

Lesson Plan Template

Date: _____

Grade: 4 th	Subject: Science-Greek architecture
Materials: tape, computers, cardstock paper, scientific method handouts, exit slips	Technology Needed: Computers
Instructional Strategies: <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: <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) 4.2.2. Conduct simple investigations to answer questions based on observations 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	Differentiation Below Proficiency: Students will be assigned an easier job in the process of completing the experiment, such as, making the paper the shape that they want them or placing the books on top of the columns. Above Proficiency: Students will be able to help the struggling students in their group and can do more of the research behind why different shaped columns were used in Greek architecture. Approaching/Emerging Proficiency: Students will complete the lesson as planned. Modalities/Learning Preferences: <ul style="list-style-type: none"> • Visual: Students will see images of different architecture that has columns. • Auditory: Students will listen to the discussion about different columns. • Kinesthetic/Tactile: Students will complete an experiment and will be using hands on material to create different shaped columns.
Objective(s) By the end of the lesson, the students will create different Grecian architecture to determine which architecture was the best by using the scientific method. Bloom's Taxonomy Cognitive Level: Creating	Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.) <ul style="list-style-type: none"> • When listening to the lecture talking should be at a 0. • When working on the experiment talking should be no more than a 2. • Hands should be raised when students have questions.
Classroom Management- (grouping(s), movement/transitions, etc.) <ul style="list-style-type: none"> • Only one person from the groups will present the information to the other groups. • Groups will be the members that are at the table they sit at. • One student will pick up all worksheets and exit slips and hand them to the teacher. 	
Minutes	Procedures
2 minutes	Set-up/Prep: <ul style="list-style-type: none"> • Have 20 pieces of cardstock and tape ready for students • Have images on the board of the Parthenon and the US Supreme Court I got this lesson from educators.brainpop.com
5 minutes	Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.) <ul style="list-style-type: none"> • Show the class a picture of the Parthenon and the US Supreme Court • Have the students turn and talk with the students at their tables and talk about the differences between the two pieces of architecture.
10 minutes	Explain: (concepts, procedures, vocabulary, etc.) <ul style="list-style-type: none"> • We are going to focus on the columns of the designs. • Columns on buildings actually came from the Egyptians and the Greeks decided to copy it to make their own designs and the United States copies their idea of columns from the Greeks. • We are going to practice using the scientific method to decide which columns would be the strongest. (square, round, or triangle) • The scientific method has 6 parts to it. • What is the first part to the scientific method? (question: Ask yourself what you want to learn more about.) • 2nd Step? (Form a Hypothesize: make an educated guess) • 3rd? (Experiment: test your hypothesize by conducting an experiment)

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	<ul style="list-style-type: none"> • 4th? (Observe & record: Make observations and write down what is happening) • 5th? (Analyze: Use your information to draw conclusions about your experiment. Was your hypothesis correct?) • 6th (Share your results: explain your results to who you are presenting to)
<p>20 minutes</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> <ul style="list-style-type: none"> • You will be working with your table to conduct an experiment on what shape columns would be the strongest. (round, triangle or square) • First, you are going to want to do some research to see if you can find out which shape would be the strongest. • Then, you will form a hypothesis • You will create 4 paper columns using cardstock. You will complete the experiment 4 times using different shaped columns each time you do it • After you have your 4 columns completed you will put them together and place books on top of them to see how strong your columns are. • Only put one book at a time on the columns. • When the columns collapse the students will record how many books were placed on the columns • You will each have a scientific method handout to complete while doing the experiment.
<p>7 minutes</p>	<p>Review (wrap up and transition to next activity):</p> <ul style="list-style-type: none"> • Each group will present their hypothesis and results to the class. • Students will complete an exit slip.
<p>Formative Assessment: (linked to objectives, during learning)</p> <ul style="list-style-type: none"> • Progress monitoring throughout lesson (how can you document your student's learning?) <p>Students will complete an exit slip on their understanding of the scientific method.</p>	<p>Summative Assessment (linked back to objectives, END of learning)</p> <p>The students will complete a scientific method assignment on their own. Each student will have to find something they want to know more about, form a hypothesis, and conduct an experiment. Students will need to pick something that has at least 3 things to be tested to compare. Students will be graded on a rubric</p>
<p>Reflection (What went well? What did the students learn? How do you know? What changes would you make?):</p> <p>I thought this lesson went really well and all of the kids enjoyed it. I made sure to walk them through how to complete the worksheet on the scientific method so they could record accurate information about their experiment. We walked through the driving question and hypothesis part of the worksheet together. I think it would have been beneficial for the students if I would have written what we discussed for the driving question and the hypothesis on the board so the students could see it when they received their worksheets. I thought it was helpful to show the students a Greek structure and an American structure that has columns so the students can see a real like building with columns on it and see what they are used for. If I had more time I would have liked to go more into detail about what the columns are used for on buildings. One thing that I would change for next time is making sure all of the books that the students choose were the same size so the numbers were similar to each other. The students grabbed library books so they were all different thickness and sizes. I think the experiment would have been more accurate if the books would have been the same size. I also thought about assigning certain columns to students to make and then as a class we would conduct the experiment together so we are all moving at the same pace. I would have had certain students create the circular columns, some the square and some the triangle columns. Some of the groups finished way faster than the other students did. Since they finished faster I wish I would have had something planned for those students to do that was similar to the scientific method or columns. I could have had the students research different buildings with different columns to see what each building looks like and compare the buildings with one another. I was very happy with the students being really engaged the whole time on the experiment. They were so excited to build their columns and start testing them. I think by having the class do it together it could have eliminated the noise level in the room but wouldn't let the students explore and discover things on their own. I could also split the class up so there would be larger groups instead of four groups of three students. By splitting the class up differently it would help with letting the students be able to explore but also help with making sure the students are finishing at a faster pace. The students would be able to split up making the columns making that part of the experiment faster. It took some of the students to make the columns because they wanted them to be perfect so they were sturdy. It helped that I had an example of a square column, triangle column, and circle column so the students could see what they should look like when they are done. I think it would have been helpful to have the students keep the columns apart not right next to each other because on buildings there is some space in between columns. With the columns right next to each other it made it so some students put 60 books on it before it collapsed. I think if they were apart it wouldn't have lasted as long as it did. By doing that it would have allowed the students to finish quicker. I didn't think it would have taken as long as it did to complete the experiment part of the lesson. It took about 15 minutes longer to complete the experiment than I thought it would. It was good that I left extra time for myself just in case any of the sections would go over. If I were to teach this lesson again I would hand out the worksheets before we started doing the scientific method part of the lesson so they could write the answers down right when we talked about them. I waited until we were done talking to hand them out because I didn't want them to focus on the worksheets rather than paying attention to what we were talking about on the board. This lesson was a great way to incorporate science into the Greek Mythology unit the students are working on. I would definitely use this lesson again if I were to teach Greek Mythology to my class.</p>	

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