

Types of Lipids

- Triglycerides
- Waxes
- Phospholipids
- Sterols

REVIEW:

As a table group, use molecular model kits to build:

- Glycerol
- Saturated 4 carbon fatty acid
- Cis-unsaturated 4 carbon fatty acid
- Trans-unsaturated 4 carbon fatty acid

No stamp required

Keep for later, don't break them apart

Build a phospholipid using the paper models provided.
Tape/glue into your notes.

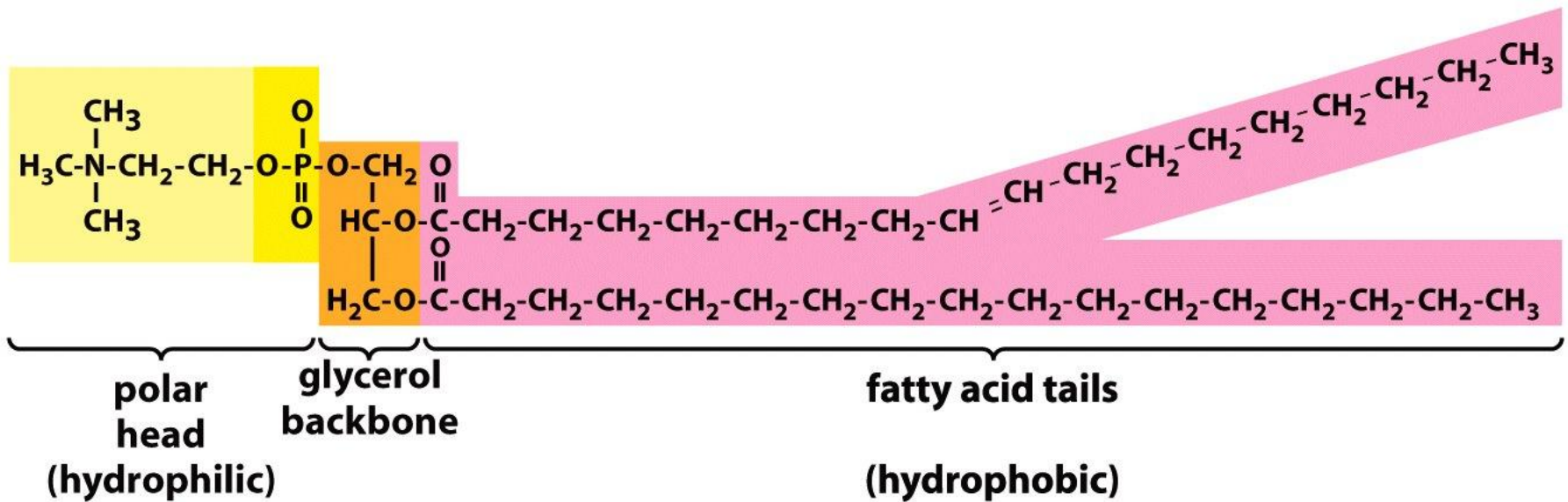
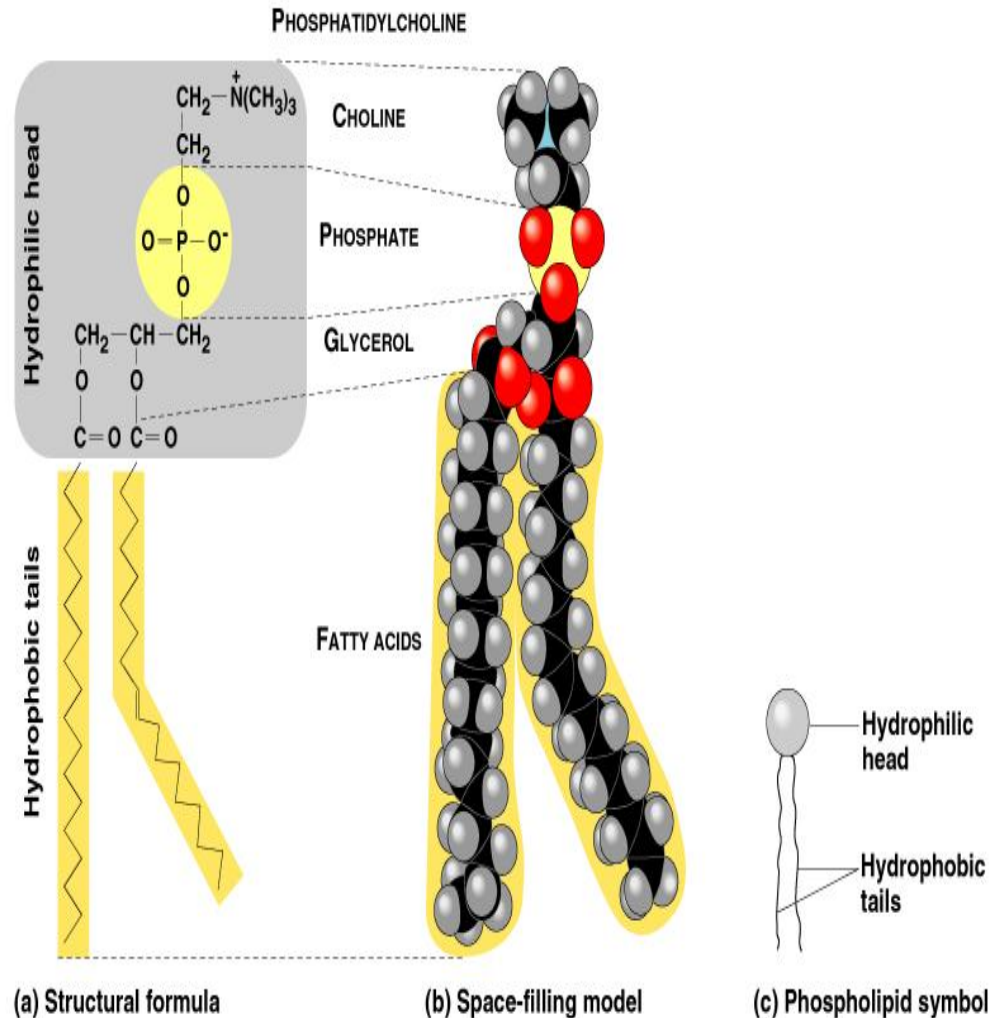


