



Eighth-graders Shawn Turk, Logan Paul, Cara Murthy and Erica Crocker analyze evidence as part of a Classroom CSI unit.

A crime has been committed. The scene is secure, the witnesses are lined up and there's a pool of suspects who need to be ruled out before making an arrest. It's a job for the crime scene investigative unit — but we're not talking about the usual hot shots from New York or Miami. The detectives who must solve this crime are eighth-graders at Lee Burneson Middle School.

It's part of science teacher Sandra Vontroba's Classroom CSI unit that aims to show students how to apply what they've learned in chemistry to a real world situation. Vontroba creates six fake crimes and then students must interview teachers and staff acting as victims and potential suspects and use technology to problem solve until they find the guilty party.

It's just one way educators at Lee Burneson are incorporating new age practices into the curriculum. Thanks to a recent grant, there are many more hands-on lessons in the works. In May 2008, the district received a more than \$500,000 STEM Programs of Excellence grant to upgrade classroom technology and revamp science, technology, engineering and math programs. The funding, awarded through the Ohio Board of Regents/Ohio Partnership for Continued Learning, will benefit the 675 students at the middle school.

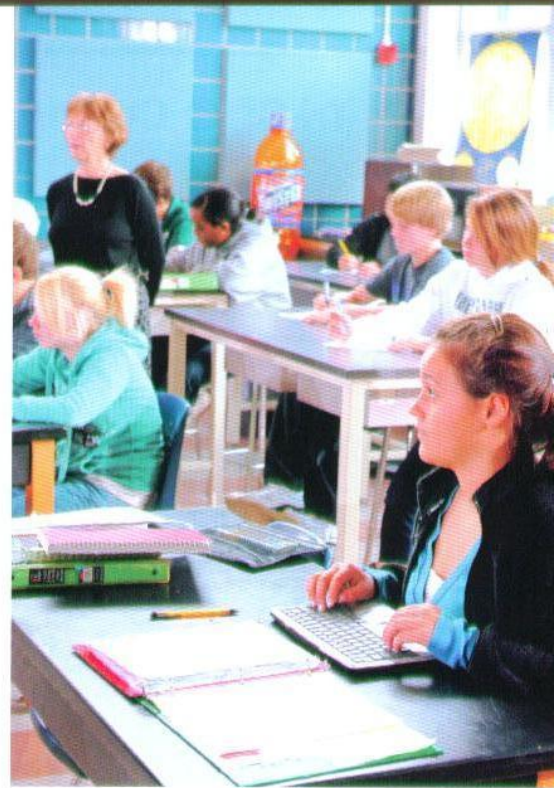
Tech-Savvy TEACHING

A recent grant has helped kick-start a new middle school program aimed to take classroom curriculum to the next level.

By Beth Stallings



Sandra Vontroba in her science classroom



Lee Burneson student Kahla Fury uses a wireless keyboard to take notes and post questions on a projected display during her eighth-grade science class.

It is designed to increase engagement and a passion for learning through hands on experiences. STEM projects begin with a problem, explains Pam Griebel, Westlake schools academic services director. Through experimental design methods, students research the subject and then create a tangible product that serves as a solution.

“What we wanted to do was create a program in our middle school that would contribute to this intellectual and entrepreneurial talent that our students need,” Griebel says. “We need to start engaging the passion of kids early. They’re at the perfect age to whet their appetite toward the areas of math, science and technology and to show them there are cool opportunities out here.”

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— Sandra Vontroba, science teacher

The program officially launched at the start of the 2008/2009 school year. The summer was spent on extensive staff development with math and science teachers. And only a month into the school year, instructors were already seeing results.

“I have had my highest grades ever this year,” says Vontroba, adding she sees a notable increase in student attentiveness. “I’ve never had such high scores at the beginning of the semester.”

Vontroba has integrated STEM practices into her curriculum in past semesters, such as with the Classroom CSI unit, but the state funding has given her and other Lee Burneson teachers the opportunity to move the teaching forward by giving them access to new technologies. The six-month grant has been used for curriculum and technology updates — namely robotics, computers, LCD projectors, immediate re-

sponse remote devices and TI calculators.

“We can make things two- to three-dimensional. And my students hit the floor running the minute we start using technology,” Vontroba says. “They’re acclimated to animation and interactive wear. What we work with now is interactive.”

For example, students can glean things from the Internet, put it on a screen and use portable keyboards to manipulate the information.

In light of this ability, Vontroba’s classes now encompass product design, covering all aspects of creating an item for the mar-

ket. Students are involved in marketing, establishing focus groups to test the market, product design and accounting — learning how to work together in these different departments to meet one deadline.

Last year, separate classes were challenged to make a better candy bar, a locker organizer, edible toothpick and a better potato chip. Through a conference call, one class worked with local snack foods manufacturer Shearer’s Foods Inc. to troubleshoot their design.

With the implementation of the STEM program, a distance learning lab will be created to make communications with professional companies even easier. Westlake schools have partnered with higher education institutions such as Lorain County Community College, The University of Akron and Cleveland State University and local businesses including Energizer Bat-

tery Manufacturing Inc., the Great Lakes Innovation and Development Enterprise, Hyland Software and Lakewood Hospital Cleveland Clinic.



While primarily involving math and science courses, the program in Westlake schools aims to go one step further, integrating all facets of study including social studies and language arts.

Vontroba’s goal is to show students that history, math, engineering and science are all interdependent. For example, the science and history departments worked together to research the technology that came about because of the Civil War, finding that such inventions as funeral parlors, ambulances and wheelchairs arose because of a historical need.

And during the 2008/2009 school year the seventh and eighth grades are putting together their own cross-curricular project. The eighth grade classes are creating a green room — a prototype of an outdoor classroom that can be used for every genre: math classes are determining measurements; music class is conducting an opening song; history classes are making sure the design fits within laws and regulations; language arts is writing a proposal and science is identifying what materials can be used.

“This is something that we really want to carry through,” Griebel says. “This will really enhance instruction and over time we will become a premier program.”