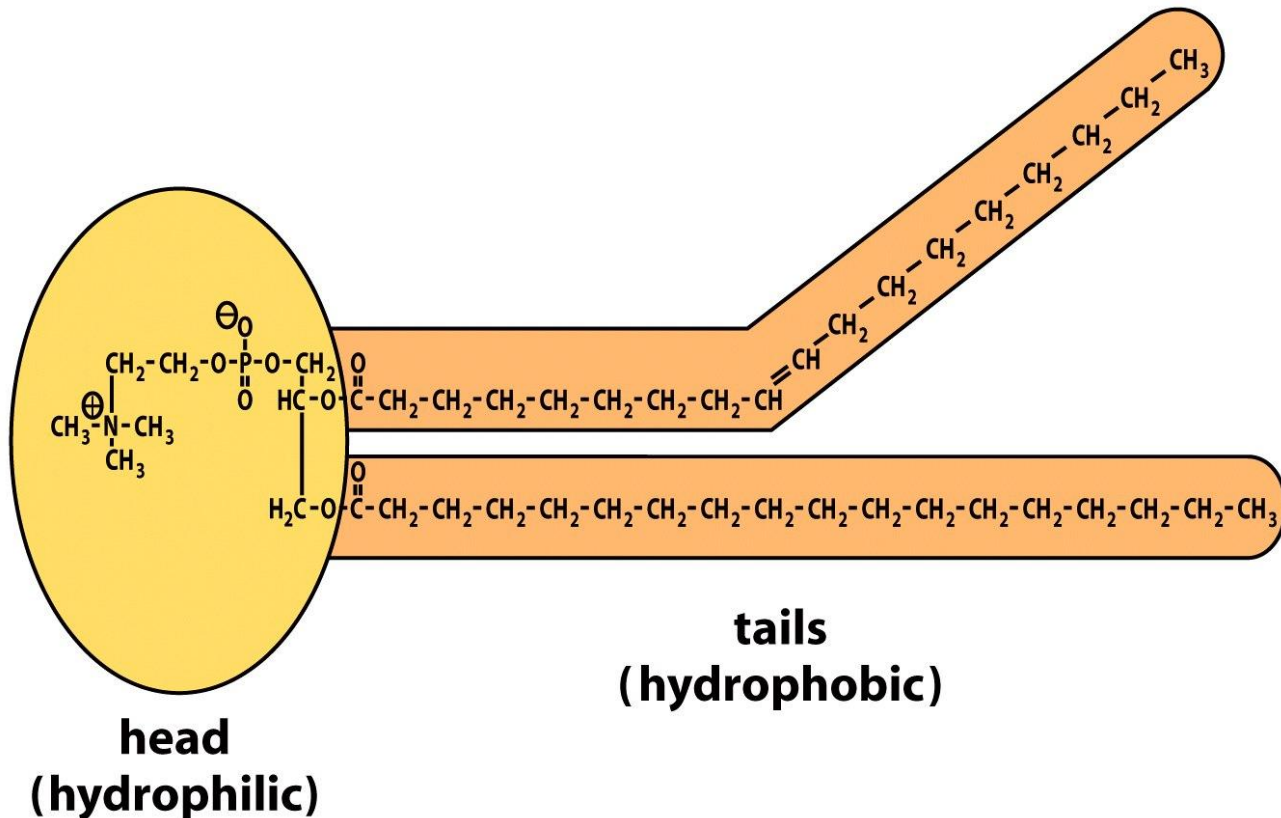
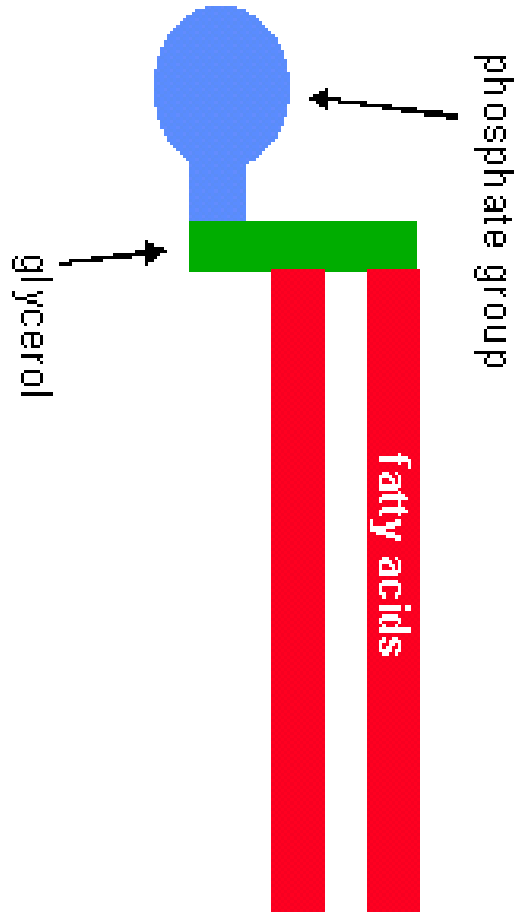