Figure 3-15 Biology: Life on Earth, 8/e
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Phospholipids

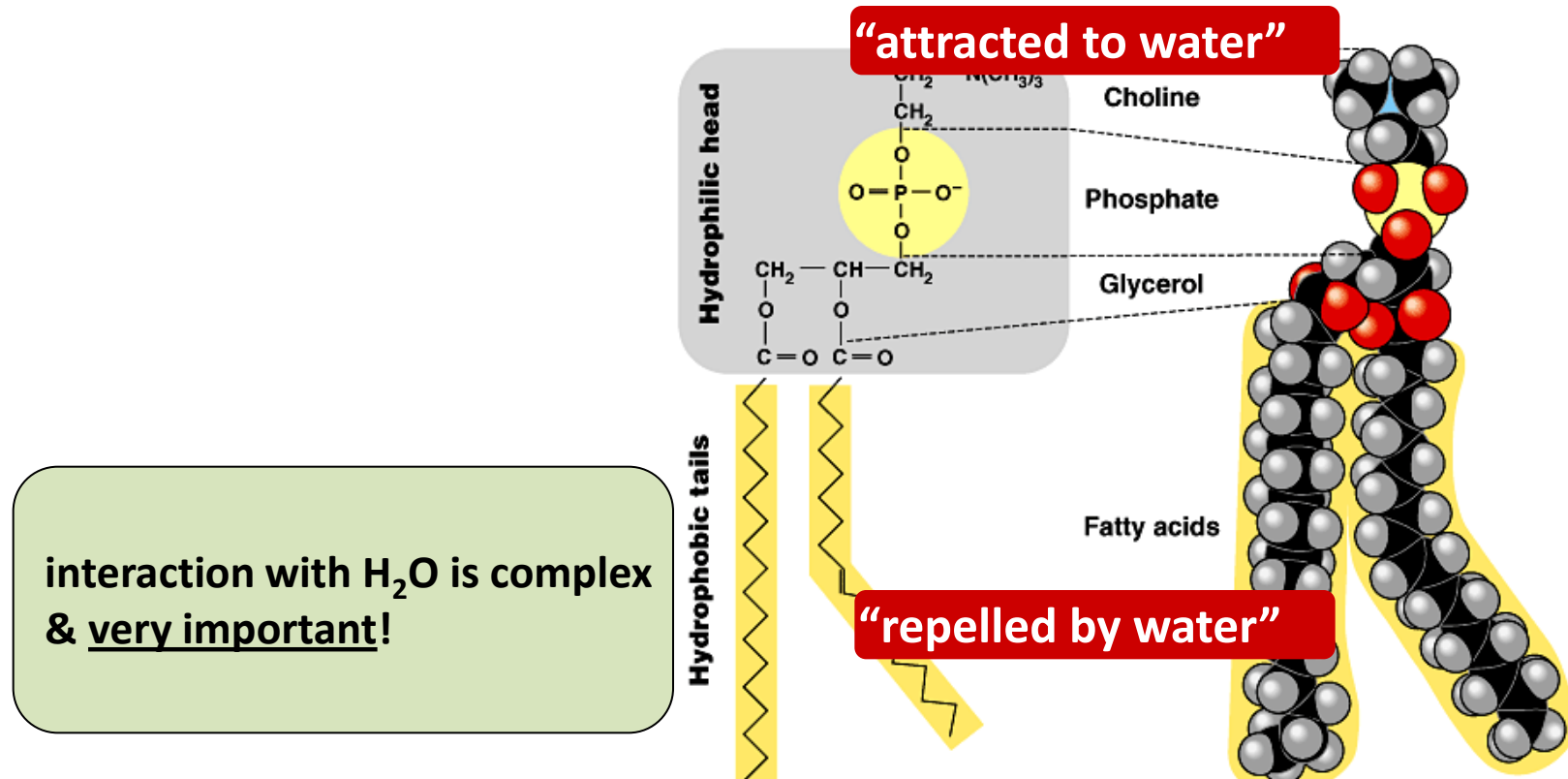
Formed by attachment of two fatty acids plus a phosphate group to a glycerol.

