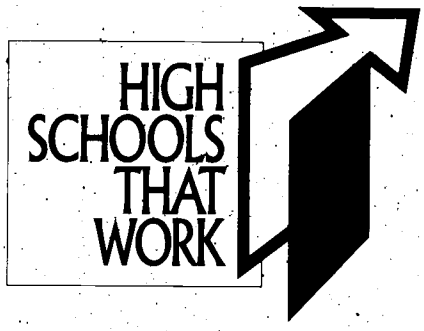
DOCUMENT RESUME

ED 404 541 CE 073 575

TITLE	1996 Outstanding Practices. Effective Strategies in Raising the Achievement of Career-Bound High School Students.
INSTITUTION	Southern Regional Education Board, Atlanta, Ga.
SPONS AGENCY	DeWitt Wallace / Reader's Digest Fund, Pleasantville, N.Y.
PUB DATE	96
NOTE	61p.; For the 1993 and 1995 Outstanding Practices report, see CE 073 573-574. For the 1993 report, see ED 382 814.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	Academic Education; Articulation (Education); Career Education; *Curriculum Development; Educational Change; *Educational Improvement; *Education Work Relationship; *General Education; High Schools; *Integrated Curriculum; Models; Noncollege Bound Students; Program Descriptions; *School Effectiveness; Vocational Education
IDENTIFIERS	*High Schools that Work

ABSTRACT

This booklet is the sixth in a series of profiles of "what works" at high schools in the High Schools That Work program. The first part of the booklet presents the key practices of High Schools That Work and descriptions of 10 schools that have replaced or are in the process of replacing the general track. The second section contains 23 descriptions of supporting practices at a number of schools that are moving toward the goal of high standards and high achievement for all students by replacing the general track. These practices are grouped in the following areas: (1) career or academic majors; (2) using student-centered instruction; (3) providing students with extra help; (4) involving teachers in school improvement; (5) working with business to raise student performance; (6) using data for school improvement; (7) leadership from the district office; and (8) building strong connections with middle schools and postsecondary schools. (KC)



1996 Outstanding Practices

Effective Strategies in Raising the Achievement of Career-Bound High School Students by Replacing the General Track

Southern Regional Education Board

Southern Regional Education Board
592 Tenth Street, N.W.
Atlanta, Georgia 30318-5790
Phone (404) 875-9211 • Fax (404) 872-1477

Table of Contents

Replacing the General Track— A Promising Route to Improved Student Achievement

As SREB nurtures a network of over 650 high schools in 21 states, it is becoming apparent that *High Schools That Work* sites making the most progress in advancing the academic achievement of career-bound students[1] are providing these youth an academic core taught to college-preparatory standards. These schools are successful because they give their students the structure and guidance to complete an upgraded academic core of mathematics, science and language arts courses topped off by an academic or vocational major that consists of four related courses.

In replacing the general track, these schools have received the active support of district office and local school administrators; teachers and counselors; local school board members; parents and the community.

The schools described in the first section of this publication have replaced the general track or are in the process of doing so. In the second section, you will find descriptions of supporting practices at a number of schools that are moving toward the goal of high standards and high achievement for all students.

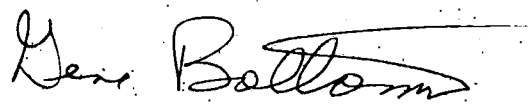
A commitment to replacing the general track includes:

- Providing all students a solid academic core taught to high standards;
- Having high expectations in academic and vocational classes;
- Using instructional methods that connect academic concepts to the real world of work and lifelong learning;
- Revising the high school schedule to provide opportunities for academic and vocational teachers to design lesson plans, projects and other activities that get students to achieve at a higher level;
- Providing extra help to assist students in meeting higher standards;
- Providing a guidance and advising system that involves parents in the process and gives students direction in completing a challenging program of study;
- Enlisting the business community in creating opportunities for students to experience the workplace and to see the need for tougher courses in high school.

[1] SREB defines career-bound students as those who plan to work, enter the military, or attend a two-year community or technical college or a four-year college with an open admission policy.

In the spring of 1996, more than 40,000 students at 555 high schools in 21 states participated in the *HSTW* Assessment of their reading, mathematics and science competencies. The assessment revealed that many of the schools featured in this publication have made significant gains in raising student achievement.

SREB believes that one of the best ways to help career-bound students achieve is to replace the general track with a rigorous program of academic and vocational studies. The high schools represented in this publication have agreed to share their experiences in transforming their schools. I encourage you to contact them for more information as you work to strengthen the performance and potential of all students.



Gene Bottoms
Vice President for Education and Work

High Schools That Work Key Practices

- Setting higher expectations and getting career-bound students to meet them.
- Increasing access to challenging vocational and technical studies, with a major emphasis on using high-level mathematics, science, language arts and problem-solving skills in the context of modern workplace practices and in preparation for continued learning.
- Increasing access to academic studies that teach the essential concepts from the college preparatory curriculum through functional and applied strategies that enable students to see the relationship between course content and future roles they envision for themselves.
- Having students complete a challenging program of study with an upgraded academic core and a major. An upgraded academic core includes at least four years of college preparatory English and three years each of mathematics and science, with at least two years in each area equivalent in content to courses offered in the college preparatory program. The major includes at least four Carnegie units in a career or academic major and two Carnegie units in related technical core courses.
- Providing students access to a structured system of work-based and high-status school-based learning—high school and postsecondary—collaboratively planned by educators, employers and workers and resulting in an industry-recognized credential and employment in a career pathway.
- Having an organizational structure and schedule enabling academic and vocational teachers to have the time to plan and provide integrated instruction aimed at teaching high-status academic and technical content.
- Having each student actively engaged in the learning process.
- Involving each student and his/her parent(s) in a career guidance and individualized advising system aimed at ensuring the completion of an accelerated program of study with a career or academic major.
- Providing a structured system of extra help to enable career-bound students to successfully complete an accelerated program of study that includes high-level academic content and a major.
- Using student assessment and program evaluation data to continuously improve curriculum, instruction, school climate, organization and management to advance student learning.

One Diploma For All: Guaranteeing High Standards

Auburn High School is located in Auburn, Alabama. Although the city still has ties to its agricultural past, many high-tech companies have moved to Auburn in recent years. In 1995-96, the high school enrolled over 1,100 students. The student population is expected to double by the year 2010.

