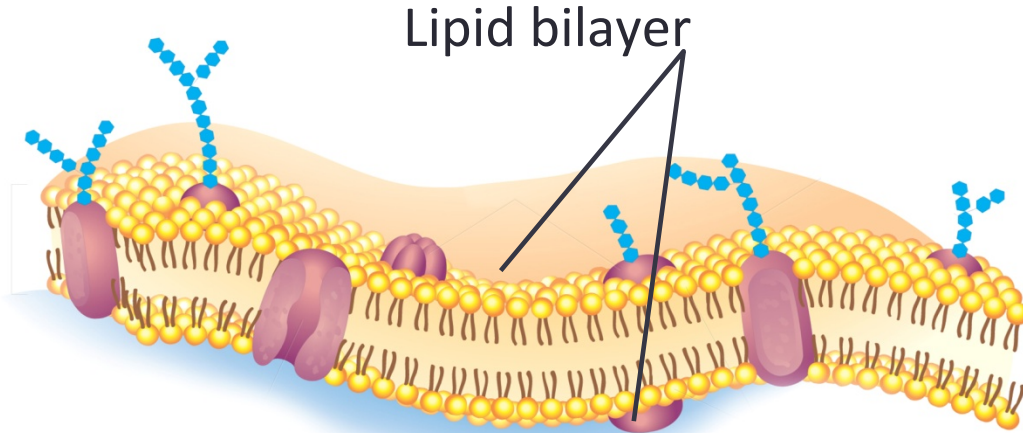
- The cell membrane allows some substances to come into the cell and keeps others out.



- A fish net:
 - Has holes that let water and other things to pass through but **not the fish.**

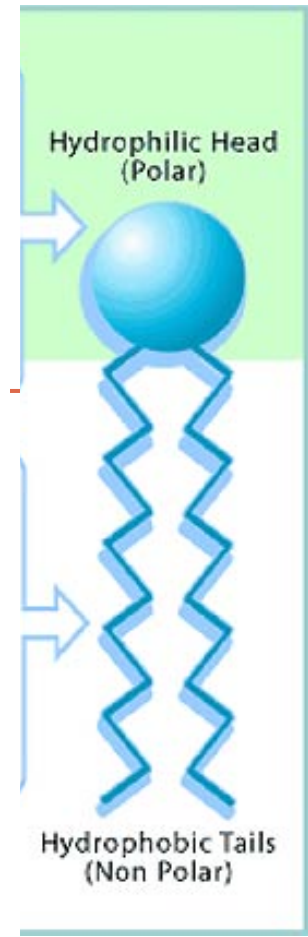
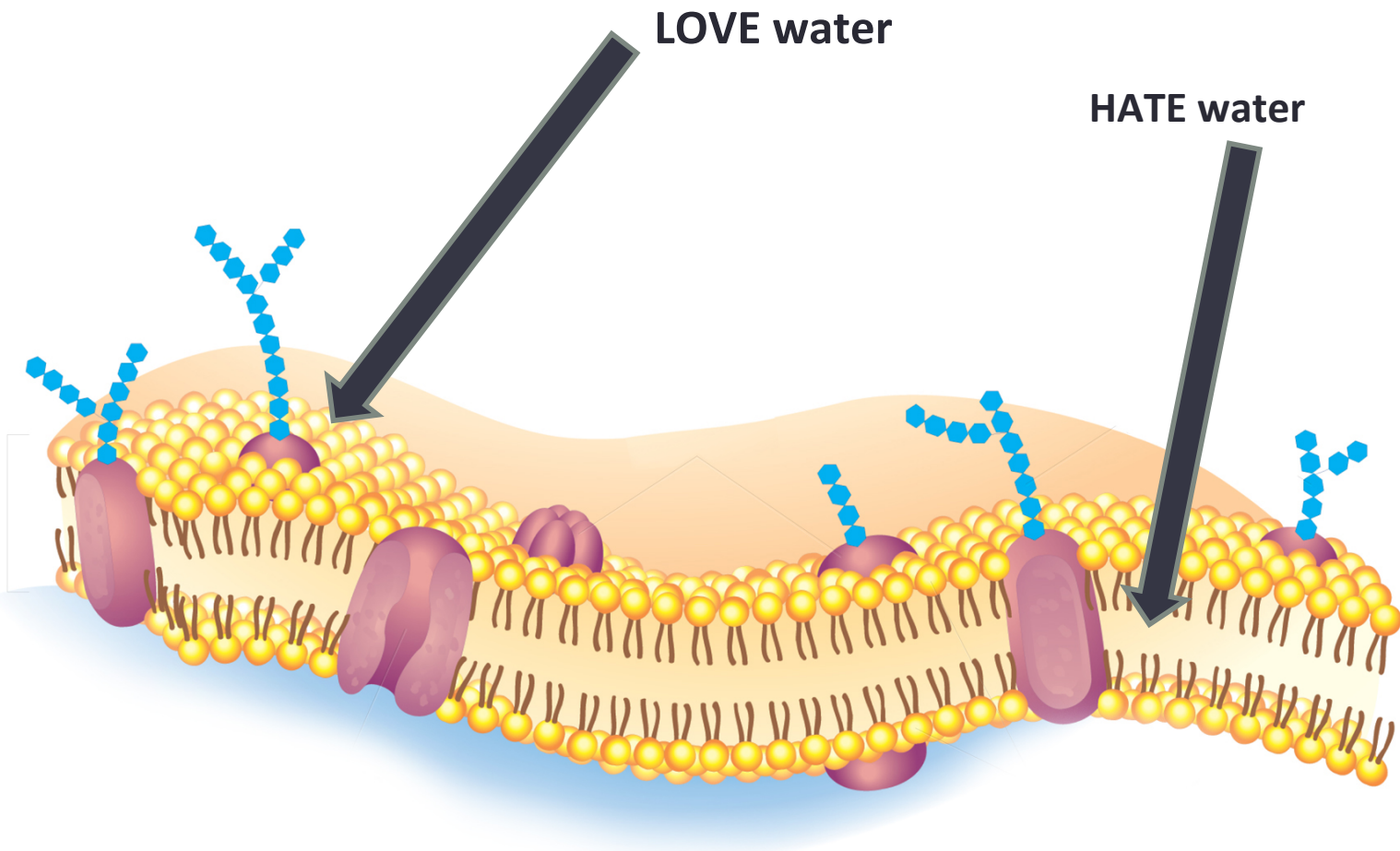
Plasma Membrane

