1. Scientific Method:
   1. Steps:
      1. Observe/Question
      2. Hypothesis (Formed in a Prediction Statement)
      3. Observation
      4. Analysis
      5. Share yoru results
   2. Experimental Groups: The factor that you change in a group to see how your hypothesis affects it
   3. Control Group: The group that doesn’t change in an experiment
   4. Independent: Not Affected Dependendent: Affected
   5. Qualitative vs. Quantitative
      1. Qualitative: Factor which is manipulative. It is the observation analysis from an experiment. Things that you see
      2. Quantitative: Factor which is measured. Basically the measurements from your experiment
2. Basic Chemistry
3. Properties of Water:
   1. Polar Molecule: Water is polar molecule that has a positive and negative charge because of electronegativity. It has two lone pairs and the oxygen is pulling from the Hydrogen into its vicinity, making it a slightly negative and positive
   2. Emergent Properties of Water:
      1. Cohesion: Water sticks to itself
         1. Surface Tension is a byproduct of cohesion
      2. Adhesion: Attraction of one substance to another
      3. Specific Heat: Amount of energy needed to raise 1 gram of a substance + degree celcius. Water has a high specific heat and absorbs much energy. Acts of a heat bank and moderates global climate
      4. Heat of Vaporization: The amount of energy needed to vaporize water. When it vaporizes, it pulls much heat energy along with it
      5. Less Dense as Solid: Water > Ice. Water freezes when molecules are no longer moving fast enough to break H-Bonds. Ice is 10% less dense
      6. “Universal Solvent” – The positive and negative charges that surround the ions that were forming ionic bonds don’t share. Thus water is a good solvent
      7. Hydrophilic: Water Loving. Polar or ionic. Substances do not dissolve
      8. Hydrophobic: Water fearing; non polar, oils, fats
      9. pH scale
         1. Log scale which measures the molarity of Hydrogen Ions. pH decreases as H-Ions increase. Water has a pH of 7.
         2. Base reduces the number of protons in a solution by bonding with them.
4. Organic Macromolecules
   1. Hydrolosis and condensation reactions: