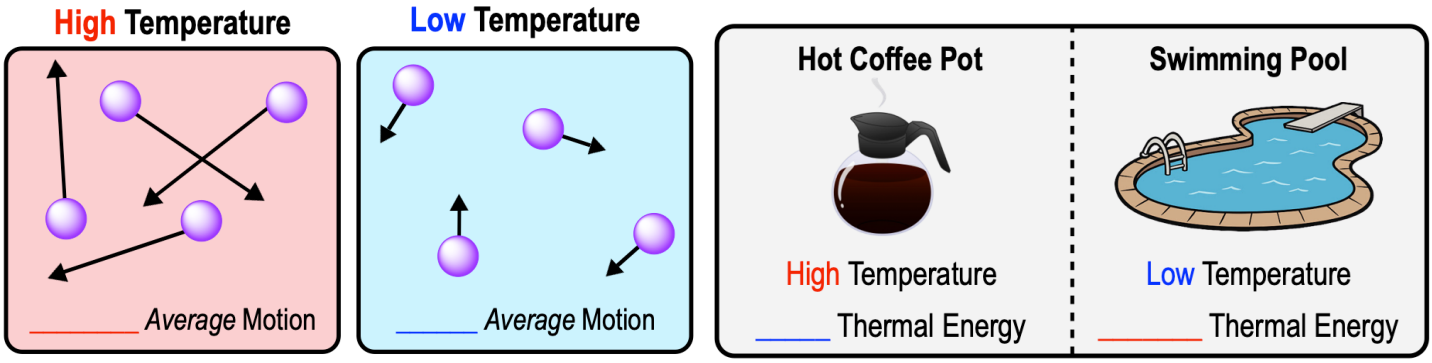
CONCEPT: PROPERTIES OF WATER: THERMAL

●**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 _____.



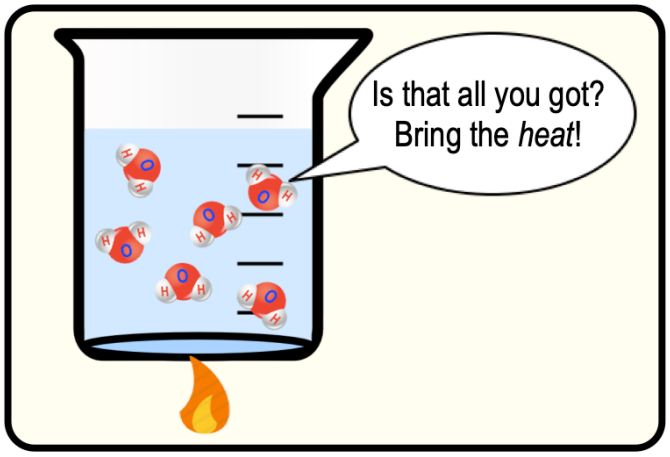
Water's High Specific Heat

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

□ _____ *Heat*: amount of *heat* required to raise/lower ___ gram of substance ___ degree Celsius (°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.

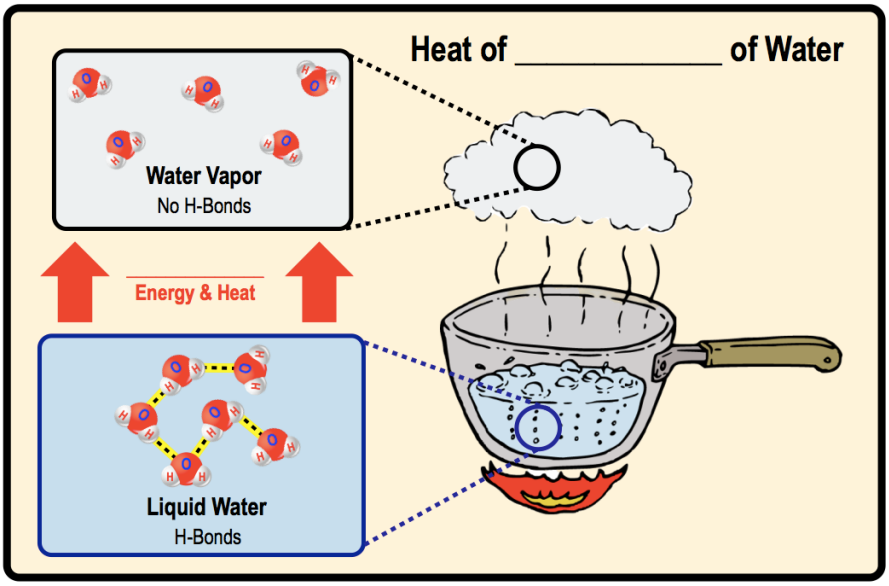
d) Sugar dissolves in hot tea faster than in iced tea.

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?

a) The conversion of a liquid into a vapor.
b) The conversion of a solid into a vapor.
c) The conversion of a vapor into a liquid.
d) The conversion of a vapor into a solid.

PRACTICE: Choose the correct statement: Liquid water _____.

a) Is less dense than ice.
b) Has a lower specific heat than most other molecules.
c) Has a higher heat of vaporization than most other molecules.
d) Is nonpolar.