

AP Environmental Science Lesson Plan

Teacher: Reynaldo Diaz / Ken Gracz		Date (s): 3-1-13	
Unit Title: Creating a final Project for Environmental Science AP class.		Corresponding Units Task: Depends on project selected by students.	
Essential Questions:			
<ol style="list-style-type: none"> 1. How do I plan, develop and execute a project proposal? 2. How can I use the scientific method for a research project? 3. How can I use PowerPoint or Prezi to make an effective proposal presentation? 4. What is my project focus going to be educational or research oriented? 5. Why is my project important? 6. What is the design and plan method of my project? 7. What are some expected challenges of my project? 			
I can statement (s): I can formulate, design and execute an environmental science project.			
Materials/Resources: See Laboratories listed in Explore		Technology Integration: Vernier Portable labs, and overhead presentation.	
Essential Vocabulary: Chemical Parameters, pH meter, acid, alkaline, turbidity, conductivity, Total Dissolved Solids, calibration, nutrients, macro invertebrates, flow, salinity.			
Evidence of Inquiry Through 5 E Utilization and/Constructivism			
Engage: The instructor will relate the importance of a presenting a project to a committee for approval for any science and non-science field. The instructor presented two outstanding high school projects. The first was a science project to develop a cancer test, the second a music video raising environmental awareness. Additionally a mural of the true cost of coal through art was presented to highlight different alternatives for a project.			
Music Video: http://www.youtube.com/watch?v=P8jtm5P4XO0			
Cancer Research: http://www.youtube.com/watch?v=r55a0FapF2M or http://www.ted.com/talks/award_winning_teen_age_science_in_action.html			
Coal Mural: http://www.beehivecollective.org/english/coal.htm			
Explore: Students are allowed to work with 0-4 partners to select any environmental topic that has been covered in class during the school year. Once they have selected a topic they will design a project to raise environmental awareness or answer a scientific question.			
Explain: The day before the lab practical, the instructor will explain the how, why, importance and limitations of developing a research project. The instructor will cover the basics of using PowerPoint and excel as research tools.			
Elaborate: The instructor will respond to student questions during the explaining, engaging, and exploring sections. Students will have further time for data processing where the teacher will answer any further concerns. Students will receive feedback from their presentations			
Evaluate: Instructor will collect lab notebooks to assess the progress of the project. The instructor will evaluate student presentations.			
Indicators of Depth of Knowledge Levels			
Level 1	Level 2	Level 3	Level 4
<i>Define</i>	<i>Interpret Predict</i>	<i>Drawing Conclusions Presenting Findings</i>	<i>Analysis Designing</i>
Differentiation Strategies Used: The independence of this project allows for student who feel challenge by the scientific rigor to explore an alternate artistic route to deliver a current environmental message to mainstream audience.			
Instructional and Pedagogical Reflection: See lesson plan reflection.			