The STEM EFFECT

A PCS STEM Academy Newsletter

School: Dunedin High School STEM Academy Teacher: Michael Awe

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What are the STEM Academies all about?

The PCS K-12 STEM Department's STEM Academies offer rigorous after school programs for students in 2nd through 12th grades emphasizing:

- curriculum driven by real-world problem solving using the K-12 STEM Department's Engineering Design Process
- development of student knowledge related to STEM content through hands-on building
- exploration of computer programming and technology applications
- daily opportunities for students to develop in-demand workforce skills, such as peer collaboration, effective communication, technology literacy and critical thinking

STEM Academies impact over 5,000 students in2nd-12th grades, with 217 elementary (grades 2-5), 35 middle (grades 6-8) and 9 high school (grades 9-12) academies.

To learn more about the PCS STEM Academy program,

please visit www.pcsb.org/STEM

And

Our Future

After high school I plan to go to college. I want to focus on getting everything I need to get for my doctors' degree. I want to be a pediatrician. I need STEM in this career because it deals with science, technology, engineering, and math. I have always wanted to be a doctor ever since I was 3 years old. I want to work with kids and I always liked my pediatricians, they were really nice to me. I think more kids would be involved in STEM if they knew about it and were told how much fun it was. I have also grown as a student while in STEM. It helps me to realize how to solve problems. (Karisa)

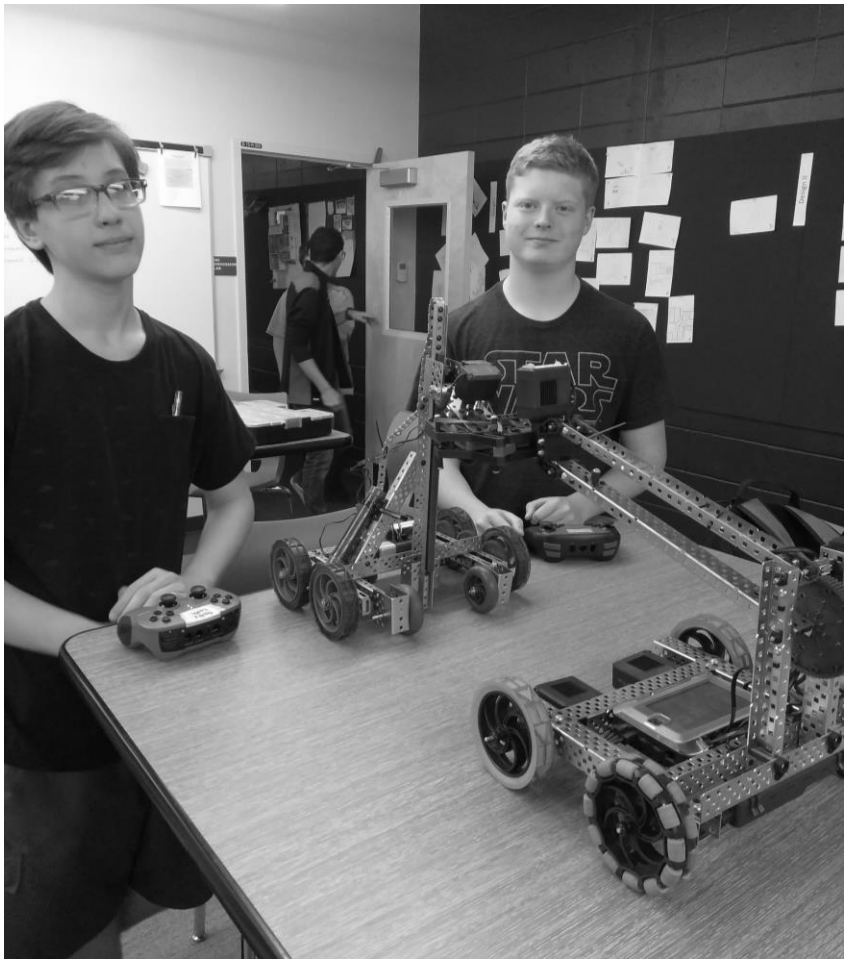
In the future after I graduate high school I think I would to go to school to become an engineering or an electrician. STEM would be useful with the fact that I can assemble things quickly and I know how to lead and how to follow the tasks. If I decide to pursue a career in electricity, I know how to deal with the many wires and I know what tools to use. Also, if I want I could become a video game programmer, I learned how to program this year. In the few months I have been in STEM it has taught me about team work, patience and persistence. (Jessica)

April 2019

Add a quote from the teacher.

Our team's experience in the ARC robotics class has been very beneficial to our learning experience. Our different tasks replicate real-world scenarios and help us problem-solve in and out of the classroom. Our latest task was to create a moving robot with a claw that moves up and down was successful and we were one of the only groups to pick up a block and place it in a different spot.

Overall, our time in the class has been used efficiently, and it shows in our work. All completing their designed task and purpose. The claw-bot first introduced our team to the different parts and specifications to the VEX robotics systems, and has been a key stepping stone to our prototypes. The second task of creating a fast and steady racing robot using mechanical advantage went as expected with a side of trial and error, and our recent robot with the elevator and linear motion kit helped us with teamwork and structural support. In conclusion, these robots and prototypes have helped us get a feel for the Dunedin robotics program.



