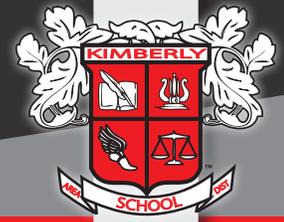


# SchoolMatters



Special Insert  
November 2019

School News for Residents of the Kimberly Area School District



Robert S. Mayfield, Ed.D.  
Superintendent

Inside this special insert to our newsletter, I am highlighting the improvements that have been made to enhance our computer science offerings. These developments are a great example of how curriculum updates and Academic and Career Planning can prepare students for their future.

All Kimberly students now begin learning about computer science starting in the fifth grade. We are preparing students for high-demand and good paying STEM (Science, Technology, Engineering and Math) career pathways that exist right here in our community.

-- *Bob Mayfield*

## Creating Computer Science Opportunities for Students

The Information Technology (IT) field is poised to be one of the fastest growing job markets in our area with an estimated 3,000 new jobs in Northeast Wisconsin by 2021. It is important for all students, including those who are not pursuing an IT career, to learn about technology because it has an increasing role in all career pathways and in modern society.

In order to better prepare students for their future, we continue to focus on enhancing our computer science offerings. Past editions of our newsletter have highlighted the importance of keeping technology up-to-date and available for use to students and staff, and the partnership with Microsoft's TEALS program, which pairs local experts with teachers to co-teach computer science classes at a higher level.

Kimberly High School (KHS) students are seeing success with higher level computer science coursework by earning awards at competitions and Advanced Placement credit. Recently, junior Jacob Farrell was involved in two different national computer science competitions where each team he was on earned a top place.

The KHS team, comprised of students Jacob Farrell, Gavin McGowan and Isaac Yang, participated in New York University's Tandon School of Engineering CSAW Red Team

competition for high school students. CSAW Red is a Jeopardy-style capture the flag competition based on cybersecurity. The KHS team is one of only 11 finalist high school teams from the U.S. that advanced to compete at NYU in November.

Jacob also belongs to a picoCTF team with students from Tigard High School (Tigard, OR), Whitefish Bay High School (Whitefish Bay, WI) and Interlake High School (Bellevue, WA). The picoCTF competition is a free computer security game targeted at middle and high school students. It is a capture the flag style game with 121 challenges created by security experts at Carnegie Mellon University. With their win, these students will receive a paid trip to Carnegie Mellon for the awards ceremony and they will split the \$6,000 prize among the team members.



The KHS team, comprised of students Jacob Farrell, Gavin McGowan and Isaac Yang, are finalists in NYU's CSAW Red Team competition for high school students.

Another KHS student also pursued a computer science opportunity created by a university. Senior Grace Guilette was selected for the It Girls Overnight Retreat at Syracuse University where she learned about the information studies field with other young women from across the country. Participants took faculty-led courses, participated in hands-on workshops and connected with professional women working in the IT field.

Students in grades 5 through 8 are also benefiting from recent expansions of the computer science curriculum. At J.R. Gerritts Middle School, students are able to take elective classes such as App Creation, Web Development, Animation and Game Design, Physical Computing and Robotics.

The Research and Design class at JRG is combining pre-engineering concepts with computer science on their group project. This year, the groups are building a Vex Robot that performs a specific task. Throughout the course, students challenge themselves and develop critical thinking skills. They learn blueprint reading, drafting, 3D modeling and computer programming to create and operate their robot.



Madison Gunckel and Georgia Teske testing their VEX robot at JRG Middle School.

The robots being developed in this class perform tasks such as turning the pages in a book and picking up crumbled papers then putting them in a small box for disposal.

Intermediate school students, those in fifth and sixth grade, now have required computer science standards added to their current Computer Applications coursework. This means that every fifth and sixth grader receives 10 computer science lessons each school year.

Teachers use the Code.org curriculum because it aligns with the District's computer science standards. The lessons are game-based to motivate the students as they work through a variety of tasks and obstacles. The coursework is geared at introducing students to coding curriculum and enhancing their problem-solving skills.

One notable computer science achievement is that student interest has spurred the creation of computer science related clubs at every District school serving students in fifth through twelfth grade.

During computer science advisory meetings, the students, parents and industry leaders in attendance felt that hands-on experiences were especially beneficial to those considering this career field.

Examples of hands-on experiences beyond classes and clubs include job fairs, guest speakers, apprenticeships, competitions, job shadows and field trips. Providing more hands-on STEM opportunities for students requires creativity and additional resources from schools and local organizations.

Having the opportunity to experience computer science careers firsthand helps students to develop a better understanding of the career pathways that interest them. We are preparing students for the growing role computer science has within the Kimberly Area School District and in society.

“For anyone thinking about computer science as a potential hobby or career path, it’s best to jump right in and start searching for beginner resources online,” said Jacob Farrell. “When I first started learning computer science, it was the continuous gratification of learning new things and making connections between my learnings that kept me enticed. Everybody has to start somewhere when they are building a new skill. Nobody was good at riding a bike right away and likewise nobody is born a proficient programmer.”



Grace Guilette participated in the It Girls Overnight Retreat program at Syracuse University.

“My experience at the It Girls Retreat provided me many connections with other women interested in information studies.”

--Grace Guilette  
Senior at KHS

“Everybody has to start somewhere when they are building a new skill.”

--Jacob Farrell  
Junior at KHS