

Lesson Plan Template

Emily Bichler

Grade: High School		Subject: Chemistry	
Materials:		Technology Needed:	
Instructional Strategies: <ul style="list-style-type: none"> <input type="checkbox"/> Direct instruction <input type="checkbox"/> Guided practice <input type="checkbox"/> Socratic Seminar <input type="checkbox"/> Learning Centers <input type="checkbox"/> Lecture <input type="checkbox"/> Technology integration <input type="checkbox"/> Other (list) 		Guided Practices and Concrete Application: <ul style="list-style-type: none"> <input type="checkbox"/> Large group activity <input type="checkbox"/> Independent activity <input type="checkbox"/> Pairing/collaboration <input type="checkbox"/> Simulations/Scenarios <input type="checkbox"/> Other (list) Explain:	
Standard(s) 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. Clarification Statement: examples of properties that could be predicted.		Differentiation Below Proficiency: Above Proficiency: Approaching/Emerging Proficiency: Modalities/Learning Preferences:	
Objective(s) As a result of this lesson, the student will be able to classify elements based on their properties and find patterns that include reactivity of metals, types of bonds formed, atomic radius, mass, or reaction with oxygen.			
Bloom's Taxonomy Cognitive Level: Analyze			
Classroom Management- (grouping(s), movement/transitions, etc.)		Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)	
Minutes	Procedures		
	Set-up/Prep: Print off notes and engage activity		
15	Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.) Preassessment: bell work- students will write down how many protons, electrons, and neutrons the following elements have and turn in when completed. Zinc, Calcium, Nitrogen, Uranium, Iron, Tin, and Sulfur This will be graded for completion and will The students will complete the periodic people assignment. Students will the state relation to the periodic table and see if anyone picked up on the patterns. http://sunrisescience.blog/wp-content/uploads/2018/02/Periodic-People-Intro-to-Periodic-Table-Activity.pdf I will only give the students 15 minutes to complete the worksheet and will have them work in pairs so that I can get a lesson in for that day, they will not be penalized for not finishing. Just make sure they turn in what they have finished.		
20	Explain: (concepts, procedures, vocabulary, etc.) In the previous lesson I introduced how elements have protons, electrons, and neutrons. I explained what each was and how they gave each element their specific properties. Today I will be teaching them about the different properties of the elements. How each period and group have specific properties and how the periodic table groups them based on more than atomic number and mass. Formative assessment: Students will do these questions on white boards and hold up when done. If oxygen's atomic number is 16 how many protons and electrons does it have? How many shells of electrons does it have?		

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	<p>The periodic table will be on the projector and I will explain using the visual and PowerPoint to give a better explanation. Students will write down notes in their notebooks if they choose to.</p> <p>I will first give an overview of the groups and then break each one down into their specific properties.</p> <p>Starting with hydrogen and the Alkali metals: they each have 1 electron in their outer shell. This allows them to form bonds easily but also makes them highly reactive especially with the halogen group. They have a soft, metal appearance and low melting points.</p> <p>Alkaline earth metals: they have 2 electrons in their outer shell. They also form bonds easily and generally exist as compounds. Their most common bonds are formed with the Oxygen group of elements.</p> <p>Next group is the Halogens: they are in group 7 meaning they have 7 electrons in their outer shell. They like to form bonds with elements from the Alkali group. These elements can either be metal or non-metal. They exist in diatomic forms, Br₂ and O₂.</p> <p>Next group is the Noble gas group: they have a full outer shell of electrons, so they are stable on their own. Helium is also considered part of this group because even though it only has 2 electrons its shell is full. Neon is a very popular element in this group it can be found in signs, under normal conditions they all exist as gases. Their melting points are lower than other groups, but because their shell is full their ionization energy is higher.</p> <p>The last group of elements is the transition elements: They are found in the middle of periodic table. They are all metal and have different values of electrons in their outer shell.</p> <p>Formative assessment: Students will do these questions on white boards and hold up when done. Orbital practice- boron, calcium, phosphorus, argon, helium Which group are these elements in, how many electrons in outer shell, which group would it pair best with? After I'm done teaching, I'll relook at the worksheet I gave the students earlier to see the connections better of the aliens and how they connect to the periodic table. Then I'll give them their own periodic table and have them find the patterns in the elements.</p>
<p style="text-align: center;">10</p>	<p>Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)</p> <p>Students will have a periodic table of their own that I will have them color based on a key that they create, when that is completed I will have them turn it in for a grade.</p> <ul style="list-style-type: none"> - for example red: Alkali metals, blue: Alkaline earth metals, green: halogens, purple: metalloids, orange: transition elements, yellow: noble gases - if the element is highly reactive with oxygen it will have a dark boarder around it in its respective color - the students will then explain the correlation behind the colors and why the periodic table is grouped the way it is
<p style="text-align: center;">5</p>	<p>Review (wrap up and transition to next activity):</p> <p>To review I will explain that the periodic tables are due next class and collect any that are done. The next lesson will cover electronegativity and more complex patterns of the periodic table.</p>
<p>Formative Assessment: (linked to objectives, during learning)</p> <p>Preassessment: Bell work will be completed as a review from previous lesson with examples of elements as laid out in engage</p> <p>Formative: Whiteboards will be done with element examples as laid out in explain portion</p>	<p>Summative Assessment (linked back to objectives, END of learning)</p>
<p>Reflection (What went well? What did the students learn? How do you know? What changes would you make?):</p> <p>My presentation was well prepared. I spoke clearly and the students were receptive to my activity. The questions during the direct instruction is important for validation of the new content they are learning. My text size was a little small on the power point, but that was the only main critique.</p>	

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