The Phospholipid Bilayer

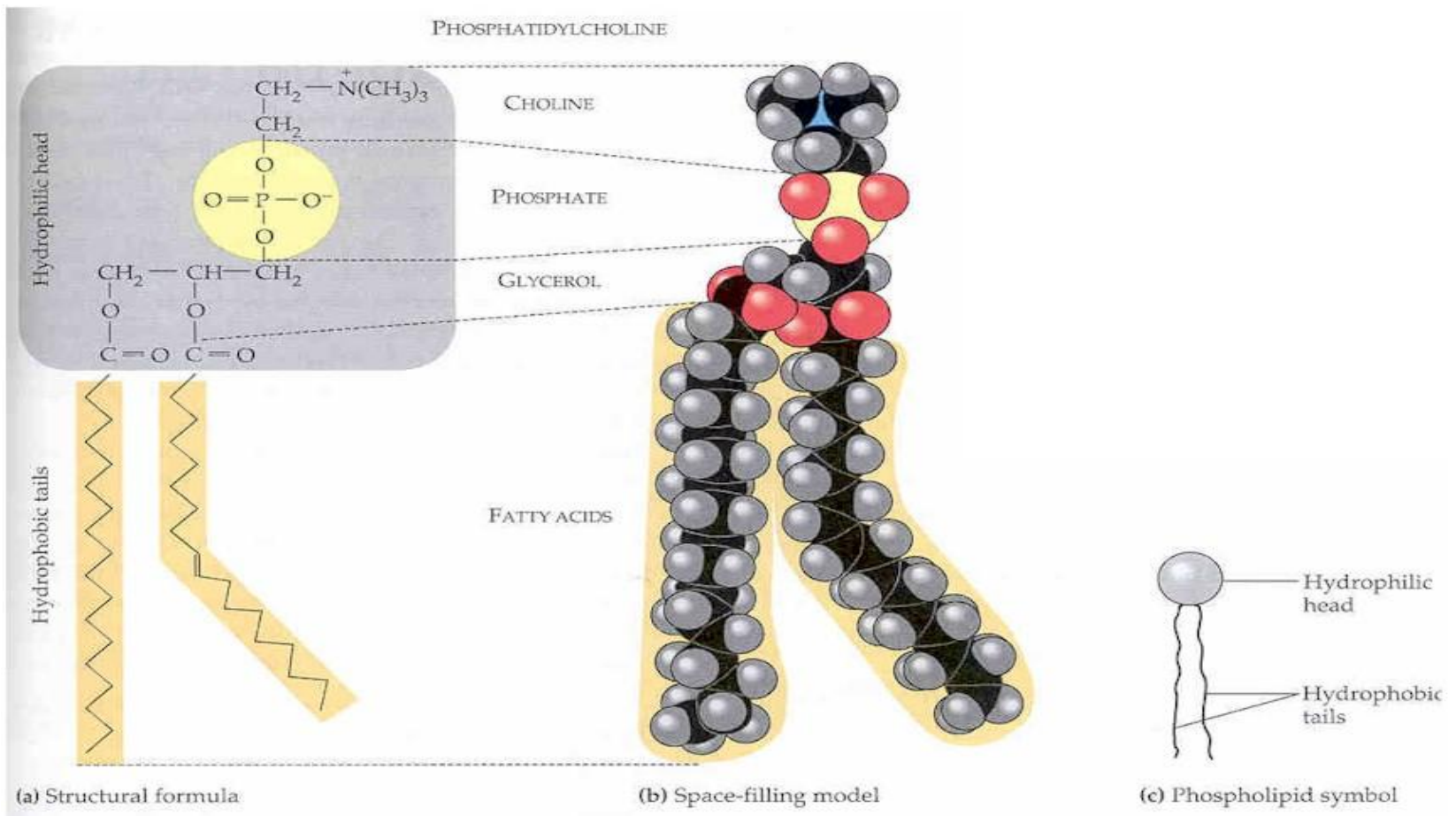
Phospholipids are the basis of membrane structure



