**Lesson Plan Title: Introduction to Periodic Trends**

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

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

**Overview of and Motivation for Lesson:**

**Elements grouping help scientists understand what**

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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:**   * What useful data can be extracted from an elements grouping? | | |
| **Understanding(s):**  *Students will understand that . . .*   * Electron Configuration is a periodic trend * Elements get bigger as you go down on the periodic table | | |
| **Content Objectives:**  *Students will be able to . . .*   * Group elements into similar families because of valence electrons | | **Language Objectives:**  ELD Level 1 *Students will be able to . . . in English*   * Participate in group activity of sorting animals by listening to group members instructions   ELD Level 5 *Students will be able to . . . in English*   * Justify the grouping of the animals by explaining to the class why the animals are grouped a certain way |
| **Key Vocabulary**   * Electron Shell | | |
| **Stage 2-Assessment Evidence** | | |
| **Performance Task or Key Evidence**   * Students will complete electron shell worksheet * Students will sort animals into groups and understand the periodic table is sorted into groups | | |
| **Key Criteria to measure Performance Task or Key Evidence**   * Students will answer at least 75% of electron shell worksheet questions correctly | | |
| **Stage 3- Learning Plan** | | |
| **Learning Activities:**  Do Now/Bell Ringer/Opener: Students will get plicker cards from their folder in the side of the room and will answer three questions based upon the reading assigned over the weekend   1. How is the modern periodic table organized? 2. What is the name for the group of elements that include Helium, Argon, Krypton, Xenon and Radon? 3. Which of the following is not one of the four characteristics Mendeleev used on his cards when making his model of the periodic table?   Learning Activity 1:  Students will get into groups and receive animal cards from the teacher and will be asked to group the cards in whatever way they would like. Activity should be around 15 minutes.  One person or whole group will present to the rest of the class on how they paired the animal cards and why were the animals grouped that way  Teacher will then ask do you think the periodic table is grouped a certain way? And what are some of the groupings?  Learning Activity 2:  Teacher will hand out electron shell worksheet in which they can work individually or with partners to complete. Questions 1-10 will be answered by the end of the period and graded for a classwork grade  Application  **Elements grouping help understand and electron shells help understand periodic trends**  Summary/Closing  **Address the essential question and make them think about the worksheet and noble gas**  **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:**   * Animal Cards in different colors * Electron Shell Worksheet * Whiteboard | | |

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