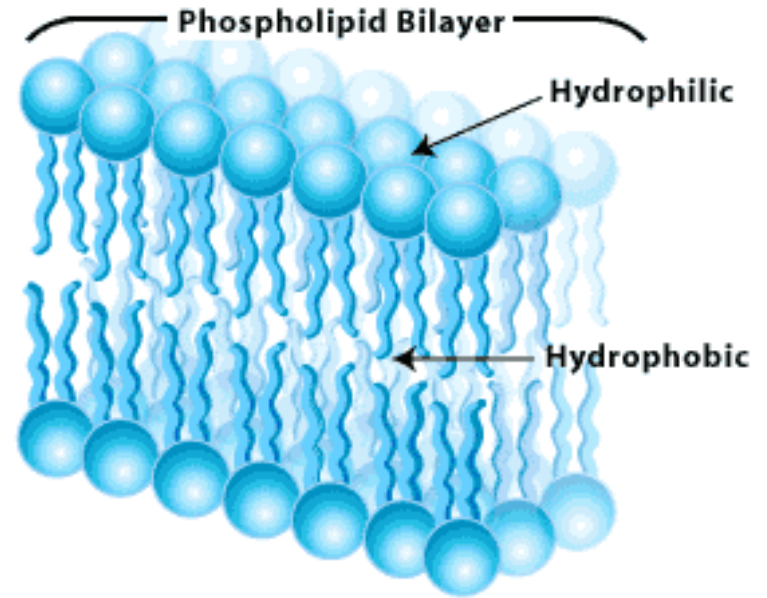
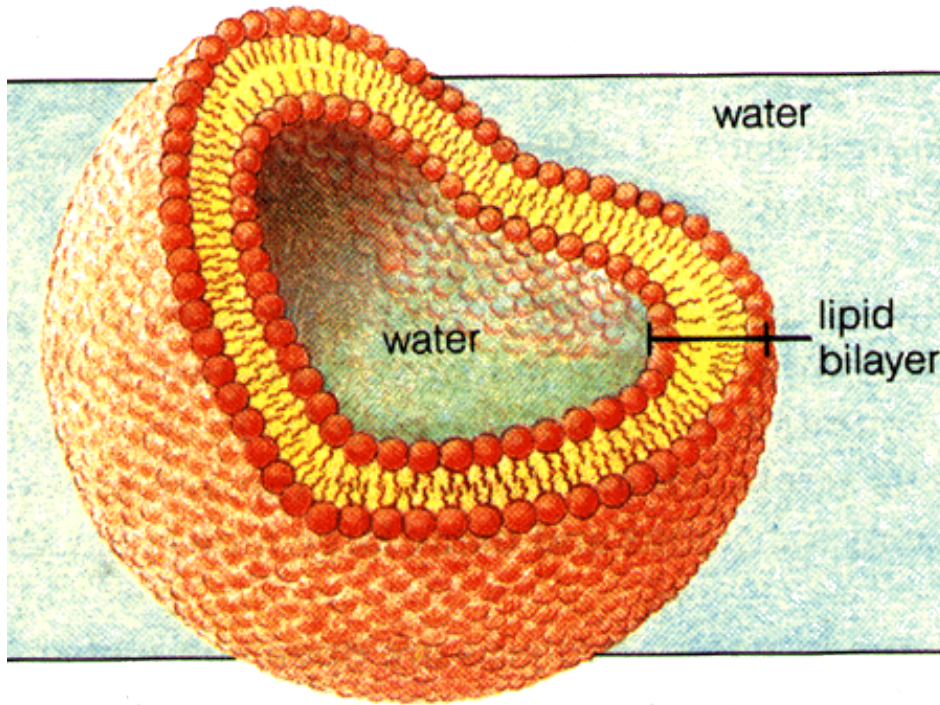
- The cell membrane is made of a double-layered sheet called a phospholipid bilayer.



