

# Raspberry Pi Inspires Young Engineers

Greg Tucker, a recent recipient of a *Grant for Educational Excellence*, is the engineering teacher at Charlotte Catholic High School. Mr. Tucker shares with us a glimpse of how this grant is fueling creativity and ingenuity within his highly coveted honors engineering class.

## ***How have you utilized the Grant money in your classroom?***

The grant was used to purchase and license a small credit card size single board computer for use in the CCHS robotics lab. The Raspberry Pi is a small ARM based computer that costs \$35 and can be powered by any iPhone power supply. It has the ability to interface with any PC via web access, has a General Purpose I/O port to sense/control many devices, and a camera interface that allows remote monitoring. The Raspberry Pi is controlled by a 4GB memory card, which includes the operating system, various programming languages, and numerous applications that the students will use to control robots as well as other devices. The grant will also be used to purchase robots and controllers.

Over the next year, I envision the students using the Raspberry Pi as a master controller for the LEGO Mindstorm EV3 robot and the more advanced TETRIS robot. The Raspberry Pi teaches and inspires students to understand the basics of networking, computer programming, remote access, and programmable I/O.

## ***How has the grant enhanced or impacted your ability to teach Engineering at CCHS?***

Without the grant we wouldn't be able to teach basic robotic programming or advanced computer programming. The grant has allowed us to create a hands-on robotics/computer lab which helps teach programming and basic electronics skills.

## ***What was your situation like before receiving the Grant for Educational Excellence? What would you have done if you hadn't been able to get the Raspberry Pi?***

The students were able to learn basic electronics using snap circuits and some online simulations. We could not combine programming and electronics. We did utilize a virtual robotics' lab last year but it is very limited and you could only watch the simulation.

## ***What would you say to our Foundation donors regarding the direct impact the grant has made on your students and future CCHS engineering students?***

Your donation has directly impacted the engineering class by allowing us to challenge our students' creativity by providing them a basic microprocessor platform that they can use to develop numerous products or services. In fact, several students have purchased Raspberry Pis for personal use and one has built a home entertainment system with his Pi and another is using it as his personal web server.

***Interviewed by board member, Carry Swan***