

Lesson Plan Template

Grade: 9th		Subject: Life Science					
Materials: Chromebooks and Worksheets		Technology Needed: Google Classroom					
Instructional Strategies: <input checked="" type="checkbox"/> Direct instruction <input type="checkbox"/> Peer teaching/collaboration/cooperative learning <input type="checkbox"/> Guided practice <input type="checkbox"/> Visuals/Graphic organizers <input type="checkbox"/> Socratic Seminar <input type="checkbox"/> PBL <input type="checkbox"/> Learning Centers <input type="checkbox"/> Discussion/Debate <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Modeling <input type="checkbox"/> Technology integration <input type="checkbox"/> Other (list)		Guided Practices and Concrete Application: <input type="checkbox"/> Large group activity <input type="checkbox"/> Hands-on <input type="checkbox"/> Independent activity <input type="checkbox"/> Technology integration <input type="checkbox"/> Pairing/collaboration <input checked="" type="checkbox"/> Imitation/Repeat/Mimic <input type="checkbox"/> Simulations/Scenarios <input type="checkbox"/> Other (list) Explain:					
Standard(s) I could not find any standard that fit perfectly with this lesson. This was the closest one I could find because it relates to the formulas being balanced.		Differentiation Below Proficiency: Students would require a scaffolded worksheet to complete that was slightly simpler than the one provided. There would be no “trick questions” and potentially there would be less questions. Above Proficiency: Students will complete the worksheet accurately, showing they can correctly use nomenclature for nonmetal n-bonds and have an understanding of how these elements are bonding. Approaching/Emerging Proficiency: Students will be able to complete the nomenclature worksheet with a high percentage of accuracy, possible getting stuck on a couple of the “trick questions”. Modalities/Learning Preferences:					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; padding: 5px; vertical-align: middle;"> Performance Standard HS-PS1-4 </td> <td style="padding: 5px;"> Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy. </td> </tr> </table>		Performance Standard HS-PS1-4	Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; padding: 5px; vertical-align: middle;"> Objective(s) Students will be able to correctly identify and write chemical names with the corresponding chemical formula (and vice versa) between two nonmetals. </td> <td style="padding: 5px;"> Bloom’s Taxonomy Cognitive Level: Remembering/Understanding </td> </tr> </table>		Objective(s) Students will be able to correctly identify and write chemical names with the corresponding chemical formula (and vice versa) between two nonmetals.	Bloom’s Taxonomy Cognitive Level: Remembering/Understanding
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Classroom Management- (grouping(s), movement/transitions, etc.) Students will be remaining in their typical seating for the entirety of this lesson, so they will not be physically transitioning to a new setting. There will be a transition from lecture to work time. I will take attendance and ask them to log off Google Classroom and then move in to work time.		Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.) The students in this class are very well behaved. They stayed in their assigned seats and worked diligently on their worksheet when they were given work time.					
Minutes	Procedures						
	Set-up/Prep: Set up Google Classroom and the different screens I will be using. Outside of class I reviewed the material and practiced nomenclature on my own so I was ready for the lesson!						
10	Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.) Review of previous nomenclature rules: What do we know already? Metals and nonmetals: 1. Metal’s name comes first, nonmetal second 2. Nonmetal ends in -ide Metals with different charges: 1. Roman Numerals Give students time to work on a few review names/formulas and then we will go over them as a class.						

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These were the review problems:

Write the NAME:

PbS_2 --- Lead(IV) Sulfide

Ca_3P_2 --- Calcium Phosphide

$Fe(NO_2)_2$ --- Iron (II) Nitrite

Write the FORMULA:

Iron (III) Chromate --- $Fe_2(CrO_4)_3$

Potassium Fluoride --- KF

Copper (II) Sulfide --- CuS

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Explain: (concepts, procedures, vocabulary, etc.)

After going over the review problems, we will discuss naming compounds between two nonmetals. The biggest difference is that we will use Greek prefixes. What remains the same is that the second element will end in -ide. I will show them the notes Mr. Frye has and show them a chart of Greek prefixes. I will walk them through four practice problems and then give them work time for their two assignments.

Practice Problems Attached:

Name _____

Naming Compounds (worksheet 4)

1. SiO_2	11. NO
<u>Silicon Dioxide</u>	_____
2. PCl_3	12. SF_4
<u>Phosphorus Trichloride</u>	_____
3. SiF_4	13. XeF_4
_____	_____
4. N_2O	14. SbF_4
_____	_____
5. SO_3	15. NH_3
<u>Dinitrogen Pentoxide</u>	_____
6. N_2O_5	16. SO_2
_____	_____
7. IF_5	17. H_2O
_____	_____
8. SF_6	18. CS_2
_____	_____
9. ClO_2	19. Cl_4
_____	_____
10. P_4S_3	20. BCl_3
_____	_____

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Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)

