Chemistry - Mrs. Bauck, PHUHS

Unit 9: Acids, Bases, and pH (Chapter 17)

State Standards (*** = Chem 1H only)

Topic1: Acid-Base Theory and

Topic2: Ion Concentration and pH

SC.912.P.8.11 (AA) Relate acidity and basicity to hydronium and hydroxide ion concentration and pH.

4.0	Extensions/Applications	Students will be able to: ☐ Research the chemical formulas and properties of ten different indicators. ☐ (Chem I regular) - Work advanced pH problems with log/antilog needed. ☐ Research the effects of acid deposition on terrestrial and aquatic ecosystems. ☐ Name any acid formula not previously familiar with, using the acid naming rules. ☐ Explain in detail how acidic and basic anhydrides work.
3.0	Learning Goal (Derived from State Standard)	Students will be able to: ☐ Define acids and bases using the Bronsted-Lowry and Arrhenius definitions. ☐ Define pH. ☐ Calculate pH, pOH, [H+], [OH-] using the pH equation. ☐ (Chem 1H) Work advanced pH problems with log/antilog needed. ☐ Differentiate between acids and bases and classify a substance as acidic, basic or neutral based on its pH, [H+] or [OH-]. ☐ State which pH numerical values correspond to acid, base, or neutral. ☐ Distinguish between strong and weak acids/bases based upon extent of dissociation. ☐ Differentiate between strength of acids/bases and concentration of acids/bases. ☐ Write and balance double displacement neutralization reactions. (ACID + BASE → WATER + SALT) ☐ Perform a titration lab and describe what is happening.

2.0	Required Skills or Background Knowledge to accomplish Learning Goal	Students will be able to: □ Be able to identify six major acids, write their chemical formulas, and dissociate/"uncrisscross" them as needed: hydrochloric, acetic, nitric, carbonic, sulfuric, and phosphoric acids. □ (Chem 1H) – Be able to name any acid according to the naming rules. □ Use the periodic table to identify metals and nonmetals. □ Determine the charge of a monatomic ion based on its placement in periodic table. □ Identify selected polyatomic ions and name them, and vice versa. □ Be able to name and write chemical formulas for ionic compounds (BI, TI, OTHER). □ Explain how the interactions between water molecules accounts for the unique properties of water. □ Identify the types of substances that will dissolve in water.
1.0	With help from the teacher, student has partial success with the goal	With help from a teacher, students will be able to: □ Achieve partial success with 2.0 and/or 3.0.
0.0	Even with help, the student has no success with the goal	□ Even with help, student is unable to understand or complete any of the skills in scales 1.0 through 4.0.