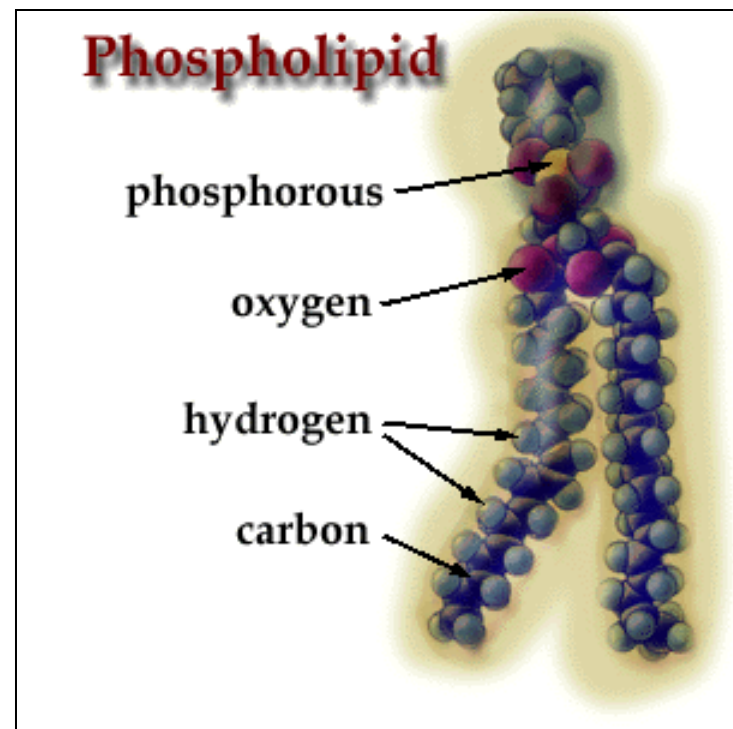
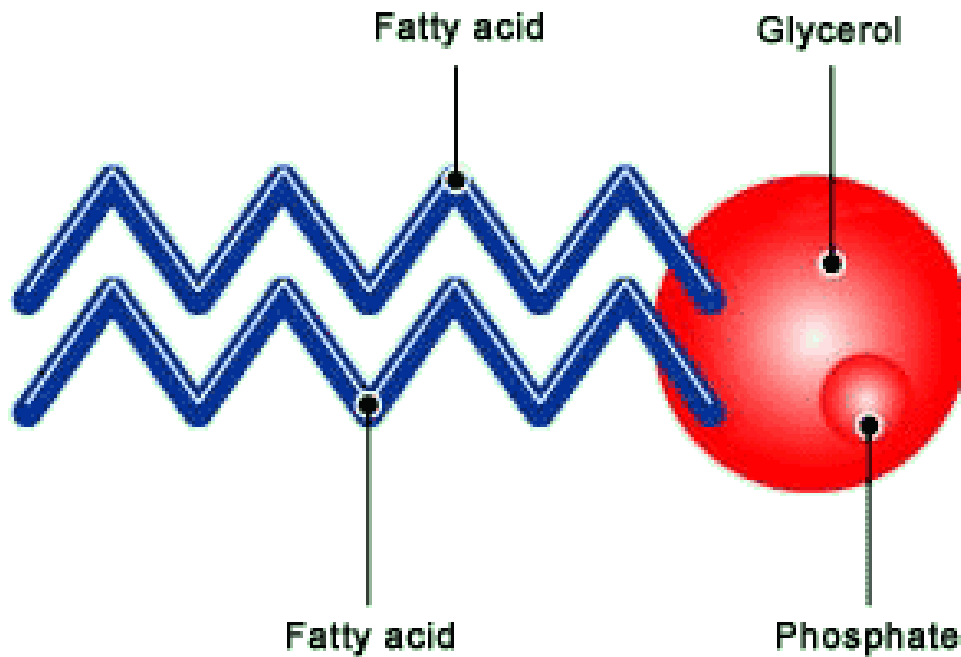
Generalized Phospholipid Structure