Five years ago, in an effort to improve the academic and vocational preparation of students, Auburn High School officials began to make significant changes in curricula and school organization. To raise standards, administrators removed low-level classes from the school schedule. Next, they raised graduation requirements. Initially, students had to complete four years of English and three years each of mathematics and science to earn a diploma. The state of Alabama has since required another year each of mathematics and science and has mandated four years of social studies. The class of 2000 will have to complete 28 total credits, including 16 in the four primary academic subjects—all taught at a college-preparatory level.

Areas of Endorsement

Students entering Auburn High School in 1996-97 will also complete four courses in an area of endorsement. Instead of awarding a separate diploma for students with an academic or technical major, Auburn offers endorsement in academic and occupational areas. Current areas of endorsement include accounting, advanced academics, athletics, building science, environmental science, family and child development, fine arts, foreign languages, health care science, JROTC, marketing, office technology and technology education. By earning four credits in an academic or occupational area, students gain insight and skills that improve their chances for success at the next step, whether it is college, a career or both.

Integrated Academic Instruction

After eliminating general track English, mathematics and science offerings, educators replaced these low-level courses with classes that enable all students to meet high standards. Many of the new courses involve students in activities that integrate challenging academic and technical studies. For instance, a home economics instructor and a mathematics teacher designed an activity that required students to use concepts from geometry to complete a food preparation project. School officials have supported the development of integrated instructional units by pairing academic and vocational teachers and providing them with a common planning period. Teachers are also encouraged to observe their teammates' classrooms.

All Auburn students take four years of pre-college English. Students do outside reading, prepare and make oral presentations, and write research papers. They often use the school's computer lab for their writing assignments. Teachers also involve students in projects. For example, 10th-graders participated in a mock trial as part of a literature unit. In an integration project, an English and a business teacher worked together to get students to write résumés for the characters in *Canterbury Tales*.

Contact:

Cathy Long
Academic Tech Coordinator
Auburn High School
405 South Dean Road
Auburn, AL 36830
(334) 887-2114

Innovative instructional approaches have helped more students pass the Alabama Basic Skills Exit Exam. Last year, 95 percent of Auburn High School students taking the examination passed the language arts section, as compared to 84 percent in 1994-95.

English teachers are not the only ones responsible for improving students' reading skills. Many staff development activities focus on "reading to learn" in all content areas. In its system of teacher evaluation, the school emphasizes reading as part of the instructional obligation of teachers. All teachers are expected to make challenging reading assignments. As a result, 97 percent of students taking the state exit exam in 1995-96 passed the reading portion—a two percent increase over the previous year.

More Mathematics

Students in the class of 2000 are required to take algebra, geometry and two additional mathematics courses. Instead of traditional Algebra I, students may enroll in sections that teach algebraic concepts through applied instructional methods. Innovative teaching strategies resulted in more students passing the mathematics section of the state exit exam: 92 percent passed in 1994-95; 97 percent in 1995-96. Students may also take two mathematics classes in one year to get additional help or accelerate their studies. One hundred students doubled up on their mathematics courses for the fall 1996 semester.

All students take physical science and biology. An increasing number of 10th-graders are enrolling in the biology/chemistry course taught using applied instructional methods. In 1996-97, 77 students signed up for the class, as opposed to about 14 in each of the two previous years. Most students in the class of 2000 will take college preparatory chemistry and physics to complete their science graduation requirements. Students seeking a health care science endorsement may take anatomy and physiology instead of either chemistry or physics.

The school built a technology center to prepare all students for life in a high-tech society. The facility has more than 200 on-line computers and a networked, ceiling-mounted video projection system. From the center, faculty and students maintain the high school's World Wide Web home page, which contains general information about the school and an electronic version of the student newspaper, the *AHS Free Press*.

In 1996, after a two-year study of block scheduling, the school adopted a combination of the semester block and alternate-day block schedule. Among other benefits, the new schedule will facilitate the planning and implementation of time-intensive integrated learning activities. To prepare for the change, school leaders visited other schools that had adopted block scheduling. School in-services focused on the new system throughout the 1995-96 school year, and four Auburn

Innovative instructional approaches have helped more students pass the Alabama Basic Skills Exit Exam. Last year, 95 percent of Auburn High School students taking the examination passed the language arts section, as compared to 84 percent in 1994-95.

teachers who attended a three-day workshop on block scheduling shared their findings with the faculty. Professors from nearby Auburn University are tracking student achievement; overall school climate; and teacher, student and parent reactions to the new schedule.

Extra Help and Guidance

Faculty members act as advisors for small groups of students.

Students who need assistance in academic areas may attend tutorial programs before and after school. English, mathematics and science teachers are available for consultation between 7 a.m. and 8 a.m. each day and for an hour after school on Monday through Thursday. Transportation home is provided for students staying late to get extra help.

Faculty members act as advisors for small groups of students. Teachers meet with their advisees for 20 minutes each week and for a longer session once a month. Advisors meet with the parents of ninth-graders to give them the students' first high school report card. They also meet with both students and parents at the close of the ninth-grade year to discuss the students' high school program of study.

Faculty advisors encourage students to begin planning for the next step and regularly provide students with information about postsecondary and career possibilities. They also help students prepare for the school's annual college/career night. On that evening, groups from local universities and businesses tell students about the various opportunities and the educational requirements in the schools or fields they represent.

Promise to the Community

School officials promise that their graduates will have workplace competencies.

Auburn has kept the community informed of new school initiatives. In addition to using parent/advisor conferences to report school news, educators announce curricula and schedule changes at public meetings and in newspaper articles. School officials have made a public promise to youth and their employers that if Auburn graduates do not possess the reading, spelling, writing and mathematics competencies necessary to do a job correctly, the school will provide the additional education needed. In turn, parents, business leaders and community members have made a commitment to the efforts of educators by serving on school committees and advisory boards.

Students Make Progress

In the past five years, Auburn students have responded well to new challenges. Despite tougher graduation requirements and a demanding college preparatory curriculum, few have given up and dropped out. In fact, between 1994-95 and 1995-96, Auburn's dropout rate decreased from 3 percent to 2 percent. A dedicated staff and innovative educational practices are keeping students engaged in high-level learning. ♠

Transforming a Technical School into a High Skills Academy

Polytech High School, a comprehensive high school in Woodside, Delaware, was formerly a half-day vocational school. In 1995-96, 76 percent of Polytech's 1,000 students were Caucasian, 19 percent African American, over 2 percent Hispanic, 1 percent Asian and less than 1 percent Native American.

When Polytech High School became a full-day facility in 1991, administrators and faculty redesigned the school to better prepare all students for college, a career or both. To keep students off the general track, Polytech adopted the highest graduation requirements in the state: All Polytech graduates must earn 25.5 credits. Students are required to complete an upgraded academic core consisting of four credits in English and three credits each in mathematics, science and social studies. The high school continues to remove low-level courses. For example, since 1991, Polytech eliminated all mathematics classes below pre-algebra and reduced the number of students enrolled in that course by almost 50 percent.