- **Phospholipid Bilayer:** 2 layers of phospholipids arranged tail-to-tail.

- Phospholipids have hydrophilic heads & hydrophobic tails

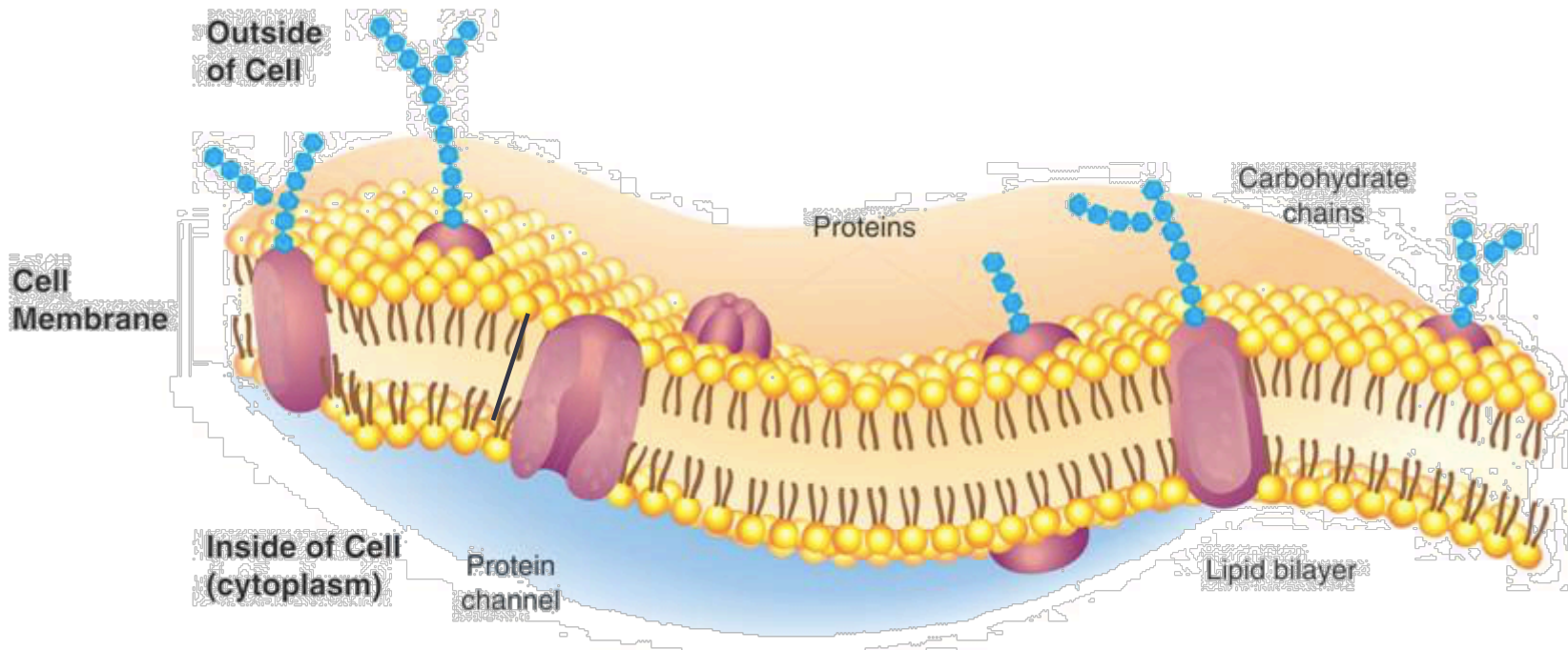




- The **heads LOVE** the water – they face the liquid inside/ outside of the cell.

- The **tails HATE** the water - they face the inside of the membrane.

