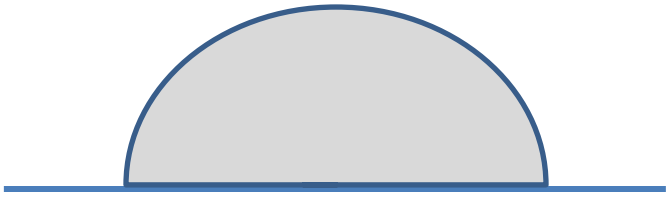
1. Illustrate the difference in heating a mass of water to boiling compared to a different substance with a lower heat of vaporization.

2. Illustrate the change in density of a mass of water as it freezes.

3. What is the specific heat of water? How much energy would be required to increase the temperature of 2 g of water by 1 °C?

4. Illustrate the interaction between water molecules inside of a water drop.



5. Ethanol has a higher vapor pressure than water. In a solution of water and ethanol, compare the partial pressures of the vapors of the two substances. Which is higher and why?

What Makes Water Special

1. Water has a high heat of vaporization and _____
   - _____ is the amount of heat that must be absorbed for a quantity of water to vaporize at a constant temperature.
   - Therefore, it takes a great amount of _____ for water to make this phase change, relative to other substances.
2. The density of water _____ as it solidifies
   - We know that solids are supposed to be _____ dense than liquids, but unlike most other substances on earth, water actually _____ as it freezes (meaning that while mass stays the same, the volume _____).
   - Therefore, the density of water actually _____ as it freezes.
3. Water has a very high _____
   - Specific Heat - The amount of _____ required to increase the temperature of _____ of a substance by _____
4. Water has _____ surface tension
   - Surface tension is the _____ force at the surface of a liquid that serves to reduce surface area. Because water has unusually high surface tension, this force is even stronger than it is in other substances.
5. Water has a very _____ vapor pressure
   - The pressure exerted by a _____ (gas) that is in contact with its liquid (or solid) form and is _____ between the two phases is referred to as the _____.