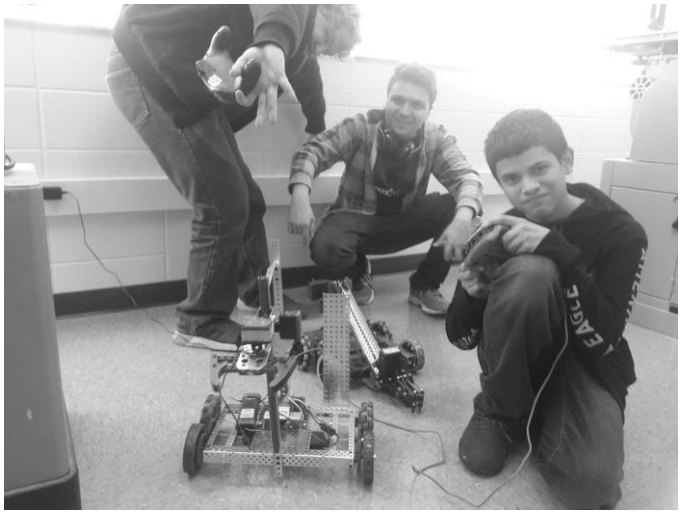
My experience in Dunedin High School's Robotics program has been quite fulfilling and interesting to me. It's given me valuable lessons in group and team compositions, responsibility, and perhaps most importantly creativity and ingenuity. Though I don't personally believe I myself have been anything close to the most successful participant in the program, I do believe that I've had some enlightening experiences, which I think is really the point of the robotics program; it teaches you to solve problems.

At the very beginning of the year, we all got that message. We weren't here just to put together bots, we were here to learn how to face problems of all kinds. One of the first things we, as a class, did in the Robotics program was to take in the engineering and design process, which I like to equate to a sort of scientific method of solving issues. Throughout the year, we were given several tasks pertaining to the building of specialized robots, which would ultimately be a test of our adherence to the engineering and design process. If we wanted to succeed, we would have to properly carry out each step of the process with consistency, accuracy, and dedication. In this regard, Mr. Awe and Mr. Smith have done a stupendous job of driving the point home.

Perhaps one of the most valuable lessons I've had to take in is that of group composition, pulling your own weight, and time management. Quite sadly, each attempt of our team building robots ended up with the need of some serious revisions and scrambling for time, and there was no shortage of times when parts of the team (myself included) simply were not present, even when they could have, or should have been. One of the worst killers of time in the process of building a robot is slacking off early on, and then needing to worry later, which I know that I myself have been guilty of this. After having been through this a few times though, you get yourself together, not wanting a repeat of "that last time", and teach yourself through your mistakes to become a more effective with your time management.

One of the aspects I've neglected referencing until now is that of the mathematics of robotics. In the class, we learn various mathematical principles essential to understanding robotics, such as gear ratios and equations related to electrical wiring. Although we don't spend much time on them, they do stick with you, as they are almost always necessary when putting together a robot for one of the various challenges we are assigned to work through. When we built a racing robot to demonstrate gear ratio, my partner and I found out the hard way how important these principles would really be.

With this, I am obliged to say that I feel Dunedin High School's Robotics program is about as good as it can be. It teaches young minds valuable practices for success later in life, and overall has an air of positivity and helpfulness that is hard to come by in school life. There was almost never a point at which I couldn't simply ask for one-on-one help from Mr. Smith, or be given very direct and clear instruction from Mr. Awe. All of this, I think, makes the Robotics program a monument of achievement for Dunedin High School, and I know for sure it's a class I absolutely love.



Notes from the PCS K-12 STEM Department

K-12 STEM Specialist, Laura Spence

STEM Communication

With STEM Academy Teacher

With 260+ STEM Academies impacting approximately 5,000+ students and their families, we are using email as our main form of communication.

During the week of April 15th, you will receive an electronic version of your child's STEM Academy newsletter that their Academy created. It is important that you keep your child's STEM Academy facilitator up to date with any changes to your email address.

With PCS K-12 STEM Department

To learn more about the PCS K-12 STEM Department and their district offerings please visit www.pcsb.org/STEM

2019 STEM Summer Camp Enrollment

The PCS K-12 STEM Department's, 2019 STEM Summer Camp Applications are now available. To download both camp application packets, please visit www.pcsb.org/STEM

K-12 STEM Department's 6th Annual 2019 STEM Expo

When: Saturday, April 27, 9:00am-1:00pm

Location: USF St. Petersburg Campus

Cost: Free and free parking

What:

- This event is used as a way platform to showcase the success of the PCS STEM Academy program. Your child will get an opportunity to present their STEM content knowledge to over 3,000 people in attendance.
- Keynote Speaker: 9am, Chris Fischer, founder of OCEARCH will share his passion for great white research and his love of ocean conservation and how it all connects to STEM education. www.ocearch.org

PCS STEM Apparel

PCS STEM Academy logo apparel is available to order! There are t-shirts, polo's, jackets and more for both male and females!
http://www.logooutfitters.org/pinellas-county-schools

Community and Business Support Needed

Volunteer's Needed

Are you someone who likes to work with their hands, has an interest in STEM content and wants to impact the future of PCS STEM Academy students? We are always looking for volunteers who are willing to donate their time. If you are interested in becoming a volunteer to help support the PCS STEM Academies, please email the PCS K-12 STEM Specialist, Laura Spence at Spencela@pcsb.org

Business and Community Support

If you are a business or community agency that would like to become involved by: providing speakers, donating resources, offering on site teacher PD opportunities, and other opportunities not mentioned. Please contact the PCS K-12 STEM Specialist Laura Spence at Spencele@pcsb.org to learn more.