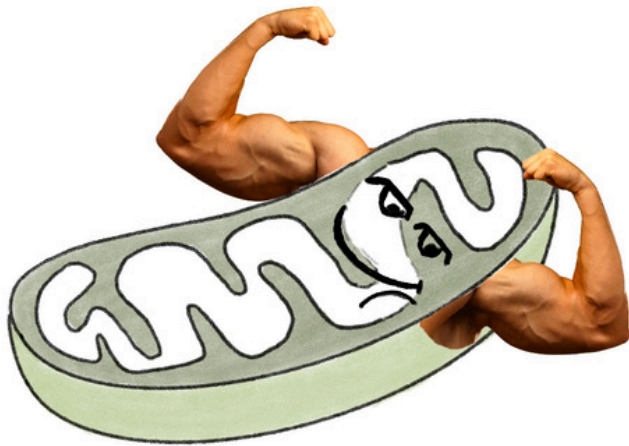


AP BIOLOGY

MACROMOLECULES

QUICK SUMMARY



There are 4 classes of macromolecules
you should know: Carbohydrates, lipids,
nucleotides, & proteins

CARBOHYDRATES

Monomer: monosaccharides

Polymer: polysaccharides

Carbon Hydrogen Oxygen

Function: energy storage & source,
structural support

LIPIDS

lipids aren't true polymers as they aren't made of repeating subunits.

However, many are made of fatty acids

"polymers": triglycerides, steroids, waxes, phospholipids

Carbon Hydrogen Oxygen Phosphorous

✓ not in all lipids!

Function: protection, cell membranes

NUCLEIC ACIDS

monomer: nucleotide

polymer: DNA & RNA

Carbon Hydrogen Oxygen Nitrogen Phosphorous

Function: store & express genetic
information

PROTEINS

monomer: amino acids

polymer: polypeptide

Carbon Hydrogen Oxygen Nitrogen

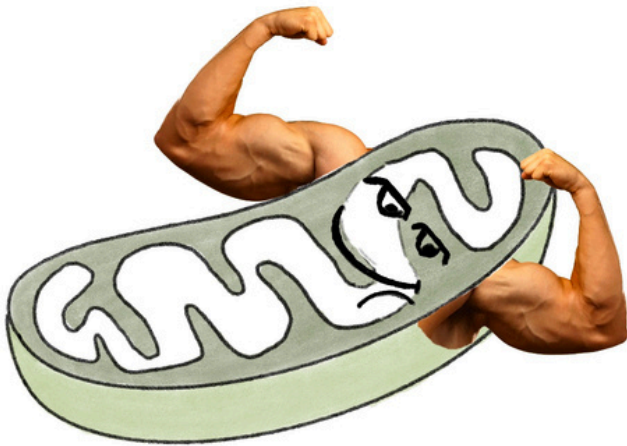
* other elements like P & S
are present sometimes!

Function: enzymes, structural components,
transporters, signaling molecules

AP BIOLOGY

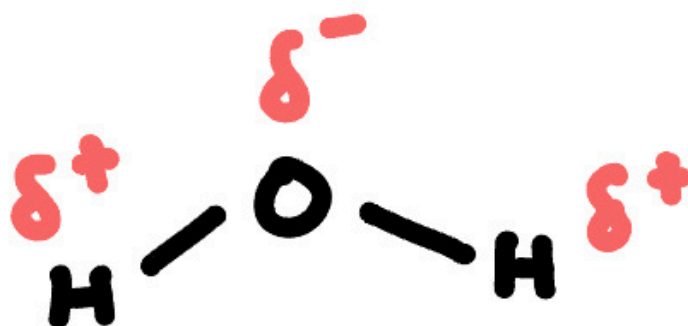
PROPERTIES OF WATER

REVIEW



POLARITY

→ water = polar molecule



(See AP Chem IMFs!)

→ forms hydrogen bonds, basis of all properties of water

COHESION & ADHESION

cohesion: water molecules hydrogen-bonding to **EACH OTHER**

→ creates surface tension (eg insects walking on water)

adhesion: water molecules hydrogen-bonding to **OTHER POLAR SURFACES**

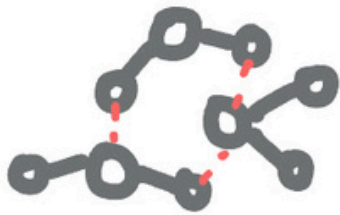
→ contributes to capillary action (eg. water going up a plant's xylem)



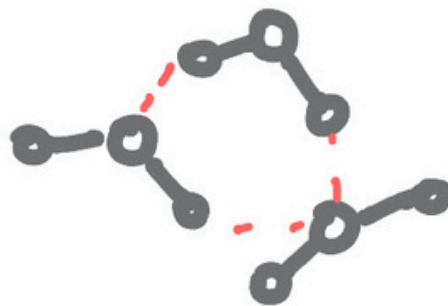
DENSITY OF ICE

→ water is **LESS** dense as a solid, ice floats

water



ice



-- = hydrogen bonds

→ spaced out hydrogen bonds, less densely packed than water

HIGH SPECIFIC HEAT

→ water can absorb/release lots of energy while resisting large temp changes

why? lots of energy goes into **BREAKING** hydrogen bonds before increasing temp

**follow for
more!**

