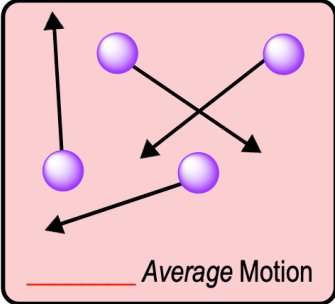
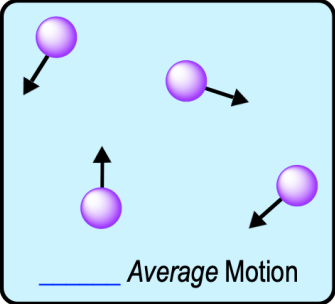




CONCEPT: PROPERTIES OF WATER: THERMAL

● **Kinetic Energy:** a measure of energy in the form of _____.

□ **Temperature:** the _____ *kinetic energy* of molecules in a solution.

□ _____ **Energy:** the _____ *kinetic energy* of molecules transferred as _____.

High Temperature	Low Temperature
	
_____ Average Motion	_____ Average Motion

Hot Coffee	Swimming Pool
	
High Temperature	Low Temperature
_____ Thermal Energy	_____ Thermal Energy

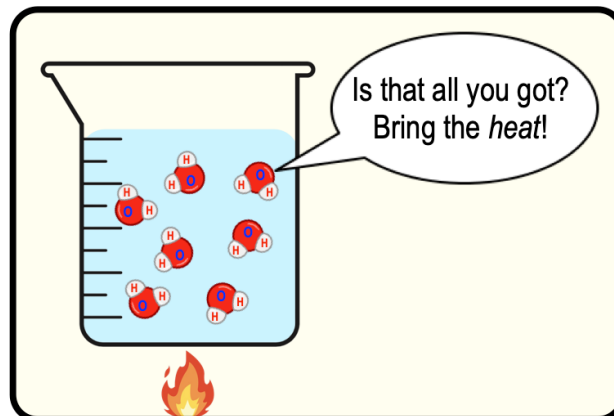
Water's High Specific Heat

● Water's _____ *specific heat* allows it to resist temperature changes.

□ _____ *Heat:* amount of *heat* required to raise/lower ____ gram of substance ____ degree Celsius ($^{\circ}\text{C}$).

□ Resisting temperature changes is critical for life to maintain _____.

EXAMPLE: Water's High Specific Heat.



PRACTICE: Which of the following is due to the high specific heat of water?

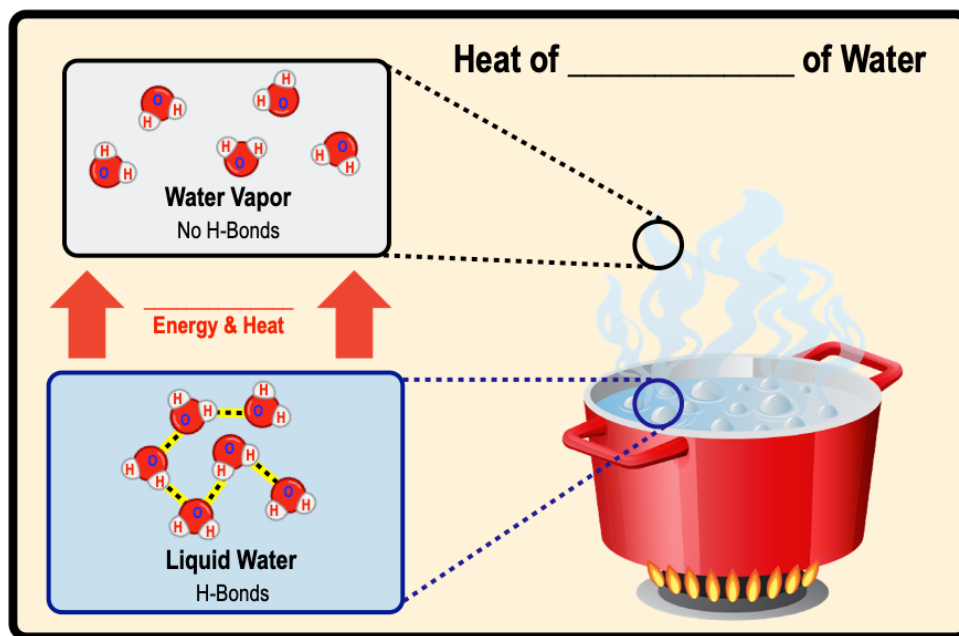
- a) Oil does not mix with water.
- b) A lake heats up more slowly than the surrounding environment.
- c) The high surface tension of water.
- d) Sugar dissolves in hot tea faster than in iced tea.

CONCEPT: PROPERTIES OF WATER: THERMAL

Water's High Heat of Vaporization

- _____ (or **Evaporation**): the phase transition from a *liquid* state to a _____ state.
 - **Heat of Vaporization**: amount of heat required to convert ____ gram of a liquid to a *gaseous* state.
 - Water has a _____ *heat of vaporization* due to the abundance of _____ bonds.

EXAMPLE: Water's Heat of Vaporization.



PRACTICE: Which if the following defines the term evaporation?

- The conversion of a liquid into a vapor.
- The conversion of a solid into a vapor.
- The conversion of a vapor into a liquid.
- The conversion of a vapor into a solid.

PRACTICE: Choose the correct statement: Liquid water _____.

- Is less dense than ice.
- Has a lower specific heat than most other molecules.
- Has a higher heat of vaporization than most other molecules.
- Is nonpolar.