**Lesson Plan Title: Periodicity**

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

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

**Overview of and Motivation for Lesson:**

**Periodic Trends help scientists use properties with bonding and ions**

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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 . . .*   * Atomic Radius increases as going down and decreases as going down * Ion Radius increases as going down and increases going across a period * Electronegativity decreases going down a group and increases going across a period * Ionization energy decreases going down a group and increases going across a period * Reactivity increases going down a group and decreases across a period for metals * Reactivity increases going up a group and increases going across a period for non-metals | | |
| **Content Objectives:**  *Students will be able to . . .*   * List the periodic trends in their notes with the definition * Label periodic trends on their periodic table | | **Language Objectives:**  ELD Level 1 *Students will be able to . . . in English*   * Describe periodic trends by saying in own words whether it decreases or increases   ELD Level 4 *Students will be able to . . . in English*   * Rewrite the definition of a certain periodic trend in their own words in their notes |
| **Key Vocabulary**   * Electronegativity * Reactivity * Ionization Energy * Ion | | |
| **Stage 2-Assessment Evidence** | | |
| **Performance Task or Key Evidence**   * Students will work on projects and present their periodic trend to the class | | |
| **Key Criteria to measure Performance Task or Key Evidence**   * Students in own words will be able to describe in own words whether the periodic trend increases or decreases * Students in own words can list a definition for each periodic trend * Students can write down one example of how each periodic trend is useful | | |
| **Stage 3- Learning Plan** | | |
| **Learning Activities:**  Do Now/Bell Ringer/Opener (Every day): Get into their groups and start working on their project  Learning Activity Day 1:  Students will use the textbook to research about their assigned topic and try to come up with a definition for their topic. If textbook does not have topic then they can use the internet to research on their topic. Once Students finish this, they will have to find real world examples on how their topic is used in chemistry?  Teacher will be walking around offering help when students get stuck on the project and looking over their project and asking them questions about their project  Learning Activity Day 2:  Same as Learning activity day 1.  Learning Activity Day 3:  Students will have 10-15 minutes at the beginning of the class if needed to meet one last time to do some last-minute touches on the project and practice their presentations  Students will present their topic to the class and other students will take notes on their presentations and write the periodic trends on their periodic table.  After presentations are done, students will have time to do a walkthrough of each poster and be able to write down any more information they missed  If there is still time left, students then they will have to apply knowledge by sorting element cards and labeling the trends  Application  **Periodic Trends help scientists use properties with bonding and ions**  Summary/Closing (Last day)  **Answer question on a piece of paper**  **What is one thing you all learned today or you found interesting?**  **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:**  If needed, work on the project | | |
| **Materials and Equipment Needed:**   * Computers * Textbooks * Poster boards * Markers | | |

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