

PowerUP Jax Fall 2016 Grant Winner

8. Elizabeth Thomas

Darnell-Cookman Middle-High School

Subject/Grade: 10th and 11th

Project Title: Request for chemical and laboratory equipment for the Chemistry club

Summary of Project:

Chemistry is a requisite for many of the students at Darnell Cookman High School. Nursing, Doctorates, and many other walks of life in Medicine have some degree of association with Chemistry; but it's also one of the most challenging sciences. A textbook can be full with words, but sometimes they usually fall on deaf ears. Yes, reading is part of learning something, but it isn't always the best one for each student. Every time I pull out a lab demonstration, my students are engaged and focused on seeing the outcome of these demonstrations. This constant kinesthetic learning experience helps to reinforce what I teach my students in class. Engaging my student's is one my responsibilities as a teacher and I must respect that by teaching them in the most meaningful way possible. With the PowerUP Jax Grant, I want to apply the fund to my AP Chemistry and Honors class. As well as the Chemistry Club that some of student so eagerly want to join. Acquiring chemicals and laboratory equipment though is quite costly. With new equipment, I do the demonstrations that my students can be engaged in. Disappearing ink demonstration, Dry ice color show, and the Organic rainbow demos can be possible if I had the monetary value of this grant. Each of the aforesaid demonstrations cost, about \$15.00 or more, and this doesn't include some of the chemicals I require, such as nitric acid, Potassium iodide, or Magnesium ribbon which cost much more.

How many students will be directly involved? Explain any further impact on other students, teachers, the school as a whole, and/or the community.

Given that Darnell Cookman is small high school. It is a Title 1 school and most of them are girls. To be qualified for the club, there will be a reading assignment where they have to read and answer the pre-lab questions. After they finish the lab, they have to answer the post lab questions, solve problems, and they have to answer some critical thinking questions. About 140 students will be affected by this grant. Some of these take a large interest in chemistry and may encourage their underclassmen to take AP Chemistry, and hopefully pass the class to earn college credits, saving them time and money as tuition continue to rise. If more students pass their AP classes; the school's general performance grade goes up as well. It also affects the family and the community and therefore impacts the world. To the city of Jacksonville, it is nicer to know that Darnell Cookman is performing its best as a Magnet School. When student participate in chemistry club they learn, they solidify their knowledge and they teach other students. It also influences Middle-School Teachers, to gain more understanding of the concept to incorporate into their own classroom. I witnessed my students sharing their experience on Chemistry with their parents, siblings, classmates and friends. It is challenging to take AP Chemistry, but my students are ready to accept the challenge.

How will the project specifically increase student learning? Be sure to explain the project's connections to existing learning standards. Be clear about what new skills, knowledge, and/or dispositions the students will acquire.

Although more and more students are interested in chemistry, the lack of readily available laboratory materials to cover many of the topics that need to be mastered for the AP exam and the State assessments impedes instruction and learning. In fact, this deficit in materials prevents us from participating in many interactive chemistry experiments that would engage student to increase student knowledge and understanding. Since I will be utilizing inquiry labs, I will enable students to gain a deeper understanding of the concepts and to take ownership in their activities. This project allows the students to design and interpret data from, an experiment that uses titration to determine the concentration of an analyte in a solution. Also, students will be able to use stoichiometric reasoning in situations that involve impure substances. They'll also design experiments to determine concentration, composition, and identity of a substance. Lastly, they'll be able to generate appropriate representations of chemical mixtures, including macro-scopic level and particulate-level views. There are specific chemistry-related skills that are analytical in nature that they must practice in order to learn, such as titrations, filtration, chromatography etc. As student understanding increases so will confidence. An increase in confidence will lead more students enrolling in my AP chemistry class, which is known to be very rigorous and has one of the most challenging AP exams. Just talking about the chemistry club, creates excitement in my class. I really don't want to shatter their hopes

What is your plan for evaluating the success of your project? What artifacts (photographs, samples of student work, testimonials, etc...) would you use to demonstrate the effectiveness of the project?

I can measure success in the following ways: 1. AP Pass rate 2. Pass rate in Chemistry class 3. Student engagement and interest. Photographs of the lab/demonstration will be taken. Samples of student work will be displayed on the notice board/bulletin board. Testimonials of student work will be posted on the webpage.