**Lesson Plan Title: Coulombs Law**

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

**Unit: Electron Configuration & Periodicity Grade Level: College Prep/Honors**

**Overview of and Motivation for Lesson:**

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| **Stage 1-Desired Results** | | |
| **Standard(s):**   |  | | --- | | HS-PS1-1. Use the periodic table as a model to predict the relative properties of main group elements, including ionization energy and relative sizes of atoms and ions, based on the patterns of electrons in the outermost energy level of each element. Use the patterns of valence electron configurations, core charge, and Coulomb’s law to explain and predict general trends in ionization energies, relative sizes of atoms and ions, and reactivity of pure elements. Clarification Statement: \* Size of ions should be relevant only for predicting strength of ionic bonding. State Assessment Boundary: \* State assessment will be limited to main group (s and p block) elements. | | | |
| **Aim/Essential Question:**   * How are periodic trends useful for scientists? | | |
| **Understanding(s):**  *Students will understand that . . .*   * Opposites react in an atomic model * Electrons are attracted to the protons in a nucleus which help determine an atoms relative size | | |
| **Content Objectives:**  *Students will be able to . . .*   * Apply Coulombs Law to periodic trends * Answer questions related to Periodic Table in complete sentences | | **Language Objectives:**  ELD Level 5 *Students will be able to . . . in English*   * Apply Coulombs law to periodic atomic size in periodic table   ELD Level 1 *Students will be able to . . . in English*   * Listen to video and answer questions in bullet points |
| **Key Vocabulary**   * Coulomb’s Law * Periodic Law | | |
| **Stage 2-Assessment Evidence** | | |
| **Performance Task or Key Evidence**   * Students will work on POGIL in pairs or individually and complete the assignment | | |
| **Key Criteria to measure Performance Task or Key Evidence**   * Students will be able to answer POGIL questions completely and get 90% on the assignment | | |
| **Stage 3- Learning Plan** | | |
| **Learning Activities:**  Do Now/Bell Ringer/Opener: None  Learning Activity 1:  Students will watch mystery of matter video Episode 2 and answer questions 1-9 and hand it in at the end of the class  Activity should take around 26 minutes  Learning Activity 2:  Students will do Coulombic Attraction Model 1 questions 1-5 and Model 2 questions 6-8 in pairs or individually  Application  Click here to enter text.  Summary/Closing  **How does the modern periodic table and Mendeleev Periodic table differ**  **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**  None | **Modifications**  None | |
| **Homework/Extension Activities:**  None | | |
| **Materials and Equipment Needed:**   * Columbic Attraction POGIL * Movie questions 1-8 for Episode 2 of Mystery of Matter * TV | | |

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