

Grade: 9	Subject: Life science / Balancing lab class
Materials: <ul style="list-style-type: none"> - Pompoms /lab - Power point for the lab/ power point for the lesson - Models for particles - Extra sheets of paper for students to practice 	Technology Needed: <ul style="list-style-type: none"> - Power point slides for the lab / video (they will watch before the lab)
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) <p>Confirmation inquiry students are given the equations and method but the students must determine the results (balance and build up the model)</p>	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) <p>Explain: Students will work on balancing equations during the class time/ lab class they will need to take pictures of the pompom equations and submit it on google form (one will submit)</p>
Standard(s) <ul style="list-style-type: none"> - Performance Standard HS-PS1-5 Apply scientific principles and evidence to provide an explanation about the effects of the reacting particles on the rate at which a reaction occurs. - Performance Standard HS-PS1-7 Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction. 	Differentiation: <p>Below Proficiency: Work with another student / teacher guidance Demonstration (visuals, discussions to clarify different points). Hands on activity, involving movement to demonstrate particles behaviors.</p> <p>Above Proficiency: Work and help other students on the lab power point / work on the post lab assignment</p> <p>Approaching/Emerging Proficiency: Work with another student / teacher guidance. Demonstration (visual and tactile) , discussions to clarify different points. Hands on activity, to demonstrate. Representing particles with models in the introduction part of the lesson</p>
Objective(s) Student should be able to <ul style="list-style-type: none"> - Balance equations by determining the numbers of coefficients - Understand the law of the conservation of mass through their work - demonstrate balancing equations using colored pompoms <p>Bloom's Taxonomy Cognitive Level:</p> <ul style="list-style-type: none"> - Understand - Apply 	<p>Modalities/Learning Preferences: Visuals/ tactile lesson (hands on) / involving interaction between pairs</p>

- Create	
Classroom Management- (grouping(s), movement/transitions, etc.) <ul style="list-style-type: none"> - Students will be given instructions on the lab via slides and online students will be given a different set of instructions - Working In pairs or individuals (preference) - Thumbs up/ middle / down through out the lesson to check on the students understanding 	Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.) <ul style="list-style-type: none"> - students are expected to maintain an indoor noise level during (individual/ pair work) - students are expected to have appropriate behavior, be cooperative and respectful towards each other
Minutes	Procedures
15 min	Set-up/Prep: Notes class <ul style="list-style-type: none"> - Have particle models for $H_2 + O_2 \rightarrow H_2O$, write down the equation, balance it with the class while modeling the equation with particles (providing and extra visual) - Have worksheet ready in google form so that students can redo any equation that they struggled with from the previous after-class worksheet lesson. - Prepare/ set pompoms for different groups along with extra paper to practice
5 min	Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.) Introduction: (analogy) think of balancing equations as making a cake from a cake box mixture adding 1 cup of water and one egg (reactants) to make 24 cupcakes (products) all the mass is in there but in different shape (different molecules) then ask them what if I need to make 2 cake boxes then how will that change my equation.
20 min	Explain: (concepts, procedures, vocabulary, etc.) <ul style="list-style-type: none"> - Review coefficients and subscripts then balance and model the equation $H_2 + O_2 \rightarrow H_2O$ with particles. - Have worksheet ready in google form so that students can redo any equation that they struggled with from the previous after-class worksheet lesson. (on a separate sheet of paper so that they can keep in their notes) - Start with Power point, Introduce the pompom activity (lab power point) Explain instructions on the lab (students work in pairs using pompoms which represent atoms to balance equations) - Students must write the equation first then balance it then represent the different atoms in the molecules with pompoms.
20 min	Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions) <ul style="list-style-type: none"> - Students work on their lab/ teacher walks around the class supporting/ students who get done earlier they have to fill out the lab analysis found on their google slides Students take picture of each model they make and submit it online
	Review (wrap up and transition to next activity): Work on the lab analysis Any students who gets done with the whole analysis should watch The video: https://www.youtube.com/watch?v=yA3TZJ2em6g

<p>Students who are not done can complete their work at home and submit it later and they should watch the video for deeper understanding.</p> <p>Lab Class: students have to fill out a lab analysis on the google slides for the lab</p>	
<p>Formative Assessment: (linked to objectives)</p> <ul style="list-style-type: none"> - Progress monitoring throughout lesson- walking between groups while they are balancing, clarifying questions, end of lab analysis. - Check the student ability to balance equations, thumbs/ middle/ down <p>Consideration for Back-up Plan:</p> <p>Print out the lesson notes worksheet / have students demonstrate with pompoms different equations (written on board) and send a picture for their work.</p>	<p>Summative Assessment (linked back to objectives)</p> <p>End of lesson:</p> <ul style="list-style-type: none"> - End of topic assessment <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>Some students required more time during the lab, try paring them with higher proficiency students.</p> <p>Make sure to review the equations and have students write them on a paper and practice the process with the teacher.</p> <p>Provide extra sets of pompoms.</p> <p>Any student who get done earlier which is unlikely have them watch the video provided in this link (they already have it in the slides) https://www.youtube.com/watch?v=yA3TZJ2em6g</p>	