Head is a phosphate bonded to a glycerol



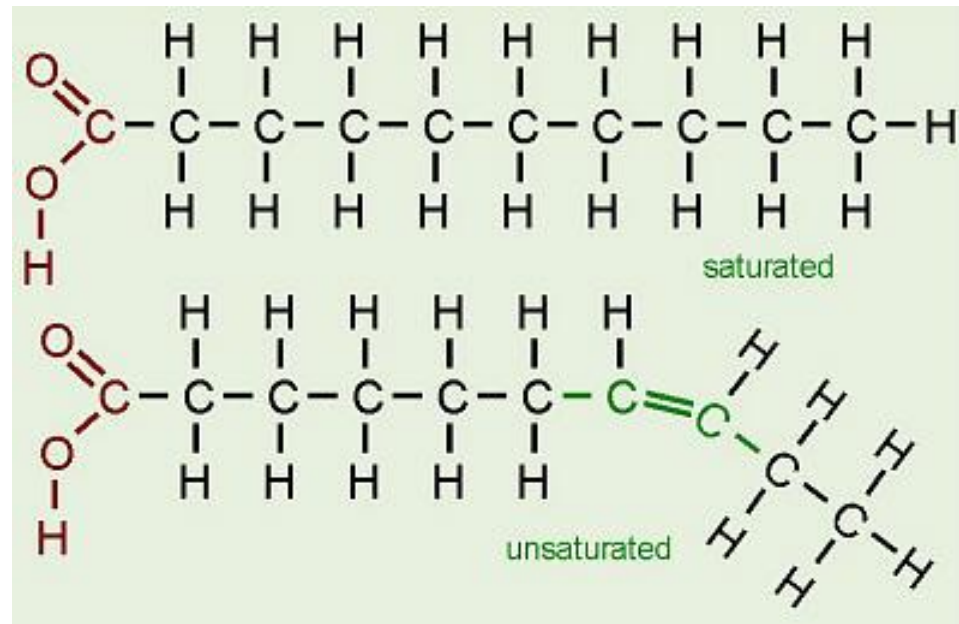
Tails are **fatty acids** (chains of hydrogen and carbon atoms, termed “**hydrocarbon chain**”)



Hydrocarbon tail can be saturated or unsaturated

- **Saturated**

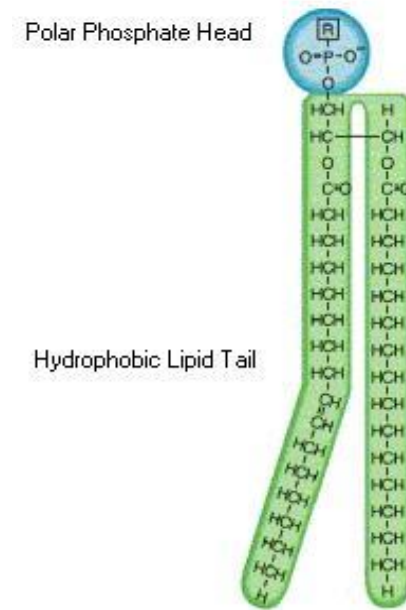
- Have as many hydrogen present as can bond to the carbons (so they lack double bonds between the carbons)
- Causes a straight chain (which decreases fluidity of the membrane)



Hydrocarbon tail can be saturated or unsaturated

- **Unsaturated**

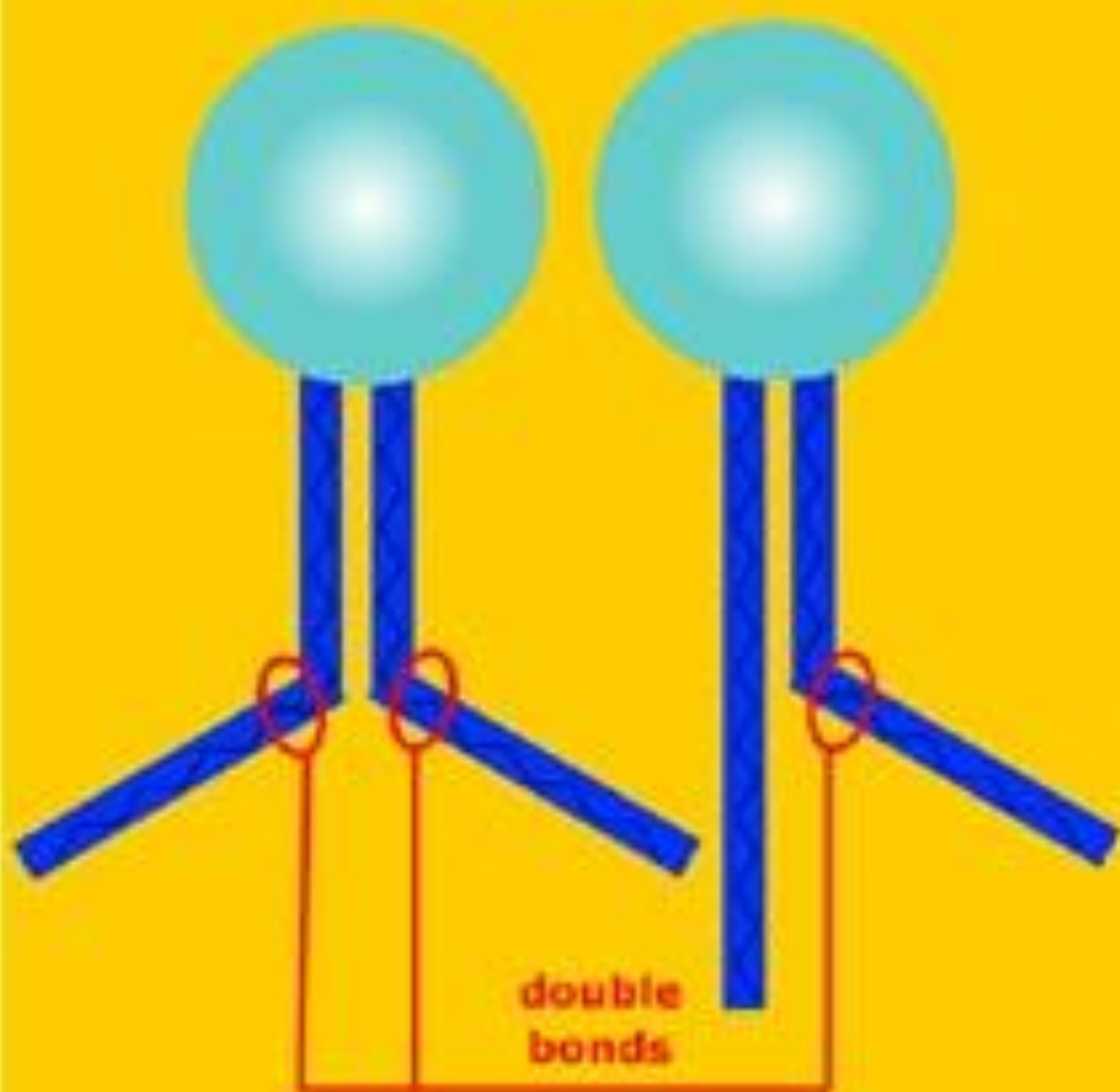
- Have fewer hydrogen present then can bond to the carbons (so there are double bonds between the carbons)
- Causes kinked chains (which increases fluidity in the membrane because kinks at the carbon-to-carbon double bond hinder close packing of phospholipids.)