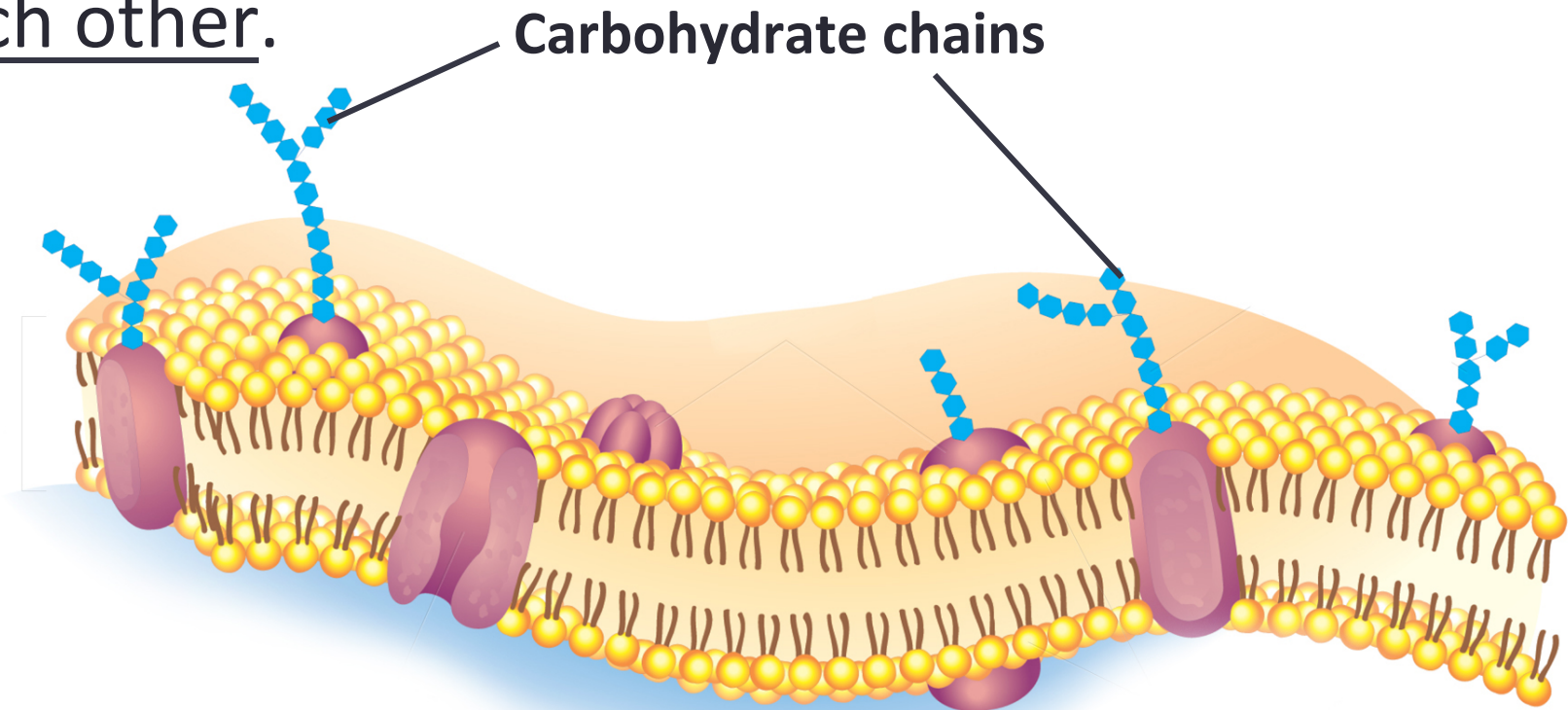
Proteins



- Proteins can **form channels (tunnels)** for large things to easily pass through.
- Proteins can also form pumps to pump larger substances from one side of the cell to the other using energy.

Carbohydrates

- **Carbohydrates** are attached to the proteins or lipids at the membrane's surface (only on outside of cell).
- They act like **I.D. cards** that allow cells to recognize each other.



