**Lesson Plan Title: Density as a periodic trend**

**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):*** Click here to enter text.
 |
| **Aim/Essential Question:*** How does density further improve the idea that periodic of periodic trends?
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| **Understanding(s):***Students will understand that . . .** Density increases as it goes down a group
* Density increase as it goes across a period
* Density is a periodic trend
 |
| **Content Objectives:** *Students will be able to . . .* * Use proper laboratory techniques to carry out the laboratory experiment
* Calculate the density of certain elements
* Use percent error formula to calculate their percent error for the lab
* Apply knowledge of periodic trends to make assumptions about density
 | **Language Objectives:**ELD Level 2 *Students will be able to . . . in English** Say the steps to their partner on how to calculate the percent error of an experiment

ELD Level 3 *Students will be able to . . . in English** Explain to their partner why they believe density is a periodic trend by using the lab
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| **Key Vocabulary*** Density(D)
* Volume(V)
* Mass(m)
* D=m/V
* Percent error
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| **Stage 2-Assessment Evidence** |
| **Performance Task or Key Evidence*** Students in pairs will fill out the Density as a periodic trend lab worksheet
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| **Key Criteria to measure Performance Task or Key Evidence*** Students will follow proper lab procedure and techniques to obtain a percent error less than 5%
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| **Stage 3- Learning Plan** |
| **Learning Activities:( about 5 minutes)**Do Now/Bell Ringer/Opener: Students will obtain plicker cards and answer two questions What is the density of Tungsten? if m=13 grams and V=252 mLWhat is the formula for percent error?Learning Activity 1:(10 minutes)Students will pay attention to teacher who will tell students the safety procedures of the lab. The teacher will give a brief overview of the lab by telling students:To take the lid off the scaleTheir percent error should be less than 5%Graduated cylinders are read at the bottom of the meniscus(curve)To not drop the metal into the graduated cylinderLearning Activity 2:(25 minutes)Students in pairs will complete experiment and record their results onto the sheet given to the students. After lab is performed, students will go back to their desk and answer analysis questions and calculate percent errorApplication **Helps scientists predict the density of other elements**Summary/Closing (5 minutes)**How is density a periodic trend?****Multiple Intelligences Addressed:**

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| [ ]  Linguistic | [x]  Logical-Mathematical | [ ]  Musical  | [ ] Bodily-kinesthetic |
| [x]  Spatial  | [x]  Interpersonal | [x] Intrapersonal | [ ] Naturalistic  |

**Student Grouping**[ ] Whole Class [ ]  Small Group [x]  Pairs [x]  Individual**Instructional Delivery Methods**[x] Teacher Modeling/Demonstration [ ]  Lecture [x]  Discussion[x]  Cooperative Learning [ ]  Centers [x]  Problem Solving[ ]  Independent Projects |
| **Accommodations**None | **Modifications**None |
| **Homework/Extension Activities:**Click here to enter text. |
| **Materials and Equipment Needed:*** Electronic scales
* Calculators
* Metals
* Graduated cylinders
* Googles
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**Adapted from Grant Wiggins and Jay McTighe-*Understanding by Design***