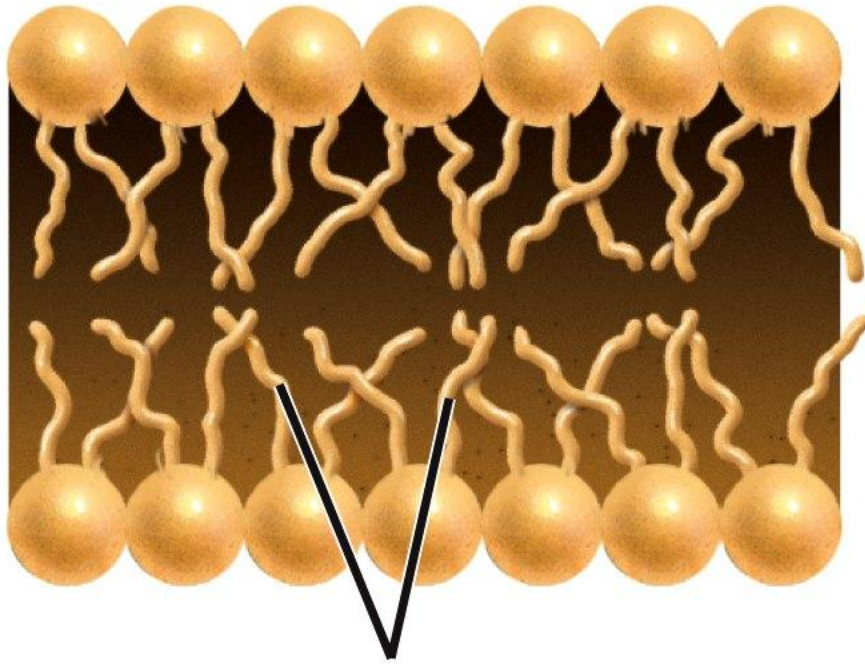


Saturated

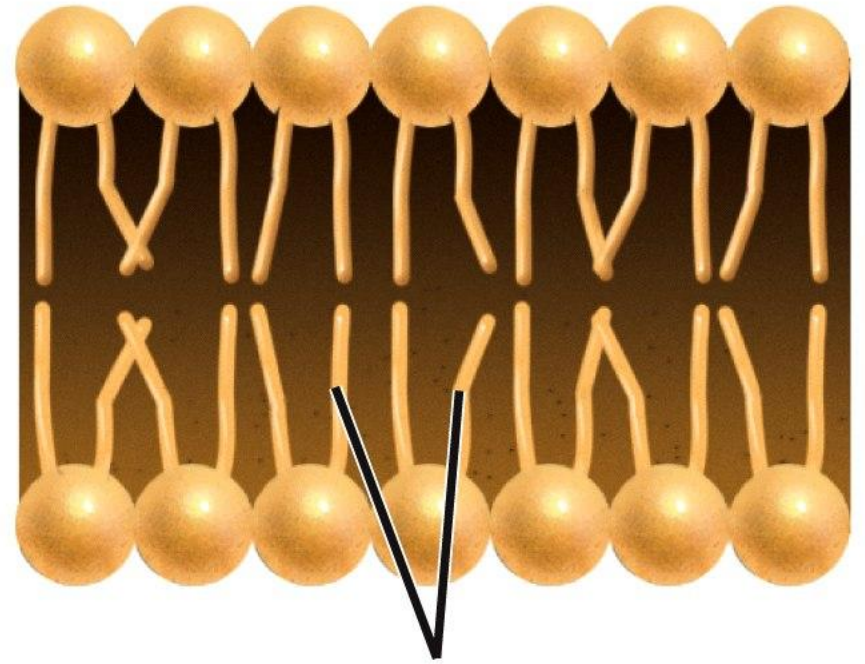


Unsaturated





more fluid

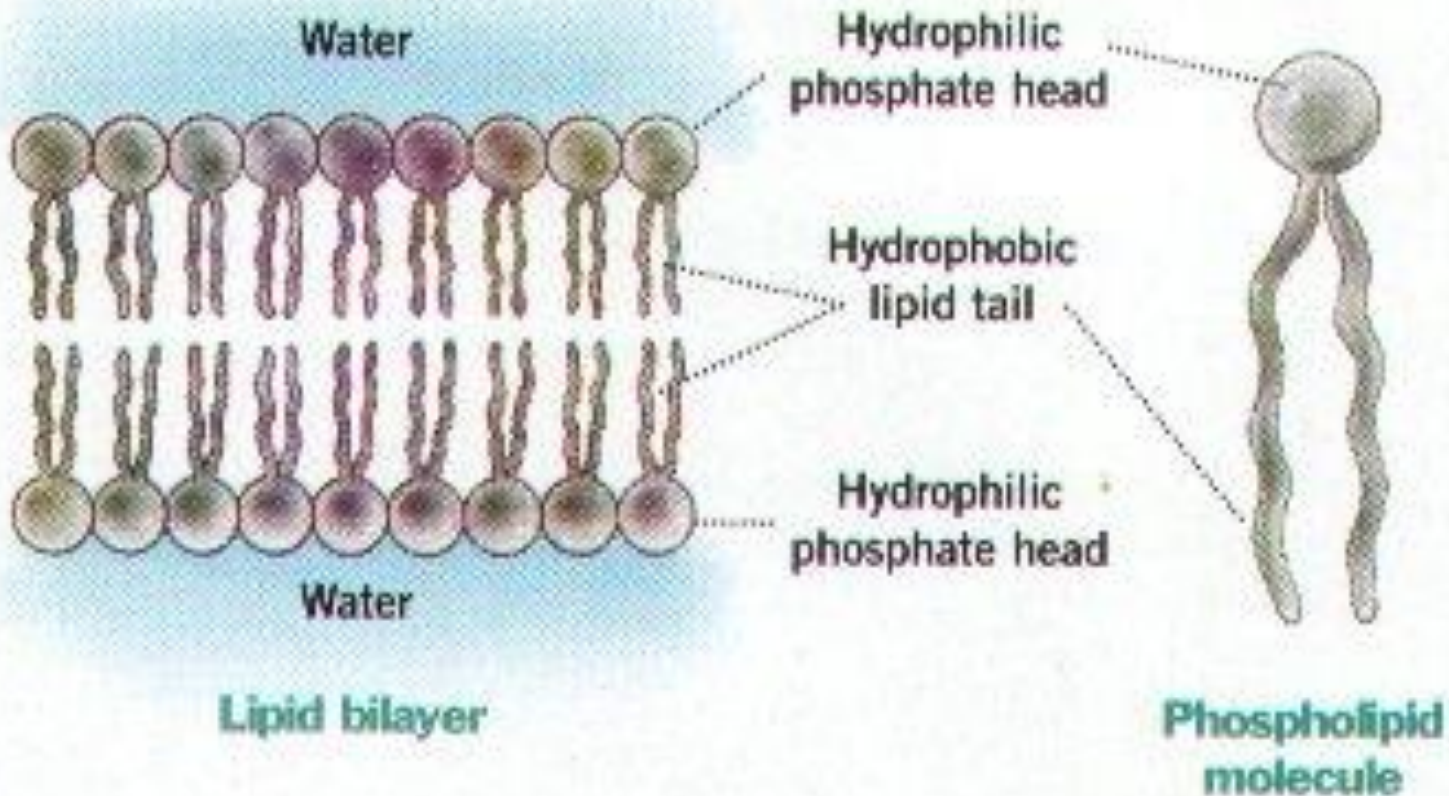


less fluid

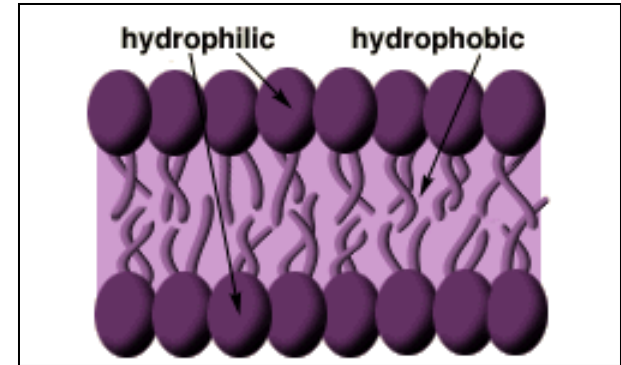