Cholesterol

- **Cholesterol** are found between the phospholipid tails within the membrane.
- Cholesterol helps to make sure the membrane stays fluid (maintains fluidity).

Cholesterol

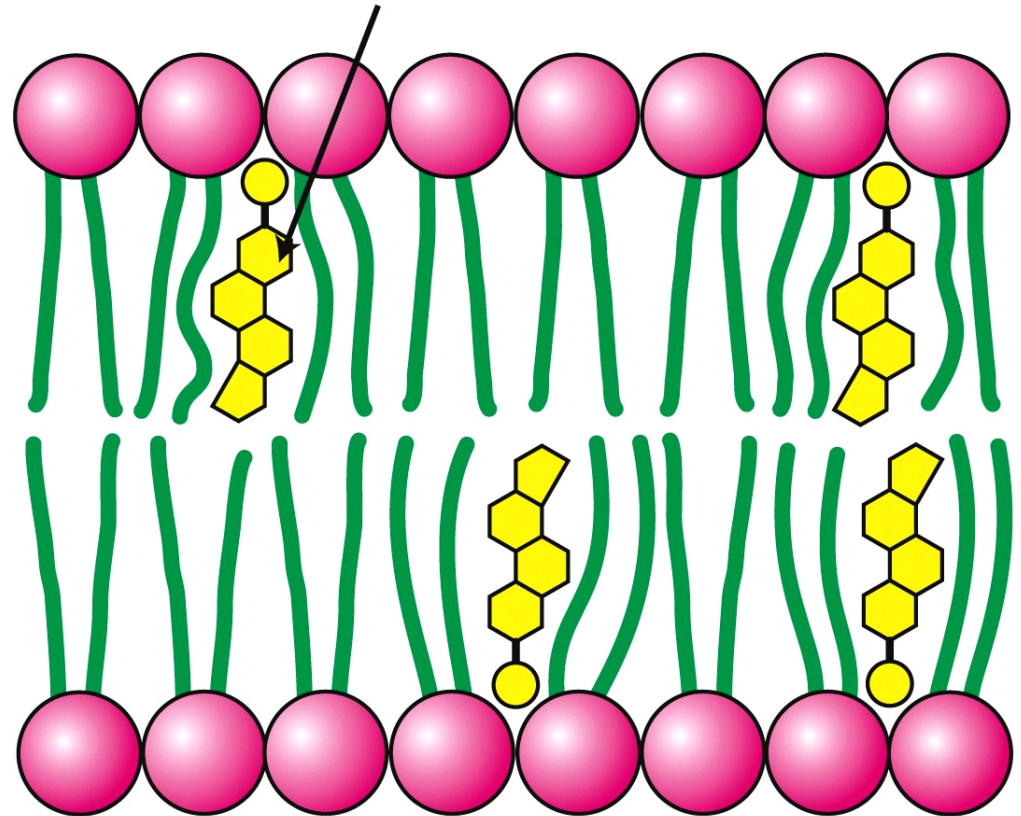


Figure 12.33
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Fluid Mosaic Model

- Since there are so many different kinds of things in the cell membrane (and the membrane can easily move) it is called the “fluid mosaic model”.

