Surveyors don't need advanced tools to see changes on the horizon for their industry. While the economic slowdown has meant challenging times today, many indicators show increased opportunities in the future. So the question is not whether there will be jobs for surveyors, but whether the increasing need for technologically proficient surveyors and geospatial professionals will be effectively met. Today, one Northern California high school is ready with an answer. Armed with the latest Trimble technology, two Piner High School science teachers are getting students out of the classroom and into the field to practice science, not just learn about it. And they may help change the face of GIS and surveying in the process.

Kurt Kruger and Kristi Erickson, science and technology teachers at Santa Rosa's Piner High School, wanted to get students on their feet actually doing science instead of just sitting in a classroom "listening to teachers talk, reading books and doing problem sets," says Kruger. With its combination of cutting-edge technology and growing number of field applications, GIS and surveying was a natural solution to the problem. They set out to introduce a new discipline into Piner's curriculum, the Geospatial Technology Pathway (GTP).

Now, two years into the first three-year GTP cycle, Kruger and Erickson are exhausted but exhilarated. Still in "building mode," they are working hard to get the word out and raise money for the tech-heavy program. Current inventory includes a Trimble GPS Survey System, Nikon DTM-322 5" Total Stations, Trimble Juno ST and Juno SB GPS Handhelds, Trimble GPS Pathfinder ProXT Receivers, Trimble TerraSync, and Trimble GPS Pathfinder Office Software.
Even at this early stage, the teachers say the program is a success: from first-year geocaching projects to introduce GPS applications, to the anticipated third-year field-work with professional surveyors, Piner’s GTP has already succeeded in getting kids into the field solving real problems. And the geospatial community is taking notice.

From the start, Piner’s program has been a team effort: local professors, professional surveyors and the Trimble community have all supported this one-of-a-kind program. Local survey firms including Ray Carlson and Associates, Inc., and Cinquini & Passarino, Inc., are active in the program, offering training sessions, use of advanced Trimble GNSS surveying equipment and a commitment to provide staff surveyors as mentors for third-year GTP students. The City of Santa Rosa has also supported the program with geospatial data and maps for the program; and the Sonoma County GIS Director has helped Kruger and Erickson with curriculum and GIS questions that have come up during the year. California Survey and Drafting Supply (CSDS), which donated the Trimble GPS survey system, has given the teachers training on the use of the technology, and Trimble representatives recently spent a day in a local park working with the kids as they learn Trimble TerraSync Software.

But even with all this professional support, the program would be nothing without the kids.

Long before the program began, Piner kids were included in planning the new pathway, says senior (final year) and GTP student Lauren Durling. Durling was invited to sit on the board that analyzed the viability of the GTP. Kruger says, “If the kids hadn’t shown enthusiasm for the program, we might never have gotten off the ground.”

Today, Durling is in her second year as a GTP student, and spends her days mapping the campus and learning the technology. Though she kind of “fell into” this class, Durling has developed a love for maps as a means of solving real-world problems. Classmate Travis Scaife was encouraged to sign up by his dad, who works in underground construction. As a self-described “tech nerd,” Scaife says he’s in it for the technology.

Scaife spent a recent day mapping the trees on campus. He says it was a surprise how easy it was to learn the technology. Initially intimidated, he found it “pretty easy to catch on” with the Trimble devices. Durling was surprised as well, that it was so much fun. “The hands-on stuff is really cool, and the teachers are really cool too,” she says. “They don’t follow us around all day. They give us the GPS units and say, ‘Go get your data!’”

Building on the experience of mapping campus features, the students will be using the new total stations to fulfill a service project at a local creek in need of restoration. They’ll set accurate boundaries and create precision maps of the creek—all with the goal of solving a real problem for their community. How many class assignments can you say that about?

Piner’s immersive GTP is already unique in the country, but Kruger and Erickson are not ready to sit back yet. They are currently working with the district on designs for a $3-million geospatial science center that will include a new GIS lab, along with a wealth of geospatial/environmental research technology. GTP students are expected to participate in the preliminary site surveys in support of licensed surveyors.

For Erickson and Kruger, what began as a passion to teach real-world science has become a pathway to careers for their students in a changing and growing field. Armed with the knowledge of traditional survey and mapping skills, the foundation of any geospatial application, they will have a huge advantage in the workplace no matter what path they pursue.

See feature article in American Surveyor’s February issue: www.amerisurv.com