Figure 5-4 Biology: Life on Earth, 8/e
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The Phospholipid Bilayer

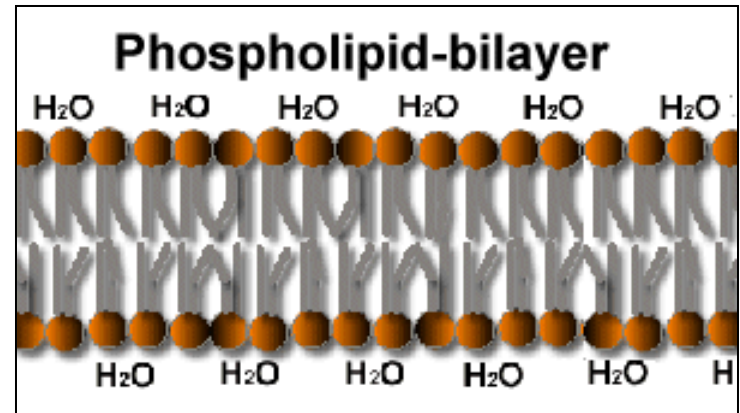
- The cell exterior and interior face watery environments



- **Hydrophilic** (“water loving”) head portions are exposed to water.

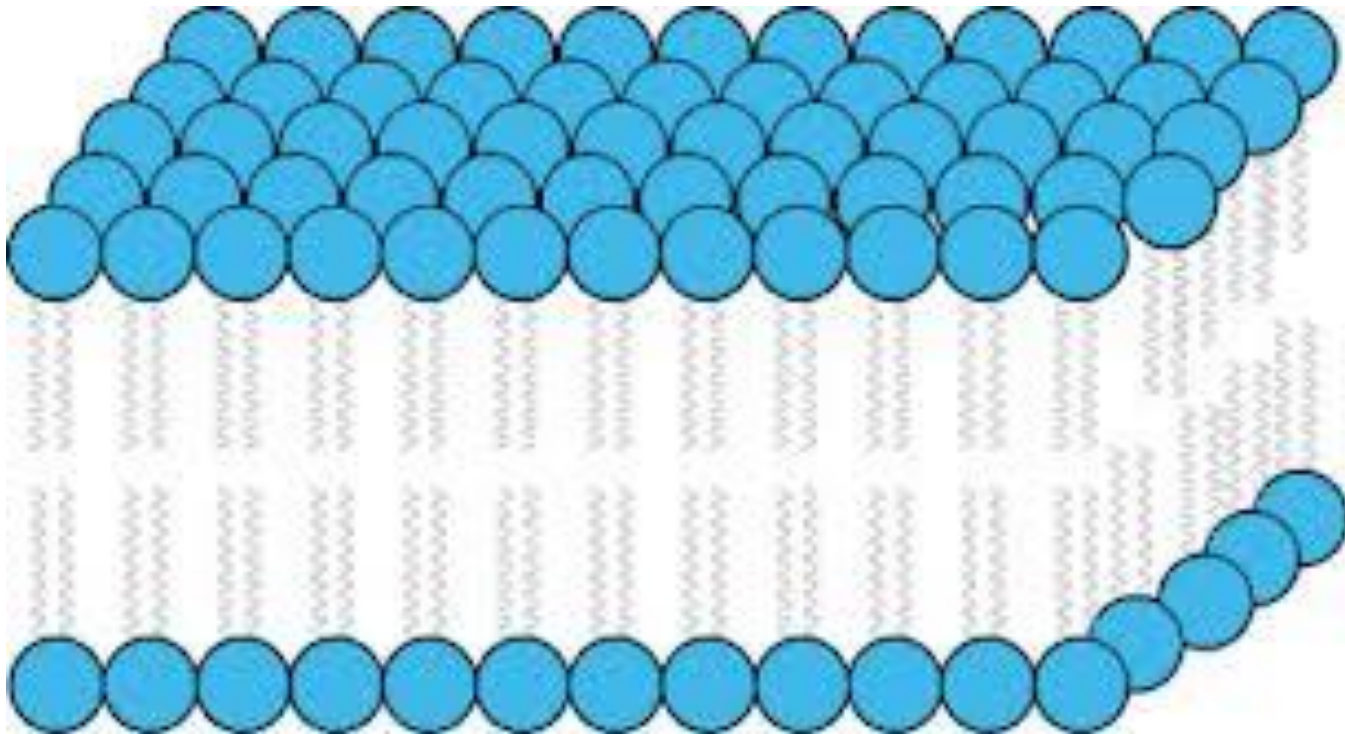


- **Hydrophobic** (“water fearing”) tail portions of are oriented inside the bilayer.