Are the main structural components of membranes.



Phospholipids

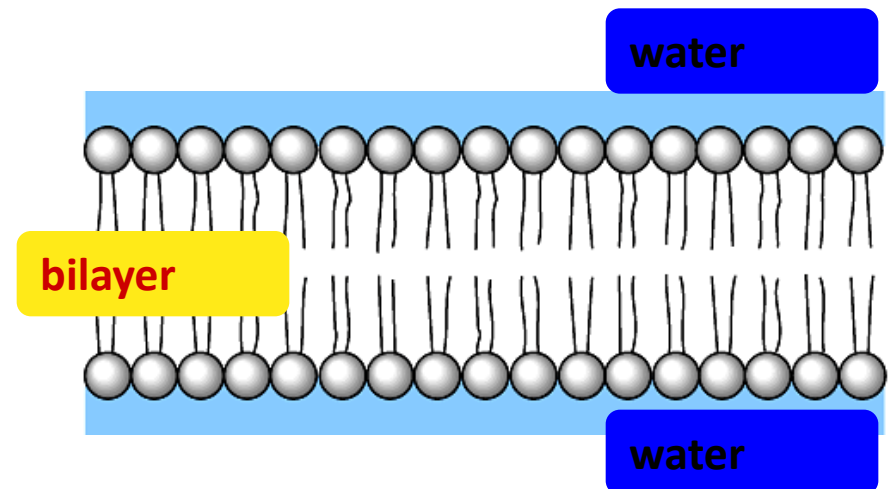
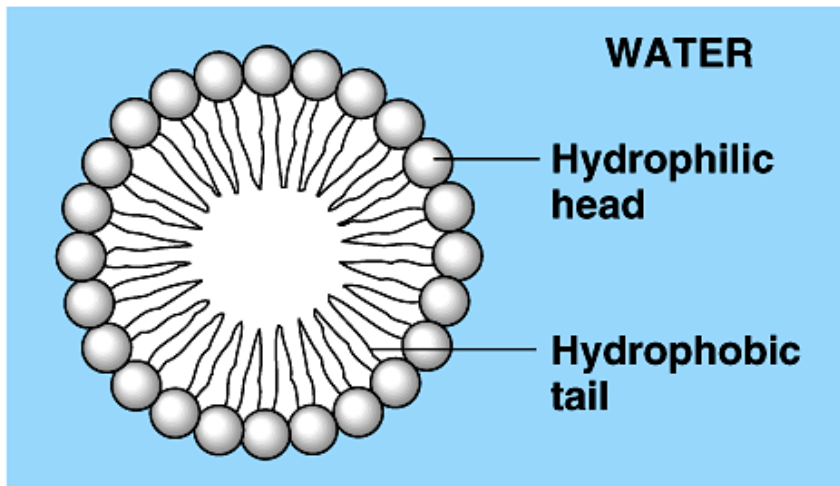
- Hydrophobic AND hydrophilic
 - fatty acid tails = Hydrophobic “hide” from H₂O
 - PO₄ head = Hydrophilic “attracted” to H₂O



Phospholipids in water

- can self-assemble into:
 - bubbles = “micelle”
 - can form a **bilayer**
 - early evolutionary stage of cells?