Academy Orientation

To facilitate greater student learning, officials designed the school around an academy—or school-within-a-school—approach. Ninth-graders enroll in a career exploration academy, and students in grades 10 through 12 join broad occupational academies: technology, industry, business and professional fields and health-related services. Each upper-level academy includes several career majors. The technology academy, for example, includes majors such as aviation, computer assisted design and landscape architecture. Ninth-graders spend three days in each of the 20 career majors, keeping a portfolio on the majors they wish to investigate further. At the close of the year, they select three preferred majors and interview with teachers from the appropriate academies.

Each academy's instructional team is composed of academic and technical teachers who work together on integrated learning activities. Academy students frequently complete large-scale projects requiring them to apply their classroom learning to real-world situations:

- Landscape architecture students reclaimed and designed the grounds around a small pond on campus. Construction trades students built a bridge across the pond.
- Using actual house plans, electronics students drew a wiring scheme, prepared a list of materials, wrote a formal bid, and presented the bid to a home contractor.
- Seniors in the aviation major attended ground school and flight training at Dover Air Force Base.

Block Scheduling

In 1994-95, Polytech adopted block scheduling to provide academy teams with more time to plan and implement integrated learning activities. Under this plan, students attend 85-minute classes during a 90-day semester rather than 45-minute classes for an entire 180-day

Contact:

Dianne Sole
Principal
Polytech High School
P.O. Box 97
Woodside, DE 19980
(302) 697-3255

school year. Because student participation increases during longer activities, block scheduling allows the teacher to leave the lectern and move into the role of "coach." Block scheduling also allows teachers to meet frequently with members of their academy to discuss integrated learning strategies. Along with a regular academy meeting from 7:30 a.m. to 8 a.m. each day, teachers have a 60-minute planning period, which they commonly use for extended sessions with other academy teachers.

Block scheduling allows the teacher to leave the lectern and move into the role of "coach."

Guidance

In 1995-96, the school began the Polytech Advisement Support System (PASS) to better prepare ninth-graders for choosing a career major and to involve parents in the process. PASS brings students and parents together with a school representative to discuss Polytech's academy program and to explore career options. Teachers and administrators alike are assigned eight to 10 students every year. In the first year of the PASS program, 87 percent of parents attended in-school conferences, and many others received at-home visits from teachers who volunteered their time.

Data-Driven Progress

School officials use student assessment data to set instructional priorities. When educators noticed that writing scores were low—particularly on the Delaware Writing Assessment (DWA)—they began several initiatives to improve writing skills. In a writing-across-the-curriculum program, teachers in every subject area assigned and assessed writing projects after being trained to use the grading rubric of the DWA. As a group, teachers practiced using the four-point grading scale in academy team meetings. Students also wrote essays under state test conditions and received feedback from a writing instructor. These efforts have resulted in higher scores on the DWA. Between 1993-94 and 1995-96, students' average scores climbed from 2.2 to 2.8. The percentage of students scoring below the Delaware standard dropped from 62 to 16 percent.

School officials use student assessment data to set instructional priorities.

Students have made progress in other areas as well. Based on Metropolitan Achievement Test measurements, students in the class of 1995 demonstrated an average gain of 2.4 years in reading comprehension and 1.8 years in mathematics competencies compared to national averages. The class of 1998 showed an average increase of 1.7 years in reading and 2.1 years in language arts abilities. Daily attendance rose from 91 percent in 1991-92 to 95 percent in 1995-96. The dropout rate shrank from 7 to 2 percent during the same period. Between 1993 and 1995, the percentage of disciplinary referrals (students receiving disciplinary action at least once) dropped from 54 to 35 percent. ♠

Rural High School Leaves Hard Times Behind

Swansea High School serves a rural community in Swansea, South Carolina. In 1989, over 56 percent of adults in the area had no high school diploma, and the average yearly income was less than $14,000 per individual. Swansea enrolled 600 students in 1995-96.

In 1989, Swansea High School had one of the highest dropout rates in the state, low test scores and few students going on to postsecondary education. Officials from the school and district concluded that they must make sweeping changes to improve student performance. Subsequently, they announced a major restructuring effort at a gathering of parents, teachers and local business leaders. Educators made a commitment to provide all Swansea students with the high-quality education they deserve, but warned the audience that students were going to have to work hard to meet the school's new expectations.

Higher Standards

Today, because more is expected of students, they accomplish more. Whether in college prep, tech prep or combined programs of study, students are encouraged to complete four units each of college preparatory-level English, mathematics and science—core graduation requirements that exceed those of the state. Students must also complete courses in one of Swansea's four career majors—business and information, engineering and industry, arts and humanities, or health and human services.

Instead of compensating for student failure by watering down academic courses—as had long been the practice—Swansea now expects all students to complete a rigorous program of study. The seven levels of English and six levels of mathematics that existed before 1990 are gone. In their place, the school offers either college prep classes or applied academic courses such as Mathematics for the Technologies and Communications for the Workplace that teach academic content in a practical context. Lab activities and other innovative educational practices in mathematics courses have enabled the school to raise standards without increasing the failure rate.

Large-Scale Interdisciplinary Projects

In addition to applied activities in individual classrooms, Swansea educators have involved students in large-scale interdisciplinary projects. For example, students participating in the year-long Project Roots and Fruits used knowledge and abilities gained in English, U.S. History and keyboarding classes to trace and report on their ethnic heritage. After completing research on the history and principles of air travel, students from applied biology/chemistry and art classes designed, built and launched hot air balloons for an integrated project known as "Up, Up and Away."

Contact:

Sandra C. Sarvis
Associate Superintendent
Lexington School District Four
200 N. Lawrence Ave.
P.O. Box 569
Swansea, SC 29160
(803) 568-1021

Students make the connection between classroom activities and the world of work.

Block Scheduling

Integrated instructional projects are organized by groups of instructors from different disciplines during planning sessions held every other day. The extra time is made possible by an alternating day block schedule. Although teachers may not be able to meet with the same colleagues every time, the schedule guarantees that an expert from each subject is always available for consultation. On alternate days, teachers in the same content area meet to discuss issues related to their discipline. Before considering integration strategies, teachers first determine which key concepts and skills students must learn.

Career Majors

Focusing on a career major helps students make the connection between classroom activities and the world of work and provides them with many of the competencies needed in a high-skills job and further studies. Students' occupational course work requires that they research careers in their chosen field and write a paper that is graded by both English and vocational teachers. Twelfth-graders complete a comprehensive project that showcases the occupational skills and knowledge they have gained at Swansea.

