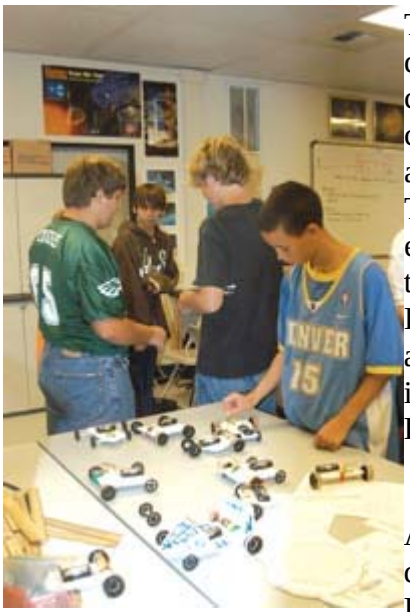
Templeton launches state's third Endeavour Academy

BY JILL IVIE 9-26-06



The Templeton Unified School District became the third school district in the state to implement the Endeavour Academy curriculum at the outset of the school year, offering advanced courses through the Templeton Engineering Academy for middle and high school students.

The program offers Aerospace Modeling and Technology to eighth graders and Introduction to Engineering for ninth and tenth graders. TUSD signed a five-year contract with Space Information Laboratories, Inc., that will allow them to expand and offer the entire Endeavour Academy course sequence, including Mechatronics for high school juniors and Engineering Design for high school seniors, over the next five years.

A grant for $50,000 was provided by Boeing and equipment donations equaling $300,000 were donated by Space Information Laboratories, Inc. to assist TUSD transform portable classrooms adjacent to the superintendent's office into the Endeavour Academy building and learning lab, centrally located to house both middle and high school students.

The Endeavour Academy program was adopted in the Paso Robles School District in 2000 and at the California Academy of Math and Science in Los Angeles in 2001. Classes taken through the Endeavour Academy program are approved by the UC system for college application and can substitute for Lab Science D classes required by state mandated high school curriculum. "If a student wants to go into a science STEM career, this is a partnering," said Edmund Burke, president of Space Information Laboratories, Inc. and founder of the Endeavour Academy. "Hopefully they'll be more successful when they get to Cal Poly because the spirit is here."

The focus of the program is meant to give students interested in pursuing careers in science, technology, engineering and math (STEM) an early start on their academic path. The program curriculum features a more hands-on, activity based learning environment in the specialized studies.

Another aim of the program is to span the chasm between middle school, high school and college. Graduates of the Endeavour Academy are promised to receive "special consideration" for admission into Cal Poly and Cal Poly faculty and student groups, like the engineering honors society Tau Beta Pi, have several service activities planned to work with the Paso Robles and Templeton High School Endeavour Academy students. Endeavour Academy students are also planning to take field trips to Cal Poly engineering work labs.

"Engineering in America is experiencing an invisible crisis," said Dr. Charles Birdsong, Cal Poly assistant professor of mechanical engineering and Tau Beta Pi advisor. "Programs like this create excitement and interest and that is what is needed to keep engineering strong in America or else it will grow elsewhere where the hunger and excitement are still there."

Cal Poly engineering students sport an average dropout rate of 35 percent to 45 percent. Those involved with the launching of the Endeavour Academy in Paso Robles and Templeton hope to see those numbers changing in the upcoming years.
“STEM education is really important because without future engineers, we will not be able to fill the seats of engineers that are rapidly retiring,” said Christopher Taranto, media and public relations manager for the California Space Authority.

Both the Aerospace Technology and Modeling class and the Introduction to Engineering Science class are taught by Jill Southern, a Templeton district math teacher and a Cal Poly engineering school graduate. “It has been really exciting the first few weeks seeing the change in kids already,” Southern said. “They are understanding that this could be something very important for their future.”