Phospholipids are “*amphipathic*”

- View the chemistry [definition of amphipathic here!](#)



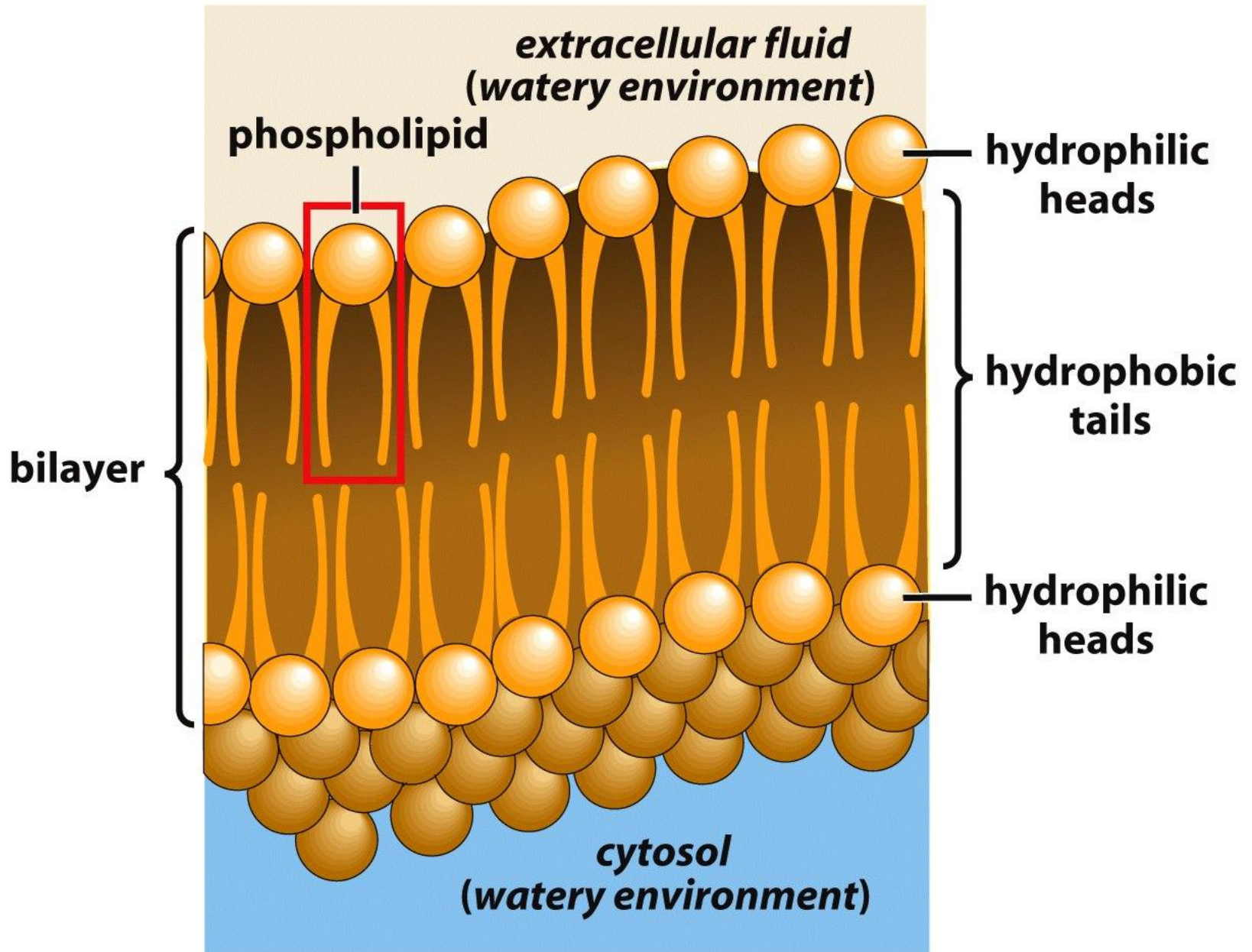


Figure 5-3 Biology: Life on Earth, 8/e
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