To prepare young people to use word processing and database applications, Swansea requires that all students take an introductory computer course. The school has also invested in industrial and technology education labs and computers for two business education labs. It has upgraded automotive technology and building construction equipment to current industry standards. The district funded these initiatives through grants and partnerships with local businesses.

Guidance System

Students' progress at each grade level is monitored by a faculty advisor. Each certified staff member serves as an advisor for 14 to 16 students. After giving incoming ninth-graders and their parents an overview of Swansea's programs of study, advisors help students tailor their course work to educational and career objectives. Students are assigned the same advisor for all four years of high school and are encouraged to seek advice on both academic and personal matters. By easing the transition to high school and helping newcomers set long-term goals, advisors keep students focused on their studies, greatly enhancing their readiness for postsecondary studies and the workplace.

Greater Student Achievement

Swansea's reorganization effort has led to increased student success. According to the *High Schools That Work* Assessment, changes at the high school were followed by significant improvements in

English and mathematics competencies. The number of students passing South Carolina's exit examination has increased significantly since new educational practices have been implemented. The school dropout rate has remained between 1 and 2 percent since 1991-92. The number of students taking the SAT and PSAT has risen steadily since 1990. Postsecondary enrollment has grown from 35 percent in 1989 to between 50 and 60 percent.

Linking Staff Development and Evaluation

To ensure continued revitalization, Swansea officials established a highly flexible staff development system. Of the 44 hours of training teachers must attend each year, 14 are spent at required workshops or in-service sessions, and the remaining 30 are directed toward each teacher's particular interests or perceived weaknesses. Teachers choose staff development sessions that relate to specific goals set in conferences with the school principal. (The principal also sets goals following the meetings.) Each teacher's progress toward targeted areas is recorded in annual teacher evaluations. Linking staff development with teacher assessment focuses teacher training, encourages communication between Swansea teachers and administrators, and improves the quality of classroom instruction.

Teachers choose staff development sessions that relate to specific goals.

Broad Support for School Change

In addition to the contribution made by teachers, Swansea's success could not have occurred without the assistance of parents, business leaders and the *High Schools That Work* network. Parents support the school's efforts by serving on district committees. Business leaders attend curriculum meetings, participate in an annual business/industry/education forum and provide the school with many resources. *HSTW* assessments, technical assistance visits, publications and conferences have enabled Swansea officials to gauge the high school's progress. ♠

Key Practices Guide School Improvement

***Gloucester High School** is a comprehensive high school located in fast-growing Gloucester, Virginia. In 1995-96, 86 percent of the school's 1,795 students were Caucasian, 12 percent African American, and less than one percent each Asian, Hispanic or Native American. Although seafood harvesting, processing and sales remain the major components of Gloucester's economy, retail and service industries are gaining ground. The area population has tripled in the past 30 years.*

Like many high schools located in high-growth areas, Gloucester High School has had to scramble in recent years to accommodate a growing student population. Shortly after a building addition opened in 1993, new students pushed the school enrollment beyond the projected capacity of 1,200. Many Gloucester students already needed help in mathematics, English and science. For example, 51 percent of college preparatory Algebra I students received grades of D or F in 1993-94.

Faculty members and school district officials who had attended a *High Schools That Work* conference offered a solution. They claimed that grades would improve only when the Gloucester staff started expecting more of students. In keeping with *HSTW* recommendations, leaders proposed that the school set high standards and adopt school practices that would enable all students to meet them.

Higher Standards

In 1994, Gloucester administrators and teachers began to reorganize the high school, using the *HSTW* key practices as a guide. School leaders began by eliminating low-level classes. In 1993-94, first-year students were enrolled in six levels of mathematics, three levels of English and three levels of science. Only the upper-tier courses were taught at the college preparatory level: The school has now replaced low-expectation courses with classes that use innovative educational practices to help all students complete a college preparatory curriculum. To graduate, students must complete four years of high-level English and three years each of mathematics and science.

Innovative Academic Instruction

Today, all ninth-graders at Gloucester are enrolled in one of two algebra courses, both taught at the college preparatory level. In technical algebra, high-level mathematics abilities are taught in the context of the workplace. Students complete algebra problems designed by local employers who are members of a technical education advisory council. For example, using information and problems provided by the National Aeronautics and Space Administration, students calculated transmission rates in different lengths of fiber optic cable.

In mastery algebra—a course teachers learned about at their first *HSTW* conference—students must demonstrate proficiency in a series of class units. If they do not make a grade of 70 or higher on an individual unit, they must attend tutorial sessions during a 60-minute extended instructional block. Nine algebra instructors conduct the tutorial sessions. If students cannot complete most of the units by the end of the semester, they receive a grade of incomplete. The grade is replaced with a passing mark when students catch up. In 1995-96, 94 percent of mastery algebra students earned grades of A, B or C at the end of the first semester, as opposed to only 49 percent earning those grades in traditional algebra classes three years earlier.

Contact:
Jean King
Vocational Director
Gloucester County Public Schools
6385 Main Street
Gloucester, VA 23061
(804) 693-5300

All ninth- and 10th-grade English courses are taught on a college preparatory level. After eliminating low-level courses in which students did little reading or writing, Gloucester's English teachers redesigned the ninth- and 10th-grade curricula. Students now become familiar with the writing practices in business and professional environments. Assignments emphasize the development of technical reading and writing skills. Student grades have not dropped under higher standards. Instead, because of innovative instructional strategies, student achievement has improved. In 1994-95, between 43 and 46 percent of students in general English and between 36 and 43 percent of students in English 9 (a higher-level course) received grades of D or F. In 1995-96, with all students enrolled in college preparatory English, the number dropped to 25 percent. In 1996-97, 10th-grade general track courses were removed and other courses were revised to contain the standards established in the ninth grade. The school plans to eliminate general English in grades 11 and 12 between 1997 and 1999 as the freshman class moves toward graduation.

English students develop language skills by completing a senior project.

Twelfth-grade English students develop specialized language skills by completing a senior project. Students research an area of interest and write a paper or prepare a multi-media presentation. Each student selects a faculty member and an individual from the community to judge the project. In a recent project, a student studied the U.S. Postal Service by doing research and keeping a journal of a three-day job-shadowing experience with her father—a mail carrier. Another spent part of her senior year studying the history of quilt-making and stitching a quilt of her own. Researching and reporting on an area of expertise has contributed to dramatic improvements in many 12th-graders' communication skills. In 1995-96, Gloucester students' SAT verbal scores climbed 64 points from the previous year.

