

## POWERUP JAX SPRING 2016 GRANT WINNER

8. Elizabeth Thomas  
Darnell-Cookman Middle/High School

**Subject:** Chemistry

**Grade:** 10-11

**Project title:** Request for chemical and laboratory equipment for the chemistry club.



**Summary:** 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. By this, I firmly know that most of my students prefer the visual learning experience.

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. Growing crystals with chemicals, air in a bottle, and the elephant toothpaste 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 hydrochloric acid, lead nitrate, or ethyl alcohol, which cost much more.

### **How many students will be directly involved?**

Given that Darnell Cookman is small high school. About 150 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. 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.

**How will the project specifically increase student learning?** 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 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.

There are specific chemistry-related skills that are analytical in nature that they must practice in order to learn, such as titration, filtration, distillation 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.

**How will you spend your funds?**

With this grant, I will purchase environmentally safe supplies for the students participating in the chemistry club. The primary vendor I will purchase chemicals from is the Flinn Science Company. Their website is [www.flinnsci.com](http://www.flinnsci.com)

| Catalog Number | Description                          | Price   | Quantity | Total   |
|----------------|--------------------------------------|---------|----------|---------|
| GP3085         | Flat Bottom Flask                    | \$9.55  | 1        | \$ 9.95 |
| AP7498         | Orange juice to strawberry Float Kit | \$56.25 | 1        | \$56.25 |
| AP7385         | Elephant tooth paste kit             | \$41.71 | 1        | \$41.71 |
| AP8978         | Energetic light kit                  | \$24.15 | 2        | \$48.30 |
| AP4556         | Super-Duper Polymer Gel kit          | \$13.35 | 1        | \$13.35 |
| AP6154         | Flaming vapor ramp kit               | \$15.95 | 1        | \$15.95 |
| AP8729         | The mini grain explosion kit         | \$38.85 | 1        | \$38.85 |
| AP9117         | Zinc pyrotechnics kit                | \$21.95 | 1        | \$21.95 |
| AP5943         | Whoosh bottle kit                    | \$34.50 | 1        | \$34.50 |
| AP9303         | Oooh! Aaah Style Flame test kit      | \$41.25 | 1        | \$41.25 |
| AP8700         | Tie dyeing-chemistry fun kit         | \$84.50 | 1        | \$84.50 |
| AP8715         | Crystal Growing rock kit             | \$23.80 | 1        | \$23.80 |
| AP7558         | Air in a bottle-kit                  | \$49.95 | 1        | \$49.95 |
|                | Lead Nitrate 500mL                   | \$9.45  | 1        | \$9.45  |
|                | Hydrochloric Acid 1 molar 500mL      | \$5.85  | 1        | \$5.85  |
|                | Ethanol 500mL                        | \$6.90  | 1        | \$6.90  |