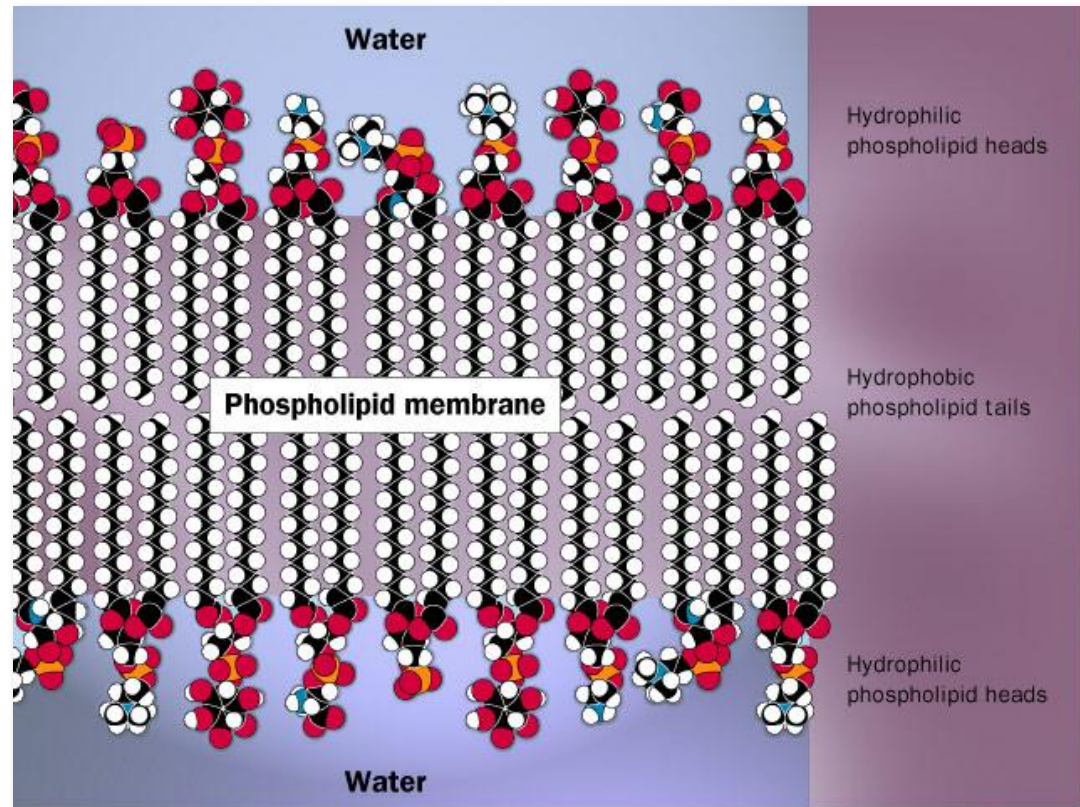
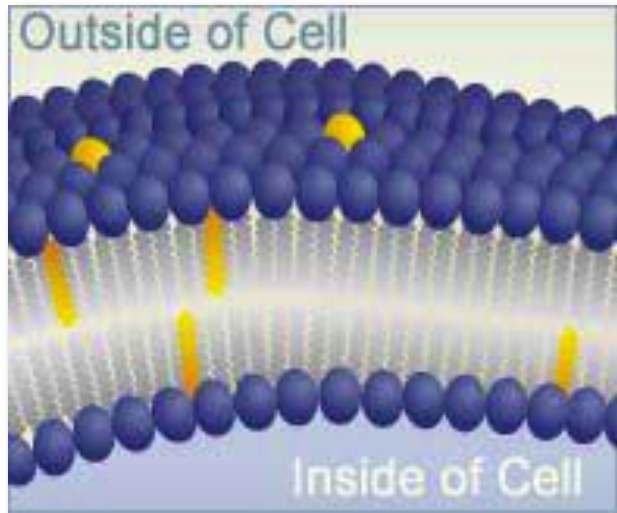
← Our next unit!



Why is this important?