Career Majors

The high school requires all students to complete courses in one of the school's five broad career majors. In addition, all students must complete a semester-length keyboarding class. Gloucester's career majors include health and human services, environmental and scientific studies, theoretical and technical studies, global education and communication arts. Each major contains more specific areas; for example, students in theoretical and technical studies focus on either auto mechanics, technical drawing, electronics, engineering technology or a related field.

Many of the high school's career majors give students the opportunity to earn certification in a specific field. For instance, students enrolled in the health and human services cluster can earn accreditation in child development, hospitality, cosmetology or food service. After completing their course work at Gloucester, nursing students can serve a nine-month internship at a local hospital and become licensed practical nurses.

Many career courses involve students in work-based learning activities. Early in their courses, students can participate in job shadowing at local businesses. Many companies also offer student internship and youth apprenticeship programs.

The school works with local businesses and postsecondary institutions to provide academy youth with exceptional work-based learning opportunities.

Career Academies

The Academy of Finance—a part of the global education career major—is a multi-disciplinary school-within-a-school that prepares students for careers in finance and business. Students must apply and be accepted to join the academy. The school works with local businesses and postsecondary institutions to provide academy youth with exceptional work-based learning opportunities. Students gain on-the-job experience in paid internships following the 11th grade and complete dual-enrollment courses during the 12th grade.

School-wide Projects

Gloucester students from all disciplines participate in schoolwide projects. The school's most successful project has been the "Electric Duke," an electric car constructed by students. Students from auto mechanics, electronics, engineering, computer technology, English, graphic arts, finance and other courses worked side-by-side to make the car functional, attractive and cost-effective.

Parent and Community Support

In efforts to get all students to meet high expectations, Gloucester educators enlist the support of parents, employers and the community for all major initiatives. In 1994, school officials made 34 presentations throughout the community. When some mastery algebra students received grades of incomplete on their report cards, the only parents to call the school with questions were those who did not attend meetings about the new grading method.

Staff Development

The school uses the *HSTW* key practices to guide individual and group staff development initiatives. Each year, faculty members meet with a school administrator to set individual goals. During these sessions, teachers make a year-long commitment to one or more key practices. ♠

Mission Accomplished: Helping Every Student Pass the Exit Exam

Woodville High School serves a large rural area, including Woodville, Texas, and surrounding communities. The forestry industry is the leading employer in the area, which is located an hour from any major city. In 1995-96, 62 percent of the high school's 432 students were Caucasian, 34 percent African American, 3 percent Native American and 1 percent Hispanic.

In 1992, educators, parents and community members met at Woodville High School to discuss a problem: Sixty percent of the school's 12th-graders could not pass the Texas exit examination. The group concluded that major changes should take place at the school. Following this decision, school officials and teachers redesigned the curriculum to improve students' academic performance and provide them with a career focus.

Eliminating Low Expectations

To graduate, all students must now complete four years of English, three of mathematics and two of science. To ensure that these courses are taught on a college preparatory level, the school eliminated all low-level academic courses. Students must complete 24 credits, which is more than the current state graduation requirement. Every student must also take courses in one of seven career majors: arts, communication and media; agricultural science; business and marketing; health science; human development and management; personal and protective services; and industrial and engineering.

Implementing a High-Level Academic Curriculum

All ninth-graders take college preparatory algebra in the first semester. Students who need extra assistance or would benefit from a hands-on instructional approach are enrolled in applied mathematics for the second semester. Teachers use materials from the Center for Occupational Research and Development to teach a sequence of specific course objectives. They record the student's mastery of each objective on a diagnostic card that is available to students' subsequent mathematics instructors.

All students are required to take a theory of mathematics course, which teaches them how to use mathematics concepts in everyday situations. In addition to linking mathematics competencies to the workplace, the course includes a technical reading component that develops students' understanding of the scientific and statistical uses of mathematics. As a result of the new ninth-grade mathematics curriculum, 27 10th-graders received academic recognition on the state exam in 1995-96.

All Woodville students enroll in four years of demanding English courses. Although honors sections are available for students planning to major in journalism or English in college, all courses are taught at the college preparatory level. Using state guidelines, English teachers designed much of the research-based curriculum. Students are regularly required to use Woodville's library and computer resources to write research reports. Instead of giving students a single grade for a research project, teachers assess papers in stages, ensuring that young writers stay on task. To give teachers time to read and evaluate papers

Contact:

Thomas Harvey Jr.
Principal
Woodville High School
505 N. Charlton St.
Woodville, TX 75979
(409) 283-3714

thoroughly, school officials keep class sizes small and provide an extra planning period for English teachers.

English students participate in large-scale projects that focus on specific literary works. For example, students studying *The Scarlet Letter* held a mock child custody hearing at the Woodville courthouse. As they attempted to determine which of the fictional characters should be awarded custody of Pearl, the child in the book, students gained a greater understanding of the novel's contemporary implications.

Students receive points for each book they read outside of class.

To improve students' reading skills, English teachers began an accelerated reading program. Students receive points for each book they read outside of class and must earn 10 points per semester. Although students may read what they choose, their points are based on the length and difficulty of the book. When they have completed their reading, students take a computerized test on the material.

All students take physical science in the ninth grade. In this lab-intensive course, students learn basic scientific concepts by participating in hands-on activities inside and outside the classroom. For example, a small-scale Olympics on the school grounds reinforced classroom discussions of gravity, friction and other physical properties. When biology classes study local plant and animal life, the wooded area behind the school becomes a living lab.

Although Woodville students must take two science courses, more than 50 percent choose to take chemistry in their third year. Between 10 and 20 percent take physics in 12th grade. Students in agricultural science can earn one science credit by taking an animal/plant science course team-taught by a biology instructor and an agricultural science teacher.

Ninth-Grade Orientation Program

Students develop learning strategies that serve them in school, work or home settings.

Ninth-graders are required to enroll in a semester-long EAGLE (Encouraging Applications in a Global Learning Environment) course that develops school and workplace readiness. Classes are conducted by four teachers in an instructional center that includes a computer lab. EAGLE students develop learning strategies that will serve them in school, work or home settings. Many assignments require that they use these strategies in practical situations. EAGLE teachers encourage the involvement of other ninth-grade teachers by keeping them up to date on class objectives. As a part of the course, students work with parents and teachers to develop a program of study that is reviewed each year and modified when needed.

The EAGLE program has improved students' academic performance. Since introducing the Eagle course, more students are taking the PSAT and scoring higher than students in previous years. The EAGLE program has had a major impact on student behavior as well.

