B. Solutions and Suspensions (mixtures)

1. mixture: two or more substances that are physically combined; not chemically combined. Ex. sand and salt or salt and water

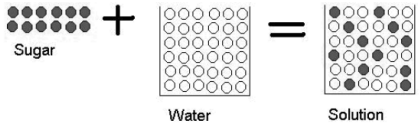
2. Two types of mixtures:

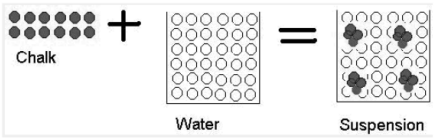
a. solution: one or more substances dissolved in another

1. solvent: does the dissolving (water)
2. solute: gets dissolved (salt)
3. particles in solution are very small and will not settle out
4. cytosol, plasma, seawater

b. suspension: one or more substances spread through another; not dissolved

1. particles are larger than in a solution
2. particles may settle out
3. Blood and cytoplasm





C. Acids, Bases and pH

1. pH Scale: measures the concentration of H+ ions in a solution
   a. concentration = density (amount per volume)
   b. Scale: 0 (acids) 7 (bases) 14
   H_2O

2. Water
   a. has equal amounts of H^+ and OH^- ions (neutral pH= 7)
3. Acids: form H^+ ions when dissolved in water
   a. the more H^+ produced, the stronger the acid (low pH)
   b. acids have a pH< 7; the lower pH, the stronger the acid
   c. HCl, ascorbic acid, acetic acid, sulfuric acid
4. Bases: form OH^- ions when dissolved in water
   a. the more OH^- ions produced, the stronger the base (high pH)
   b. bases have pH> 7; the higher the pH, the stronger the base
5. Buffers: weak acids or weak bases that help to regulate the pH of a solution. ex. Blood pH is 7.4, buffers dissolved in blood regulate the pH.