Students will have time to work on their new nomenclature assignments. Attached Below (with some problems done that I did with the class):

Structure of Matter Name _____

Practice 5.5: Naming Covalent Compounds

Rules

1. The element with the lower group number is written first in the name; the element with the higher group number is written second in the name. **Exception:** when the compound contains oxygen and a halogen, the name of the halogen is the first word in the name.
2. If both elements are in the same group, the element with the higher period number is written first in the name.
3. The second element in the name is named as if it were an anion, i.e., by adding the suffix *-ide* to the root of the element name (ex: fluorine → "fluoride"; sulfur → "sulfide").
4. Greek prefixes are used to indicate the number of atoms of each element in the chemical formula for the compound. **Exception:** if the compound contains one atom of the element that is written first in the name, the prefix "mono-" is not used.

Prefixes

Mono -	1
Di -	2
Tri -	3
Tetra -	4
Penta -	5
Hexa -	6
Hepta -	7
Octa -	8
Nona -	9
Deca -	10

Examples

1. A compound of one carbon and two oxygen atoms
 CO_2 - "carbon dioxide"
2. A compound consisting of four phosphorus atoms and 5 oxygen atoms
 P_4O_5 - "tetraphosphorus pentoxide"
3. A compound consisting of ten fluorine and two sulfur atoms
 S_2F_{10} - "disulfur decafluoride"

Problems

Write the formulas for the following compounds

1. disulfur decafluoride S_2F_{10}
2. nitrogen monoxide _____
3. diboron tetrachloride _____
4. arsenic trifluoride _____
5. sulfur dioxide _____
6. sulfur difluoride _____
7. boron trifluoride _____
8. chlorine monofluoride _____

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Write the name for the following compounds

1. SF₄ Sulfur tetrafluoride
2. P₄O₁₀ _____
3. PCl₅ _____
4. S₂F₁₀ _____
5. P₄S₁₀ _____
6. Cl₂O _____
7. CS₂ _____
8. AsF₅ _____
9. NCl₃ _____
10. IF₇ _____

Write the formula and name for the following combinations (be careful of rules 1 and 2)

Combination	Formula	Name
1. 1 selenium and 4 fluorine atoms	_____	_____
2. 2 nitrogen and 4 oxygen	_____	_____
3. 3 fluorine and 1 bromine	_____	_____
4. 3 chlorine and 1 antimony	_____	_____
5. 2 oxygen and 1 nitrogen	_____	_____
6. 1 oxygen and 2 chlorine	_____	_____
7. 2 nitrogen and 1 oxygen	_____	_____
8. 4 phosphorus and 6 oxygen	_____	_____
9. 6 fluorine and 1 selenium	_____	_____
10. 1 carbon and 4 fluorine	_____	_____
11. 2 nitrogen and 5 oxygen	_____	_____
12. 1 nitrogen and 3 fluorine	_____	_____

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5	<p>Review (wrap up and transition to next activity):</p> <p>Take attendance via Google Classroom. Remind students to finish their assignments by Wednesday. Possibly preface the activity they will be doing on Wednesday.</p>	
<p>Formative Assessment: (linked to objectives) Progress monitoring throughout lesson- clarifying questions, check-in strategies, etc.</p> <p>Be available for student questions (we ended with only 15 minutes left and Mr. Frye talk with me/evaluated my lesson during this time).</p> <p>Consideration for Back-up Plan:</p> <p>Walk around classroom and monitor learning.</p>	<p>Summative Assessment (linked back to objectives) End of lesson:</p> <p>Accurate completion of worksheet 5.5.</p> <p>If applicable- overall unit, chapter, concept, etc.:</p>	
<p>Reflection (What went well? What did the students learn? How do you know? What changes would you make?):</p> <p>I was able to see that most of the students learned the new rules of nomenclature, especially the students in class. There was only one student online who responded to my prompts and seemed to understand the content, all the other online students kept their camera and microphone off all of class. It was difficult to feel connected to these online students. The students in class vocally responded to my promptings when I went through the practice problems and I could see them nodding often when they understood the material during the lecture. However, most of the in class students looked very bored/disinterested.</p> <p>During my observations, the atmosphere of this class is typically very quiet, unless they are in lab. The teacher is the information giver and they are the information receivers. I found this attitude difficult to change when I taught, all the students were very hesitant to answer my questions.</p> <p>I did not like that my lesson was mostly lecture and I struggled to find engaging ways to teach this material that did not require the students to leave their desks or collaborate with their neighbors (per the request of my practicum teacher). I really wish I could have made this lesson more interactive. I would have used a hybrid grouping of in class and at home students to collaboratively come up with the important things to remember when using nomenclature. Each group could share one tip they think is most important. Then I would have switched groups to do a few review problems. And lastly after teaching the new rules, I would have had students have the choice to work together or alone on the worksheet that Mr. Frye had assigned them.</p>		