Before the course was introduced, ninth-graders made up 60 percent of the school's discipline problems. After the first year of the program, the number dropped to 25 percent.

Ensuring Workplace Readiness

Woodville educators redesigned the school's vocational education program to improve students' workplace readiness and motivate them to learn. Although changes in traditional programs like agricultural science met with some resistance, school officials held public forums to convince Woodville residents that revised programs would better serve the interests of youth and the community. Career majors are designed to meet local needs. Because Woodville's economy is largely based on the forestry industry, the new agricultural science major prepares students for occupations in this field. The area's elder-care and child-care facilities supply jobs for students in the human development and management major. Health science students who become certified nurse's aides as a result of their occupational focus can work in regional hospitals.

Parent, Community and Teacher Support

From the start, regular communication between educators and the community has kept school improvement efforts on track. Parents and community members on the school's site-based decision-making committee meet monthly with administrators and teachers to discuss policy and curriculum changes. The EAGLE program is guided by a group of secondary and postsecondary educators, parents and local business leaders. Teachers and counselors schedule meetings with families to help students make course selections.

Greater Student Success

Major school changes and a supportive faculty and community have enabled Woodville High School to reach the goal set in 1992—to improve every student's performance on the Texas high school exit examination. In 1995-96, all 12th-graders passed the test. There are other signs of success as well. The school leads the district in the number of students taking the SAT, and in 1995-96, the number of students scoring 1,000 points or better on the test increased to 29. According to 1994-95 figures, the number of graduates enrolled in postsecondary studies climbed to 50 percent. ♠

Parents and community members meet monthly with administrators and teachers.

Meeting Community Needs with Career Academies

Sebastian River High School, which opened in 1994, is located in coastal Sebastian, Florida. Seventy-nine percent of the school's population is Caucasian, 10 percent Hispanic, 9 percent African American, 1 percent Asian and less than 1 percent Native American.

Long before construction began on Sebastian River High School, the school's future administrators asked parents, business leaders and community representatives to describe the abilities they wanted graduates of the new high school to have. Residents called for young people who could solve problems, collaborate with others, use resources efficiently and, of course, read, write and compute effectively. They did not want the high school to award diplomas to students who had neither the academic background to complete postsecondary studies nor the technical skills to succeed in the workplace.

Higher Standards

Officials designed the high school to prepare all students for the next step, whether it be postsecondary studies, a career or both. School planners set high standards: To receive a diploma, students must complete four units each of English, mathematics and science and three of social studies. In addition to taking core academic classes, students enroll in an academy focusing on communications technology; business; health; environmental science; or marine, auto and culinary studies. To earn Florida occupational certification, students must take from three to six courses in a career major, depending on the field.

Academy Design

The school's academy design creates a practical context for classroom learning and provides the competencies needed for college and the workplace. Academies consist of 125 to 140 students and an instructional team that includes English, mathematics, science, social studies and vocational teachers. Interdisciplinary teams devise strategies for integrating the content of academic and vocational classes. Academic teachers make assignments that lead students to develop occupational skills. For example, English and history students convert their research papers to a newspaper format. Vocational teachers design activities that require students to use academic abilities. For instance, students in medical services classes develop their language skills by researching and writing summaries of health-related news articles.

Academies also use large-scale integrated projects to engage students and develop their competencies.

- Over 100 Sebastian residents brought their vehicles to a free car and boat care clinic where automotive students from the marine, auto and culinary academy performed maintenance checks.
- After forming their own company, students in the communications technology academy designed and produced brochures and T-shirts using an on-site printing press and a silk-screen printer and dryer.

Contact:
Fran Adams
Principal
Sebastian River High School
9001 90th Ave.
Sebastian, FL 32958
(407) 589-9696

- Environmental science students worked with state organizations to perform longitudinal analyses of water from local marshes being converted for recreational use.

In addition to developing task-specific skills, students learn to manage time and resources, solve a range of problems, work in teams and interact with the public in a professional manner. In the middle of the 1995-96 school year, students had the chance to exhibit and explain their projects to 1,500 Sebastian residents at a community-wide event.

Partnering with Business and Industry

To improve their projects, students regularly seek assistance from local businesses. Help with short-term school initiatives often leads to work-based learning projects such as student and teacher job-shadowing programs and student apprenticeships. Business leaders also serve on each academy's advisory board. By keeping academy teams up-to-date on the changing requirements of the workplace, these board members help teachers benchmark occupational courses to the standards of business and industry.

Successful Staff Development

To help all students succeed, school officials made teacher preparedness a priority. During the first year, teachers spent nine days in staff development activities. They also attend staff training sessions during early release periods every Wednesday. From 1996 to 1999, the school will devote all $70,000 from a Florida challenge grant to staff development initiatives. Many in-service sessions and workshops have prepared teachers to work in a high-tech school environment. Other sessions have focused on teamwork, curriculum mapping, cooperative learning, alternative assessment strategies and creative/critical thinking.

Improved Scores

High expectations and an academy organization have improved student achievement. Sebastian River students have scored higher than national and state averages on the verbal portion of the SAT. Mathematics scores on the 1996 High School Competency Test increased 5 percent, and English scores went up 4 percent, both of which are higher than the state average. On the Florida Writes exam, scores increased from 2.9 to 3.5 in the past two years; the percentage of students who met or exceeded the state goal of 3.0 increased from 61 to 85 percent. The school's dropout rate is consistently lower than that of the district or the state. ♠

High expectations and an academy organization have improved student achievement.

Activity-Based Curriculum Promotes Student Learning

Lee County High School in Beattyville, Kentucky, is located in a mountainous area one hour southeast of Lexington. Formerly an oil-producing town, rural Beattyville has seen little economic development since the wells ran dry. The high school's student population of 427 is predominantly Caucasian; fewer than 1 percent of students are African American.

Until recently, some students eased through four years at Lee County High School without having to take high-level courses. With a poor academic background and few occupational skills, youth educated in a general track curriculum were unprepared for college or a career. To reverse this trend and take a first step toward replacing the general track, Lee County officials removed all low-level mathematics, science and English courses. They took the next step by raising graduation requirements. To earn a diploma, all students must now complete four years of English and three years each of mathematics and science—all taught on a pre-college level.

Hands-On Curriculum

After eliminating low-expectation classes, Lee County educators designed hands-on courses to help all students meet stricter graduation requirements. Applied academic courses include activities that make the content of the college preparatory curriculum relevant to students. In applied communication courses, students develop their reading and writing skills by studying and emulating business and professional communications practices. Lab-intensive applied science and mathematics courses connect abstract ideas and theories with practical applications. Individual teachers or teacher teams make student activity the class focus, motivating students and improving their problem-solving skills.

