Lesson Plan Template

Grade: 9th

Subject: Physical Science

Materials: Periodic Table notes, Periodic Table Worksheet, colored markers/pencils

Technology Needed: Google Classroom

Instructional Strategies:

- ☐ Direct instruction
- ☐ Guided practice
- ☐ Socratic Seminar
- ☐ Learning Centers
- ☐ Lecture
- ☐ Technology integration
- ☐ Other (list)
- ☐ Peer teaching/collaboration/ cooperative learning
- ☐ Visuals/Graphic organizers
- ☐ PBL
- ☐ Discussion/Debate
- ☐ Modeling

Guided Practices and Concrete Application:

- ☐ Large group activity
- ☐ Independent activity
- ☐ Pairing/collaboration
- ☐ Simulations/Scenarios
- ☐ Other (list)
- ☐ Hands-on
- ☐ Technology integration
- ☐ Imitation/Repeat/Mimic

Explain:
Students will be working in groups of 3 or 4 to label and create their own periodic table.

Standard(s)

Performance Standard HS-PS1-1	Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

This was the closest standard I could find to fit the objectives of this lesson.

Differentiation

Below Proficiency:
Students will be able to fill out their periodic table template on the basis of imitation and repeating information they see on a completed periodic table.

Above Proficiency:
Students will be able to identify trends and locate groups/periods on their periodic table and will understand that these trends are based mostly on each element's valence electrons.

Approaching/Emerging Proficiency:
Students will be able to identify trends and locate groups/periods in filling out their own blank template and using a complete periodic table as a reference some of the time.

Modalities/Learning Preferences:

Objective(s)

Students will identify specific trends in the periodic table and locate groups and periods by filling out a blank periodic table template.

Bloom's Taxonomy Cognitive Level:
Remembering

Classroom Management- (grouping(s), movement/transitions, etc.)

Students will move from their normal desk setting into small groups at tables in the back of the classroom. After the Google Classroom meeting I will allow students to either stay at their desks to work individually or work with a small group at the back tables.

Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)

Students are expected to remain on task while filling out their periodic table with their groups.

Minutes	Procedures
	Set-up/Prep: Learn how to use Google Classroom and screen sharing
	Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.) Good morning! Today we will be learning about the periodic table. I know that you all have been learning about elements and atoms for the past couple weeks and are becoming experts on how to calculate the number of subatomic particles. I am very impressed. You have been using the periodic table a lot to understand these mathematical concepts. Today we are going to dive a little deeper into what the periodic table is and how it is organized.
	Explain: (concepts, procedures, vocabulary, etc.) The periodic table is a really amazing tool! What is important for you to know about the periodic table? Groups vs Periods

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	Elements are in groups based on their reactivity- what determines this? Valence electrons! Essentially, I will use Mr. Frye's PowerPoint notes to go over the trends and states of matter the students should be able to find using their periodic table. The students have access to these notes via Google Classroom. I will use screen sharing and a projector to demonstrate where certain groups, periods, types of elements, and trends are located on the periodic table.
	Explore: (independent, concreate practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions) Students will transition to the tables in the back of the classroom and work with their lab partners in making and labeling their own periodic table. I will be walking around to the different groups to monitor progress and assess understanding.
	Review (wrap up and transition to next activity): In the last 5 minutes we will go over the questions together

Formative Assessment: (linked to objectives) **Progress monitoring throughout lesson- clarifying questions, check- in strategies, etc.** I will be walking around to each group to ask probing questions and clarify anything they are confused about. **Consideration for Back-up Plan:**	**Summative Assessment (linked back to objectives)** **End of lesson:** Students will answer the questions on the back of the worksheet they are using. **If applicable- overall unit, chapter, concept, etc.:** Students will use this periodic table they have created on their chapter test next week.

Reflection (What went well? What did the students learn? How do you know? What changes would you make?):

The students responded really well to collaborative work and seemed to really enjoy learning together. My favorite part of the lesson was when I was able to walk around to each group and see their individual comprehension of the topics we were covering.

Many of the students seemed to lack the deeper understanding of why trends occurred on the periodic table and even struggled to follow the direct instruction on their worksheet. It seemed that some students were lacking the previous knowledge that was necessary to do this activity. I wish we could have done an activity that required deeper thinking, but I think this would have required previous lessons that encouraged students to really think about and understand what elements are and how they interact with each other. Their teacher didn't really explain valence electrons, which I think would have been helpful in labeling trends on a periodic table.

I also wanted to ask each group to consider one question from their worksheet so we could go over it as a class however we ran out of time and the students had to do the questions on their own time.