

Lesson Plan Template

Grade: 9 th		Subject: Physical Science	
Materials: Baking powder, baking soda, powdered sugar, cornstarch, water, vinegar, iodine, pipettes, spot plate, dry erase markers, scooping straws, toothpicks		Technology Needed:	
Instructional Strategies: <input type="checkbox"/> Direct instruction <input type="checkbox"/> Peer teaching/collaboration/cooperative learning <input type="checkbox"/> Guided practice <input type="checkbox"/> Socratic Seminar <input type="checkbox"/> Visuals/Graphic organizers <input type="checkbox"/> Learning Centers <input type="checkbox"/> PBL <input type="checkbox"/> Lecture <input type="checkbox"/> Discussion/Debate <input type="checkbox"/> Technology integration <input type="checkbox"/> Modeling <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 type="checkbox"/> Imitation/Repeat/Mimic <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.		Differentiation <p>Below Proficiency: All students will be working with their lab partners for this activity. Students that are below proficiency will have support from their lab partners.</p> <p>Above Proficiency: Students that are above proficiency will be able to assist their lab partners throughout the activity. I can also challenge them by asking questions about important physical and chemical changes they witness in their daily lives.</p> <p>Approaching/Emerging Proficiency: Students approaching proficiency will get support from lab partners and I will be available for them to ask any clarifying questions during the activity.</p> <p>Modalities/Learning Preferences: Visual, interpersonal, physical</p>	
Objective(s) Students can observe different reactions and discriminate between chemical and physical changes. Students can analyze lab results and identify the four “mystery” powders. Bloom’s Taxonomy Cognitive Level: Knowledge and Analysis			
Classroom Management- (grouping(s), movement/transitions, etc.) Students will be at their desks for a brief introduction for the activity. Then they will get into lab groups for the lab itself.			
Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.) Students are expected to collaborate with lab partners to complete the data collection and results parts of the lab at least. Students will then write up a lab report reporting their observations and conclusions.			
Minutes	Procedures		
10	Set-up/Prep: Lab supplies will be laid out so that students will be able to materials for their table.		
5	Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.) The students will complete a non-graded bell ringer and have a short discussion on physical and chemical changes.		
5	Explain: (concepts, procedures, vocabulary, etc.) The lab will be introduced and students will be instructed to gather lab materials and set up spot plates as shown in their lab handout.		
30	Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions) Students will take each of the four mystery powders (corn starch, powdered sugar, baking soda, and baking powder) and combine them with a few drops of water, vinegar, and iodine in separate cells on the spot plates. Students will record all observations (dissolving, fizzing, etc...) and complete the observation and data charts.		
-	Review (wrap up and transition to next activity): Students will have the rest of the class period to gather observations. Students will be able to use extra time completing questions and conclusion parts of the lab in the lab report. Students that don’t finish the lab report will be able to complete it at home and turn it in next class period.		

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Formative Assessment: (linked to objectives) Students will complete a short bell ringer assignment in order to see how students were comprehending the lecture/ reading material.

Progress monitoring throughout lesson- clarifying questions, check- in strategies, etc. I will be walking around throughout the lab and answering questions and monitoring student progress throughout the lab.

Consideration for Back-up Plan:

Summative Assessment (linked back to objectives)

End of lesson: Students will put the entire lab into a lab report in their lab notebook. The lab report will contain a title, objective/ hypothesis, procedure, data/ results, reflection questions, and a conclusion/ application.

If applicable- overall unit, chapter, concept, etc.:

Reflection (What went well? What did the students learn? How do you know? What changes would you make?) The lab was completed by all of the lab groups within the period. Most of the lab reports were done well with the majority of the reflection questions being answered correctly. The students learned more about physical and chemical changes specifically how a material dissolving is a physical change. Multiple lab groups asked about the terms soluble and insoluble so we discussed the definitions and examples as a class. In the future I would give the students a visual example of what the setup looks like at their lab table in order to save time with the set up and transition into the lab. I would also write out the specific details/ steps of the lab that I wanted to explain in further detail so that nothing is missed.