Occupational Preparation

In addition to providing career-bound students with valuable occupational skills, courses in the school's tech prep curriculum facilitate students' academic progress. Along with the required graduation core, tech prep students must take technical courses at both the high school and the area technical center. Students focus on a particular career area such as construction trades or automotive technology. Before selecting a technical major, students determine their occupational skills and interests and meet with parents and a faculty member to discuss the tech prep curriculum. Students engage in work-based learning projects that help them discover or eliminate a career pathway.

Guidance and Extra Help

To help all students meet school standards, each faculty member serves as an academic advisor for a small group of students. Students can consult with their advisor at a specific time each day. Advisors help students develop an Individual Graduation Plan (IGP) and an Integrated Academic Profile (IAP) and expose them to numerous career awareness activities. The IGP helps students organize their course outlines for four years of high school. The IAP is a portfolio showcasing the students' skills and high school achievements. Required for graduation, it includes a profile of best work from multiple subject areas, a résumé, a transcript of course grades and a report on standardized test scores.

Contact:
Sam Watkins
Principal
Lee County High School
Box 97
Beattyville, KY 41311
(606) 464-5005

If students have difficulty with classes, they may attend daily one-hour tutorial sessions after school. Summer school courses are designed to keep all students on track for graduation.

Large-Scale School Projects

Lee County educators involve students in large-scale activities that develop interdisciplinary competencies and motivate them to learn. In the school's most successful large-scale project, over 200 students rebuilt a stock car that had been donated to the school. Automotive technology students took the car apart, business students set up a corporation and kept track of project expenses, and art students designed and produced racing decals. Faculty members contributed by writing the grant that funded the project.

Many teachers develop instruction and assignments based on the school's large-scale projects. For instance, business classes working on the stock car project wrote research papers that related marketing strategies to the racing business. After automotive technology students discovered imported parts in the car, they wrote background reports on countries where the parts were manufactured. Algebra students used mathematics formulas to calculate horsepower, wind drag and gear ratios.

Teachers meet during a common planning period each day to organize team-teaching activities and large-scale projects. By participating in planning sessions, in-services, workshops and conferences, teachers make a commitment to design a high school that serves all students. For that reason, administrators use faculty input as the basis for many school initiatives.

Teachers are committed to designing a high school that serves all students.

Parent and Community Support

The school's reorganization would not be successful without the support of parents and the business community. Along with teachers and students, parents make up Lee County's site-based council, which meets monthly to advise administrators on major school changes. Local business leaders serve on the technical center's craft advisory councils, which meet twice a year.

Increased Student Achievement

Since 1994, the number of students earning a grade of A has increased 9 percent; grades of B have increased 5 percent, and grades of F have decreased 3 percent. The KIRIS (Kentucky Instructional Results Information System) accountability index showed school improvement each year: Between 1992-93 and 1994-95, reading measures increased from 29 to 39; mathematics improved from 22 to 35; and science climbed from 31 to 48. ♠

Encouraging Excellence Through a Dual Diploma

Buford High School, with a population of 400 students, is located northeast of Atlanta in Buford, Georgia. Light manufacturing and service trades are the city's largest employers.

In the early 1990s, Buford High School leaders told a group of parents that they planned to eliminate all low-level English, mathematics and science classes. They were not sure how the group would respond. After cautioning parents that initially some students might have difficulty completing college preparatory-level courses, they described the educational practices that would be implemented to ensure the long-term success of all students. To the gratification of the school staff, parents responded enthusiastically to the proposed changes.

Higher Standards

All courses at Buford High School now contain high standards and rigorous content. To graduate, students must complete four years each of English and social studies and three years each of mathematics and science—all taught at a college-preparatory level. Instead of spending their freshman year rehashing eighth-grade content in Mathematics I and II, all ninth-graders are required to take algebra. Rather than sitting through Practical English or General Science, ninth- and 10th-graders take college prep English and lab-intensive physical science and biology classes.

Career or Academic Majors

Although students are given a choice of a college prep or tech prep diploma, the high school encourages all students to pursue a dual diploma. In the class of 1996, 23 percent were enrolled in college prep; 33 percent were in tech prep; and 44 percent received dual diplomas. Students who wish to earn a tech prep or dual diploma must take four units in a career major. The career areas include business and marketing, engineering and industrial studies, and health and human services.

Occupational Skills and Knowledge

Students complete most of their occupational coursework in grades 11 and 12. These courses give tech prep and dual diploma students access to quality school-based and work-based learning opportunities. Twelfth-graders participate in a dual-enrollment program with an area technical school. In 1996, several students gained hands-on experience in high-tech manufacturing industries in the first summer internship program sponsored by the Southern Regional Education Board and the Ciba Educational Foundation. Students participated in all aspects of manufacturing, from processing raw materials to shipping finished products. Interns completed projects linking mathematics, science, communications and computer technology to the workplace.

Contact:

Elizabeth Puckett
***HSTW* Site Coordinator**
Buford High School
2750 Sawnee Ave.
Buford, GA 30518
(770) 945-6768

In addition to developing students' technology and communications skills, a career major anchors their academic coursework. Although all students take the same college preparatory academic curriculum in grades 9 and 10, 11th- and 12th-grade English, science and mathematics courses are geared toward the college prep or tech prep path; for example, 11th-graders in health and human services may take anatomy and physiology instead of college prep chemistry; tech prep seniors can take Applied Communication rather than a more traditional English course.

Student-Centered Instruction

Buford educators have redesigned the curriculum to enable all students to learn high-level course content. In many classes, abstract concepts are grounded in hands-on classroom activities. For example, in Introduction to Technology, students build a model bridge and measure the effects of various weights. Students frequently work together, developing their ability to solve problems in a group setting. After completing a task, a group may be asked to present its findings before the class.

Educators have redesigned the curriculum to enable all students to learn high-level course content.

The school also involves students in large-scale interdisciplinary projects. In 1995-96, ninth-graders participated in the first class-wide project. For two weeks, teachers focused on issues relating to Central America and Mexico: English students researched and created displays on countries from the region; mathematics classes analyzed the Mayan calendar and discussed statistics concerning the Panama Canal; and physical science classes studied endangered species of the area. Two weeks of activities culminated in a day-long festival. Buford has added a similar project for the 10th grade in 1996-97 and hopes every grade will be involved in such activities in the near future.

Teachers meet daily with members of a small interdisciplinary team. The school eliminated its departmental structure in 1995 to encourage integrated teaching and learning approaches.