The Templeton Engineering Academy for the middle school and high school had 50 students sign up for the first two levels of classes at the outset of the year.
Middle school students taking the Aerospace Modeling and Technology class do not receive science credits like their high school counterparts, but the class does satisfy elective credits.

“My dad is an engineer and he taught me a lot of stuff,” said Micheal Trotter, an Aerospace Modeling student at Templeton Middle School that has plans to be an architectural engineer. “I’m going to stay with it until I graduate college.”
Students in the Aerospace Modeling class are looking forward to competing in Team America Rocket Challenge at the end of the year. Teams are already working on their top secret designs for the nation wide competition.

“I like all the experiments we get to do,” said Jackson Hollstien, an Aerospace Modeling and Templeton Middle School student. “I like all the experiments we get to do and everything we get to build. It is really, really hands-on.”

Students from last year’s Endeavour Academy program at Paso Robles High School developed a number of products that won at national competitions and were patented for sale including roller coaster models, rockets and weather balloons.
“Somehow engineering has lost the mystique it use to have,” Dr. Birdsong said. “I can’t imagine the impact this program would have had on my life. I would like to follow some of these kids for five or six years and find out what’s going to happen.”

Endeavoring to inspire students

The Templeton school district’s new Endeavour Academy offers hands-on learning in middle school and high school to turn on students to careers in science and engineering

By Nick Wilson, Sept. 27, 2006

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Tribune photo by Joe Johnston

Sophomores Dustin Boeddeker, left, Evin Hinrichs and Harris Goodwin practice soldering during their Endeavour Academy class on circuits at Templeton High School. An aerospace modeling class is offered at the middle school.

Eighth-grader Matthew Hollander enjoys his aerospace modeling class so much that he bought a model rocket and built it from a kit to practice for a project that the class hasn’t even started yet.

His teacher said the enthusiastic boy has "found his niche" in the Templeton school district’s Endeavour Academy — a new science and engineering program.

"Matthew is all about the rocket," said Jill Southern, Templeton’s Endeavour teacher. "He’s the rocket man."

Hollander’s attitude about hands-on learning is precisely what the new Endeavour program hopes to inspire in students.

In a conference Friday, Templeton students and staff met with Cal Poly engineers and local members of the media to talk about the new program.

Endeavour is a partnership between the district and the nonprofit Space Information Labs Inc. based in Santa Maria. The contract with Templeton is for five years and SIL has contributed about $300,000 in equipment, according to Edmund Burke, president of SIL and founder of the Endeavour program.

Paso Robles High School and the California Academy of Mathematics and Science in Carson also have Endeavour academies. Burke is trying to expand the program to other schools.

This year's classes include aerospace modeling at Templeton Middle School and introduction to engineering at Templeton High School. Templeton's is the first middle-school program in Endeavour history, and Southern, a Cal Poly engineering graduate, is the first female teacher.

Several Templeton students said that Endeavour is more exciting than other classes because the lessons are practical.

Since school started about a month ago, Templeton High students have practiced soldering in their lesson on circuits. And the eighth-graders have built telescopes from cardboard, plastic, foam and washers.

"I've really enjoyed working with light and lenses," said Sam Guio, 13. "We used them to look at the moon."

Brittaney Hunsaker, 13, said her interest in aerospace modeling, an elective, was partly influenced by her grandfather who worked at Vandenberg Air Force Base. She grew up learning about rockets.

In preparation for the rocket building project, Hunsaker recently scored well on a test that included identifying parts of a rocket.

The faculty adviser for Cal Poly's Tau Beta Pi engineering honor society, Charles Birdsong, said that he's arranging for fraternity pledges to meet and work with the Templeton students as part of their mandatory community service.

Each semester about 20 to 30 pledges, typically juniors and seniors with top grades, could talk to students in teams assigned by specialty, including mechanics, electronics and aerospace, said Birdsong.

"When I was in middle school and even when I was a college student, I thought college was an impossible thing," Birdsong said. "I think it's good for students to talk to regular people who are doing it. The mentoring relationship is invaluable."