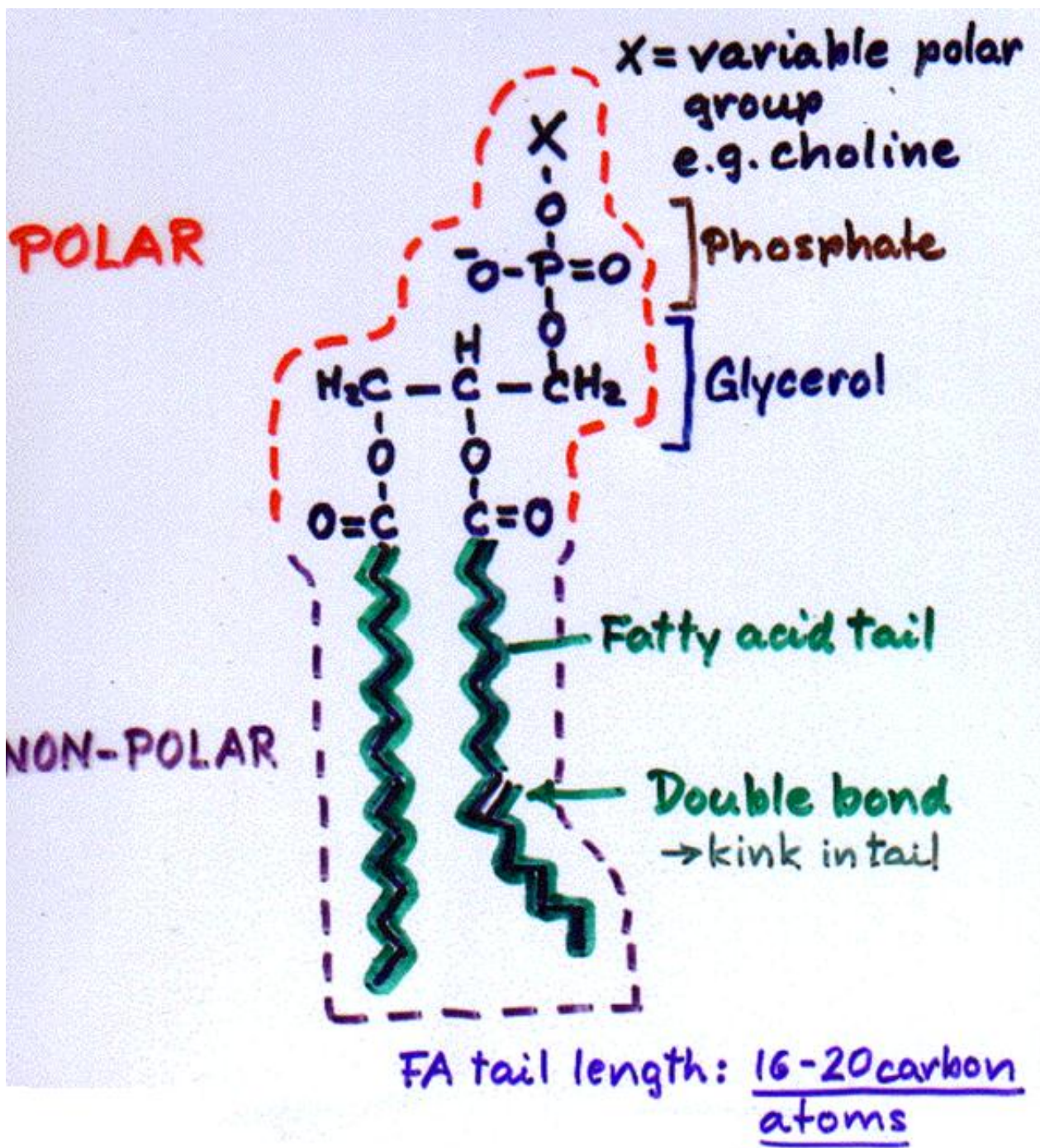
- Phospholipids create a barrier in water
 - define outside vs. inside
 - they make cell membranes!

Life is “organized”



Video

Draw and label a phospholipid:



BILL

Explain WHY phospholipid heads are hydrophilic and WHY phospholipid tails are hydrophobic.

Use the following words in your explanation:

Polar

Water

Non-polar

Fatty acid

Ion

Phosphate

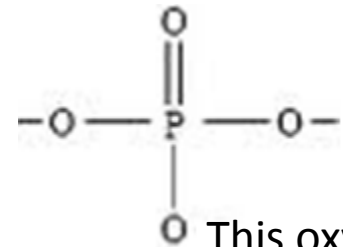
Hydrogen bond

BUILD A PHOSPHOLIPID!

Connect two fatty acids to a glycerol.

Connect a phosphate group (PO_4) off the open 3rd carbon of glycerol.

Stamp when complete.



This oxygen
connects to
the carbon