

## Finding a place of their own

By Mike Marsee

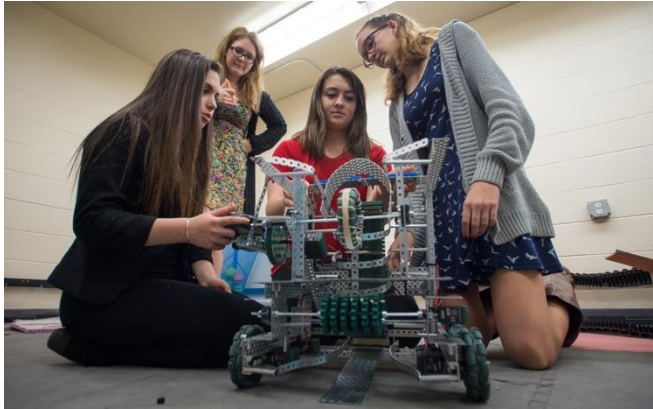
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They are constructing walls from balsa wood in one room and showing off the robots they built in another. They work in pairs and as a group, pushing and encouraging each other at the same time. If this were a typical engineering class, these girls would probably be somewhere in the background – if they were there at all. These classes, however, have been created just for them, and 13 girls have made them their own.

The Kenton County Schools' Women's Engineering Academy launched this year as an outlet to give girls both the instruction they need and the confidence they might be lacking to pursue careers in engineering or other STEM fields. From designing robots to delivering presentations, they are learning what professionals in those fields are expected to do.

"We all think similarly, we all have the same perspective on a lot of things. We learn at basically the same pace and it's a better sense of community. I think that contributes to us learning at a more advanced pace," said Hailey Poe, a student at Simon Kenton High School, which hosts the academy that draws students from Kenton County's three high schools.



**Madison Myers, from left, Hailey Poe, Lauren Freeman and Janie Pierce, students in the Kenton County Schools' Women's Engineering Academy, show off the robot they used in the Kentucky VEX robotics competition during a class at Simon Kenton High School. They are among 13 freshman girls taking part in the first year of the academy, which is part of the Kenton County Academies of Innovation and Technology program and is intended to attract more girls to engineering and other STEM fields.**



**Hailey Poe, from left, Hannah Sipple, Janie Pierce and Lauren Freeman try to secure a device onto the arm of Sipple. The device helps secure an iPhone to the user's wrist.**

The program is part of the district's Academies of Innovation and Technology program, a 3-year-old collection of programs that serves nearly 800 students. The three established Kenton County engineering academies typically attract very few girls, and academy director Francis O'Hara said those girls who signed on often took a back seat.

"When it came to competitions, they'd sit quietly in the background and they always let the boys build the robots. You sort of get used to it, but we decided not to get used to it any more," O'Hara said.

Officials set up an engineering academy just for women that would be unlike any other career/tech program in the district, then set out to recruit freshman students for its first class. They visited 8th-grade girls in the district's four middle schools, where they had targeted 151 girls who were taking either Algebra I or geometry. "We pinpointed those females and talked to each of them, and we said we were trying to get 10 percent of them to sign up for a new academy," O'Hara said.

Twenty-nine girls did, but that number dwindled due to what O'Hara called "fear factors." Janie Pierce, a Simon Kenton student, said she gave in to the fear just before she started high school. "I dropped out, but I immediately tried to get back in," Pierce said. "I was so overwhelmed, I think, by it. But once I got a glimpse of what high school really is, I definitely wanted back in my academy."

Pierce and her fellow freshmen assemble at Simon Kenton near midday – some come from Dixie Heights and Scott high schools – to spend the second half of their school day in engineering, mathematics and English classes.

“I went from having one or two female students in a class of 20 or 25 to having all females,” said engineering teacher Adam Klaine, one of the academy’s three teachers. “I was a little concerned about the dynamic of an all-female class initially, but it has quickly grown to become the class that I look forward to most during the day.”

There also was apprehension among the girls, who were taking a different academic path from most of their peers as they made the already difficult transition from middle school to high school.