The Endeavour program started 12 years ago at Arroyo Grande High School in part to combat high dropout rates of college engineering students and the trend of U.S. companies outsourcing jobs to foreign engineers. The Lucia Mar school board cut the program at Arroyo Grande after a union grievance over the hiring of a non-union teacher.

Endeavour students are given special consideration for admission to Cal Poly and the Massachusetts Institute of Technology.

"It just makes sense to start students earlier so they're prepared for the rigorous training ahead," said Endeavour's founder Burke.

1st endeavour academy launched in TUSD

BY ANN FOSTER SEPT. 29, 2006

Engineering science, engineering mechatronics, aerospace technology and engineering design: not often classes associated with junior and high school curriculum, but that's not the case for the Templeton Unified School District.

This year, TUSD is teaming up with the Endeavour Academy, a specialized program for applied science and engineering, to provide a hands-on science curriculum for Templeton Middle and High schools.

Last year the school district signed a five-year contract with the Endeavour Academy that will provide students with exposure to science, technology, engineering and math career paths.

"In most mechanical engineering programs in college, there is a high drop-out rate, between 35 and 45 percent," said Edmund Burke, president and founder of Space Information Laboratories, Inc. and the Endeavour program. "This program focuses on team building, and working together is so important in this field. It takes more than knowledge to make it. We want to spark interest in these types of fields at an early age; the Endeavour program does that. It blends vocational training and academics together — they need both skills."

The college prep classes are offered to eighth, ninth, tenth, eleventh and twelfth graders as electives and are sustained through grants provided by non-profit organizations.

Once a school district signs onto the program, Endeavour Academy then secures funds through these outside sources; chiefly among those awarded to TUSD was a $50,000 grant by Boeing Foundation in Los Angeles.

The Endeavour Academy also provides course training for district teachers interested in teaching the program. Jill Southern, a Cal-Poly engineering school graduate and teacher at TMS, teaches the program for the Templeton school district students and instructs the four classes offered to students.

"Its been a really exciting first few weeks," said Southern. "Parents and students have been so excited. I'm getting a lot of feedback. The students are leaning that this is something to do for their careers. It's honing their math and science skills. This gets them charged up. The kinds of activities we do here don't happen in their regular classes. This is great. The kids feel like they are a part of something special."

The program focuses on working in groups and giving hands-on activities and projects, as well as field trips and competitions.

The eighth-grade class, aerospace technology and modeling, meets every day for 45 minutes, while the introduction to engineering science provided to ninth- and tenth-graders, Mechatronics which is offered to 11th-graders and engineering design for 12th-graders meets every other day to accommodate Templeton High School's block schedule. The classes offered to high school students all count for UC science, college prep, honors and lab science credit.

TUSD is also teaming up with Cal Poly science and engineering departments for special lectures and presentations where students and industry professionals can meet for a "real world" education information, which includes an outreach program from the Society of Women Engineers, according to Robert Cichowski, the director of the University Center for Excellence in Science and Mathematics Education at Cal Poly "We want to let these kids know that this is an option for them," said Cichowski. "My dad is an electrical engineer," said Jackson Hollstien, an eighth-grader in the aerospace technology class. "I heard about the program at the end of last year and was super psyched to do it. Other than all the experience so far, it's been a touch-back on the other science classes. Right now I'm into computers and a little bit of programming and I think that it will help me with my career choice. It's been a lot of review, but we're signed up for rocket competition later on. The top 100 get to go to Virginia, so we're excited to start that project."

The program is currently offered to two other school districts in California, including the California Academy of Math and Science in Los Angeles that started in 2001, and Paso Robles High School since 2000. Templeton is the newest addition to the program with the 2006-2007 school year being its first year using the program.

"It's exciting and ever-changing," said Southern. "They are getting a different sort of hands-on learning. Some students were simply looking for more."