

The Path to a STEM Jobs Starts in Elementary School

A forward-thinking superintendent details how she transformed her general ed program into a series of career academies.

By Dr. Geneva Walters

When you think of STEM, it's likely you think of science, technology, engineering, and math, all rolled into one. At [Kankakee Schools](#) in Illinois, our STEM program aims to do a lot more than teach four topics: We want our students to *apply* what they learn in real-life settings.

According to projections by [STEMconnector.org](#), by 2018, the U.S. will need 8.65 million workers in STEM-related jobs. As a district, we have to ensure that our graduates are prepared for life after formal education and ready for the jobs of the future. From the moment students walk through the door of Kankakee school to the time they walk across the stage to receive their high school diplomas, they are constantly transitioning to their next stage of life. As educators, we have to prepare them for any challenge that will be thrown their way.

While our gifted and magnet programs have traditionally been a top priority for our district, it's my mission to level the playing field by providing STEM and career exploration opportunities to everyone. At the beginning of the 2015 school year, we implemented a new K–8 reading and math curriculum, and renamed general ed “College and Career Academy Classrooms.” Knowing that the number of STEM-related jobs is growing rapidly, I put STEM at the core of our general Ed overhaul and added a cross-curricular focus on real-life application, [Next Generation Science Standards](#), and career exploration through project-based learning.

My teachers and principals are inspired to think past the traditional teaching style of memorizing facts to pass a test. They work to facilitate creation, push students toward critical thinking and problem solving, and teach students how to apply what they've learned beyond the classroom.

Traditional education teaches and assesses academic skills in isolation. When students are not able to make the cross-curricular connection, they lose engagement with their own learning. Project-based learning makes STEM feel relevant because students have to use knowledge from all areas to complete a task. Demonstrating their skills through projects also prepares students for the challenges they will face after graduation.

To ensure that each student in kindergarten through sixth grade is exposed to a variety of different STEM careers, I created a virtual career wheel for teachers to follow. Each grade focuses on a different range of careers, so as students move through school they have a chance to explore a variety of fields and figure out where their interests lie. For example, first graders focus on careers in agriculture, food, and natural resources while third-grade students focus on engineering, outer space, and plant life.

During the school year, students undertake four large-scale projects that align with their grade-level focus (and appropriate state standards). We use supplementary curriculum from [Defined STEM](#), which breaks down tasks by grade level and keeps all lesson

materials such as articles, videos, and rubrics in one spot. Hands-on projects may take the form of building models, solving problems, creating videos, or writing magazine articles—and the list goes on. The projects give students room for individual creativity while testing the problem-solving and collaboration skills they have learned in all subjects.

Through middle and high school, students participate in career-interest inventories and choose from numerous educational tracks, including Freshman Academy, Business Academy, and Medical Academy. In the near future we will be adding a STEAM or STEM Academy and a Leadership Academy with ROTC. In the coming years, the high school will transition to the same sort of academy model that the elementary school is using now. By the 2019–2020 school year, each sophomore will choose an academy for the remainder of school.

Our future plans for incorporating STEM across the curriculum include connecting physical education to STEM, and exploring a Kinesthetic Sports Magnet program. For Summer 2016, we've partnered with a local community college to create a girls' camp. We plan to expand that partnership further in the coming months.

Since Kankakee switched to a STEM focus, we have seen an increase in student performance in math and reading. Students are more engaged working in cooperative groups, and they've even organized a "dress for success day" every month. Our teachers have transferred the core responsibility of teaching and learning back to our students, who are developing the 21st-century skills they need to succeed.

Dr. Geneva Walters is the superintendent of the Kankakee School District in Kankakee, IL.