**Janie Pierce measures pieces of balsa wood for her project. Pierce’s younger sister Annie will join the academy’s second class this summer.**



**Hailey Poe, left, and Lauren Freeman, right, secure a device onto the arm of fellow Women’s Engineering Academy student Hannah Sipple as Janie Pierce looks on. The device helps secure an iPhone to the user’s wrist.**



**Hannah Sipple cuts a piece of balsa wood for her project. The students have also made presentations, visited colleges and met with female engineers.**

“I was kind of hesitant just because it was a new academy. But I was excited because we would be on an accelerated course and we would be the start – the pioneers, they call us – in this new academy,” Simon Kenton student Lauren Freeman said.

Over the course of the school year, these pioneers have developed a bond.

“We can all grow more relationships with each other than maybe we could in a co-ed class, because girls tend to bond with each other easier. I think that really helps in this academy, because we want to be able to support each other and help each other through everything,” Simon Kenton student Luna Smith said.

The girls have performed well in competitions with their peers from other programs – they finished seventh in the Kentucky VEX robotics competition.

There has been an effort to expose the girls to female engineers. The program has established a relationship with Toyota, and the girls have visited its Georgetown manufacturing plant, as well as visits to other companies and colleges.

“Every time we’re taking them on a tour of an engineering company or a university or college, they’re getting exposed to so much,” O’Hara said. “I don’t care if they become engineers or not, they’re going to be highly successful.”

The program also reinforces speaking and listening skills, which are a part of the state’s English/language arts standards.

“I think it’s just constant pushing. We have a seven-area report card where we focus not only on the curriculum that we’re teaching, but also on collaborations, critical thinking, presentations, projects, work ethic and real-world writing,” English teacher Alyssa Leimenstoll said. “We push them in all of those areas, and eventually they’re not afraid to write something that’s different from what everybody else is writing.”

“Presentations are a really big deal for them. ... They all presented in front of a panel of engineers months ago, and they’ll all do it again in another month. I think presentation is the area where you’ll see them have the most growth throughout this year.”



**Francis O’Hara, director of the Kenton County Academies of Innovation and Technology program, speaks to the Women’s Engineering Academy students. O’Hara said girls who were taking Algebra I or geometry as 8th-graders were targeted to join the academy in its first year, and another group of 8th-graders has signed on for next year.**

The students said those initial presentations were challenging.

“Everyone was coming back and saying, ‘They tore my presentation to pieces,’ but it ended up being better than we could have expected, because all of us got good critiques,” Simon Kenton student Su’Mya Herndon-Jones said.

All 13 girls in the program have committed to a second year, and 36 current 8th-graders signed up to follow in their footsteps as freshmen next year. O’Hara said he expects 15 to 20 girls to make up the second freshman class.

“These 13 will be their big sisters,” he said.

That’s especially true for Pierce, whose younger sister, Annie, signed on for next year.

“She was really nervous about it, but we know they’re going to come in here and it’s going to be great and they’re going to have a lot of fun along with a lot of learning opportunities,” Pierce said.

Erin McLafferty, a student at Scott, said she thinks the academy will become much bigger by the time she leaves high school, perhaps even expanding to multiple classes.

“I see the academy in four years as something that has definitely lifted off the ground,” she said. “I feel like it’ll grow, and as it grows it’ll bring more benefits to the students that are in it.”



Casey Lail, left, marks a measurement on a piece of balsa wood as Madison Myers cuts another piece during a construction project in their class at the Kenton County Schools’ Women’s Engineering Academy. They are among 13 freshman girls taking part in the first year of the academy, which is part of the Kenton County Academies of Innovation and Technology program.



Luna Smith demonstrates the device helps secure an iPhone to the user’s wrist as Hailey Poe looks on.



Luna Smith, left, and Su’Mya Herndon-Jones work on their wall-building project together in Adam Klaine’s engineering class. The Women’s Engineering Academy students spend half of their school day in the program taking classes in engineering, mathematics and English.

All Photo by Bobby Ellis, April 7, 2016

MORE INFO ...

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