**Lesson Plan Title: Ionic Bonding Chemical Formula practice**

**Teacher’s Name: Mr.Gomez Subject/Course: Chemistry**

**Unit: Bonding Grade Level: College Prep/Honors**

**Overview of and Motivation for Lesson:**

Click here to enter text.

|  |  |  |
| --- | --- | --- |
| **Stage 1-Desired Results** | | |
| **Standard(s):**  HS-PS1-2. Use the periodic table model to predict and design simple reactions that result in two main classes of binary compounds, ionic and molecular. Develop an explanation based on given observational data and the electronegativity model about the relative strengths of ionic or covalent bonds. Clarification Statements: \* Simple reactions include synthesis (combination), decomposition, single displacement, double displacement, and combustion. \* Predictions of reactants and products can be represented using Lewis dot structures, chemical formulas, or physical models. \* Observational data include that binary ionic substances (i.e., substances that have ionic bonds), when pure, are crystalline salts at room temperature (common examples include NaCl, KI, Fe2O3); and substances that are liquids and gases at room temperature are usually made of molecules that have covalent bonds (common examples include CO2, N2, CH4, H2O, C8H18). | | |
| **Aim/Essential Question:**   * How is converting chemical formula to chemical compound useful for scientists? | | |
| **Understanding(s):**  *Students will understand that . . .*   * Each anion or cation has a charge * Chemical formula must be reduced to smallest whole number * Ionic Bonds occur between a metal and nonmetal/polyatomic * A cation/anion Charge is used to determine chemical formula | | |
| **Content Objectives:**  *Students will be able to . . .*   * Write a chemical formula when given the ionic compound name * Identify Cation and Anion in each ionic compound * Obtain the simplified chemical formula for ionic compounds * Use mathematics to calculate the missing charges of a non-metal or polyatomic | | **Language Objectives:**  ELD Level 3 *Students will be able to . . . in English*   * Describe the steps involved with writing chemical formulas to a partner   ELD Level 2 *Students will be able to . . . in English*   * Predict the components of a chemical formula based upon the compound name |
| **Key Vocabulary**   * Cation * Anion * Compound * Ionic Bond * Metal * Nonmetal | | |
| **Stage 2-Assessment Evidence** | | |
| **Performance Task or Key Evidence**   * Students will do worksheet in partners or by themselves * Students will participate in teacher discussion and answer the teachers questions | | |
| **Key Criteria to measure Performance Task or Key Evidence**   * Students will do worksheet and answer 80% of the them correctly | | |
| **Stage 3- Learning Plan** | | |
| **Learning Activities:**  Do Now/Bell Ringer/Opener: Click here to enter text.  Students will take out plickers and answer three questions  What is the Chemical Name for KI?  What is the name of the chemical Sr3N2 ?  Learning Activity 1:  Students will take out periodic table and a piece of paper and start writing down three examples that are on the board.  Calcium Oxide  Rubidium Selenide  Barium Phosphide  Calcium Carbide  Magnesium Sulfide  Lithium Hydroxide LiOH(Write out formula to demonstrate solving for an unknown charge)  Magnesium Sulfate MgSO4  Copper(II) Bromide\*  Vanadium(II)Chloride\*  \*=Honors only  Learning Activity 2:  Students will then be given a worksheet for classwork/ homework that will help out the students with turning compound names to chemical formulas.  The teacher will walk around the students and ask the students if they are understanding the questions  Application  **Writing Chemical formula and balancing the chemical equations allow students to apply this knowledge in balancing chemical equations**  Summary/Closing  **If today we converted from chemical formula to compound name, what do you think we will be doing tomorrow?**  **Multiple Intelligences Addressed:**   |  |  |  |  | | --- | --- | --- | --- | | Linguistic | Logical-Mathematical | Musical | Bodily-kinesthetic | | Spatial | Interpersonal | Intrapersonal | Naturalistic |   **Student Grouping**  Whole Class  Small Group  Pairs  Individual  **Instructional Delivery Methods**  Teacher Modeling/Demonstration  Lecture  Discussion  Cooperative Learning  Centers  Problem Solving  Independent Projects | | |
| **Accommodations**  Click here to enter text. | **Modifications**  Click here to enter text. | |
| **Homework/Extension Activities:**  The worksheet assigned for classwork is the homework for the next day | | |
| **Materials and Equipment Needed:**   * Naming Ionic Bond Worksheet * Markers | | |

**Adapted from Grant Wiggins and Jay McTighe-*Understanding by Design***