**Lesson Plan Title: Electron Configuration POGIL**

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

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

**Overview of and Motivation for Lesson:**

**Electron Configuration helps understand how elements are grouped**

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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:**   * Do elements with the same electron configuration ending have similar properties? | | |
| **Understanding(s):**  *Students will understand that . . .*   * Electron Orbitals fill the bottom first before moving onto the next level * Electrons must have opposite spins in orbitals * Electrons must occupy each orbital with one electron before pairing up | | |
| **Content Objectives:**  *Students will be able to . . .*   * Apply Hund’s rule, Pauli Exclusion Principle and Aufbau Rule to justify examples * Write Electron Configuration for elements * Fill in Orbital diagram for elements | | **Language Objectives:**  ELD Level 3 *Students will be able to . . . in English*   * Discuss with students their thoughts on the correct answer   ELD Level 5 *Students will be able to . . . in English*   * Critique other student’s incorrect answers and provide an explanation to why it is wrong in writing |
| **Key Vocabulary**   * Hunds Rule * Aufbau Principle * Orbitals * Pauli Exclusion Principle | | |
| **Stage 2-Assessment Evidence** | | |
| **Performance Task or Key Evidence**   * Students will work together and solve the POGIL by discussing aloud and conferring with other groups | | |
| **Key Criteria to measure Performance Task or Key Evidence**   * Groups will answer all questions on the POGIL correctly * Students will be peer evaluated on doing their roles | | |
| **Stage 3- Learning Plan** | | |
| **Learning Activities:**  Do Now/Bell Ringer/Opener: Students will take Plicker cards from their folders and answer two questions about electron configuration    What is the electron configuration for Neon?  What is this element? 1s2 2s22p63s23p3  For honors What is the electron configuration of copper?  Learning Activity Day 1:  Teacher will pass out POGIL and display group members on the TV. Students will get into groups and finish POGIL model 2 #6-12  Learning Activity Day 2:  Teacher will pass out POGIL and display group members on the TV. Students will get into groups and finish POGIL model 2 #13-15    Application  **Elements with same electron configuration are part of similar family and have same properties**  Summary/Closing  **Teacher will mention the essential question at the end of day two and ask Why do they think this way?**  **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**  If students are done early on the first day, then they can start the second day problems  If students are done early on the second day then they will take out piece of paper and take notes on Periodic trends | |
| **Homework/Extension Activities:**  Reading on Periodic Trend | | |
| **Materials and Equipment Needed:**   * POGIL * Group roles * Question Cards * Desks in groups | | |

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