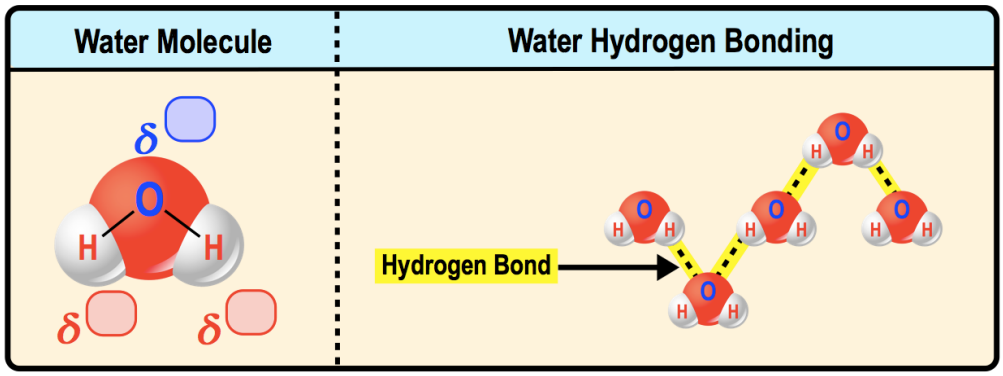
CONCEPT: INTRODUCTION TO WATER

●**Water**: a *small, polar* molecule with _____ *Hydrogen* atoms & _____ *Oxygen* atom (_____).

□ Has _____ *negative* & *positive* charges.

□ *Recall*: _____ *bonds* form between water molecules.

EXAMPLE: Water & its Hydrogen Bonding.



PRACTICE: Individual water molecules bind to each other through:

a) Covalent bonds. b) Ionic bonds**.** c) Hydrogen bonds. d) Hydrophobic bonds.

Emergent Properties of Water

●Water's hydrogen bonding gives rise to _____ emergent properties that are essential to maintain life on Earth:

Emergent Properties of Water
1 _____hesion, _____hesion & _____ tension.
2 _____ **density** of *solid* ice compared to *liquid* water.
3 _____ Specific Heat & Heat of Vaporization.
4 Used as a uiversal _____ in *mixed* solutions.

EXAMPLE: Which of the following is not an emergent property of water?

a) Adhesive and Cohesive properties.

b) Moderation of temperature.

c) High density of ice compared to liquid water.

d) Used as a universal solvent in chemical reactions.

PRACTICE: The emergent properties of water (cohesion, high heat capacity, good solvent) come from the fact that water is _____ and _____ hydrogen bond.

a) Polar, can. b) Polar, cannot. c) Non-polar, can. d) Non-polar, cannot.