



Growing the roots for STEM education

BY RACHEL M. CATHELL

IN THE WORDS of Franklin Roosevelt, “We cannot always build the future for our youth, but we can build our youth for the future.” This statement resonates through the high schools of Brandywine School District as they stand on the forefront of STEM education.

As many know, STEM is an acronym for science, technology, engineering, and mathematics. However the program delves far deeper, touching on important skill sets such as critical thinking and complex problem solving, which connect each element of STEM. Brandywine School District has recognized these skills as crucial tools for their students to maintain a standing in our technologically advancing workforce and global economy.

“The Brandywine School District made a significant and intentional commitment to STEM education through our Race to the Top plan. That investment has paid off many times over through the achievements of our students,” says Superintendent Mark Holodick.

Now named a Superstar in Education, the district’s pay-offs did not come without hard work and reconstruction. The district first recognized a widening gap between an aging technology education and the evolving economy. This gap influenced the district to instill the new Brandywine School District Engineering and Education Principles.

The progressive principles are meant to complement already established science and math programs. Altogether, the outcomes prepare students to be viable competitors for STEM careers.

The importance of the new curriculum comes at a time of necessity. According to the Economic Development and Employer Planning system, over the course of the next five years, a 6.9% increase of STEM related jobs would emerge in the industry. In order to face the demand of increasing STEM careers, Brandywine School District first had to answer the challenge of inspiring more students to engage and excel in the intensive curriculum the program upholds.

STEM pathways often seem daunting to students, so Brandywine addressed the issue with redesigned learning methods. The new methodology of the program challenges students to be problem solvers using innovative thinking, troubleshooting, design concepts, and creativity. According to the superintendent, the district professionals “have raised the bar for students at Brandywine, Concord, and Mount Pleasant High Schools, adding rigor, and indeed fun, through robotics, coding, 3D printing, computer-aided manufacturing, design labs, community and industry partnerships, and much more.”

The outcome is to establish thought processes that can be applied

Superstars in Education

to real world challenges. The district's high schools developed a new academic atmosphere that touches on nontraditional education methods such as collaborative work, experimentation, movement, and visible thinking. The new approach has rendered Brandywine School District as leaders within the STEM Program.

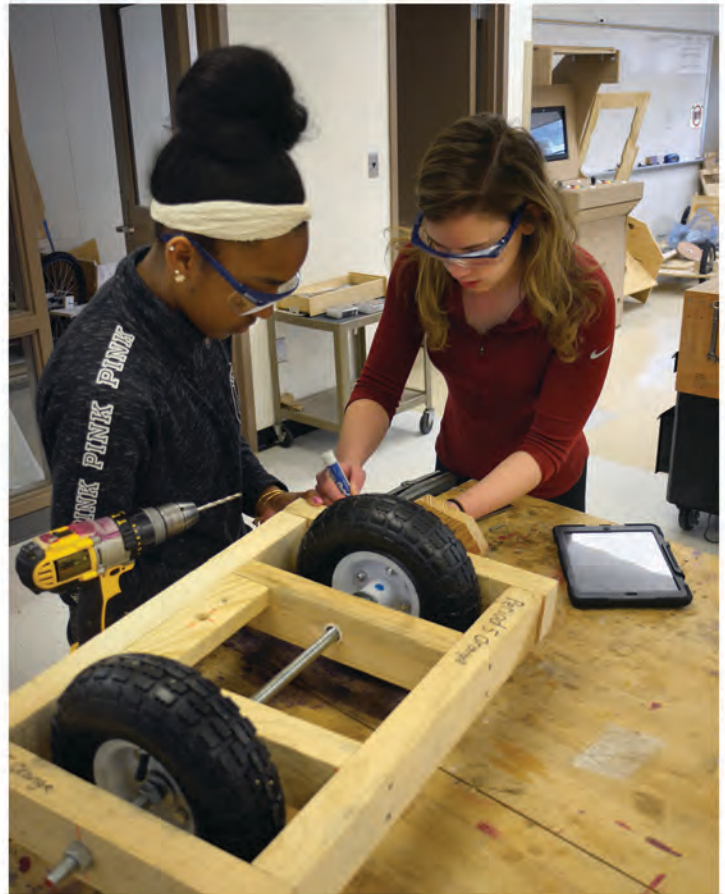
"Students are engaged to the point that they are spending their own time after school to continue to work on STEM-related projects, gaining teamwork and leadership skills, along with learning science, technology, engineering, and math," says Holodick.

The new methodology behind STEM has immensely impacted the district's high schools.

Enrollment in the program is on the rise, and pathway completion rates and achievement scores for STEM students have increased. A specific goal for Brandywine School District was to increase female participation and minorities in STEM. The enrollment of such underrepresented groups has doubled. "I am particularly proud of the increased interest and enrollment by female students in our STEM classes, starting in the elementary level and working all the way up through high school," says Holodick.

Ultimately, Brandywine School District has a goal of attracting STEM related businesses to North Wilmington. The district, similar to Roosevelt's statement, is building up and preparing the youth for an innovative and excelling future. ■

Concord High sophomore Christine (left), and junior Ashley, work assembling their electric car.



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