Extra Help and Guidance

The Buford staff provides extra assistance for students struggling with the school's high standards. English, mathematics and science students who need additional help can attend after-school tutorial sessions three days a week. Over 400 students have participated in these sessions since they began in 1994.

To ensure that all students are making progress in their programs of study, the guidance counselor assigns each student to an adviser. All staff members serve as advisers to lower the adviser-advisee ratio. After grades are assigned, faculty members rate each student's [illegible]

Individualized folders help advisors provide informed assistance to students in their group.

each advisor had two students who required substantial attention. Individualized folders—which include the student's schedule, personal information, four-year plan, academic tracking sheet and a comment sheet—help advisors provide informed assistance to students in their group. Advisors meet with students after each grading period and as needed.

Increased Student Achievement

Higher standards at Buford High School have led to increased student success. Between 1992 and 1995, students' combined mathematics and verbal SAT scores increased an average of 106 points. Buford students exceeded the *HSTW* goals in every category—reading, mathematics and science—in the 1996 *HSTW* Assessment. Since 1994, the percentage of students failing a course has dropped two percent every year. School attendance has also increased. Between 1992 and 1995, the number of Buford seniors enrolling in a two-year or four-year college or technical school grew from 50 to 74 percent. ♠

Developing Student Initiative with Applied Instruction

Westport Academy High School is the only high school in the Westport, Massachusetts, area. In 1995-96, 485 students were enrolled in this comprehensive school.

For many years, Westport Academy High School allowed some students to take low-level courses that did little to prepare them for college or a career. Students in bottom-tier mathematics courses would spend two years on the same content that college preparatory students completed in one. Career-bound students in English classes rarely completed reading or writing assignments that had relevance beyond the classroom. These students did little because little was expected of them.

Raising Expectations

Wanting all Westport Academy students to receive a quality education, school officials have done away with all low-expectation classes over the past five years. The four years of English and three each of mathematics and science that students must now complete to graduate are all taught on a college preparatory level. In addition, to prepare students for the working world, the school requires students to complete courses in one of the school's four career academies.

School-Within-a-School Organization

The high school's academy orientation provides many students with the focus to meet high standards. The academies, or schools-within-a-school, include business management and information systems; visual and performing arts; health and human sciences /environmental sciences; and arts, letters and sciences. In addition to developing skills they will need in the workplace, academy students learn to connect classroom achievement and career success.

Educators use the first year of high school to orient students to the academy system. Ninth-graders take required courses that introduce them to careers associated with each academy. For example, in ninth-grade visual and performing arts classes, students study television production, music, fine arts, drama and related fields. Before selecting an academy at the close of the year, students research and report on careers that interest them.

Hands-On Academic Curriculum

Westport Academy educators have developed new English, mathematics and science courses primarily for students who would have been in a general-track curriculum. Communications, integrated mathematics and integrated science courses involve students in hands-on activities that demonstrate the practical applications of academic learning. Despite the non-traditional instructional approach, these courses contain the essential content of the college preparatory curriculum.

In communications courses, students develop reading and writing competencies in the context of the modern workplace while gaining a

Contact:
Michael Cosgriff
Principal
Westport Academy High School
19 Main Rd.
Westport, MA 02790
(508) 636-1050

Students use computers to prepare written assignments, perform on-line research and complete multi-media projects.

fundamental understanding of the literary arts. Community business leaders helped educators develop a curriculum that accurately represents the communication needs of business and professional environments and exposes students to American and British literature. In addition to developing technical and business writing skills, communications students study public speaking and frequently test their abilities before the class. They use computers to prepare written assignments, perform on-line research and complete multi-media projects. Students frequently use the school's on-site television production facility for making presentations on literary works being studied in class.

After eliminating low-level classes, administrators altered the school's grading policy to ensure that all students complete high-expectation courses. Communications students earn a passing grade or an incomplete. Incompletes are removed when students demonstrate that they have gained the competencies they formerly lacked. The new policy tells students that failure is not an option at Westport Academy.

Integrated Mathematics and Science

Integrated mathematics combines the content of college prep algebra, geometry, statistics and logic in a three-year sequence that begins in ninth grade. By grounding classroom instruction in problems that interest students, teachers add relevance to the abstractions of high-level mathematics and logic. In the 11th grade, students take mathematics courses that relate to a field such as business and technology or the social sciences.

Integrated science—a fusion of life, earth and physical sciences—is required for all ninth-graders. Instructors involve students in extensive field work to give them first-hand experience with the environmental phenomena studied in class. Many applied instructional activities focus on a small creek that runs behind the school. Students calculate the stream's flow and volume and determine the creek water's chemical composition. They also measure and record changes in the levels of pollutants in the creek. These activities enable students to develop the skills and knowledge needed to complete a large-scale wetlands mapping project. Teachers have been so pleased with ninth-grade field work that they are planning to include instructional activities at the creek in the 10th-grade biology curriculum. In the 11th grade, students take either the applied ChemCom (Chemistry in the Community) course (35 percent in 1995-96) or traditional chemistry (65 percent in 1995-96). Both are taught on a college preparatory level.

Student-Centered Instruction

Changes in teaching strategies and the school schedule have facilitated student-centered learning. Academic and occupational teachers are members of each academy's instructional team. In addition to meeting each day to plan interdisciplinary projects for academy students, teachers often work as teams in the classroom. Once they have explained a project's procedures and objectives, teacher teams move into a consultant role and allow student projects to become the class focus. The introduction of block scheduling in 1995 prompted new instructional methods. Longer class periods and greater teacher availability give students extra time to concentrate on complex projects and create new approaches to their studies. For example, after students in a computerized music course requested that computer animation be included in assignments, they consulted with art instructors and learned to produce multi-media presentations that demonstrated music, computer and art competencies.

Teacher teams move into a consultant role and allow student projects to become the class focus.

Westport Academy educators recognize that some students will need extra assistance in meeting high standards. Two days a week, transportation is provided for students who stay after school for tutorial sessions with teachers. A homework hot-line is planned for the near future.

Parent and Community Support

Westport Academy keeps parents and the community informed about changes at the high school. Parents and students meet with educators to discuss school expectations before the ninth grade and a year later when selecting an academy. School officials use the school's television production facilities to prepare information videos that air on local TV stations. They also report school news in area newspapers. Parents and community representatives serve on the school site council, and business leaders are members of the regional employment board.

Student Achievement

Changes in educational practices at Westport Academy have resulted in increased enthusiasm and learning. Student attendance reached 98 percent in 1995-96, and students seldom miss a class period. Students' average SAT verbal scores have increased 20 points and their mathematics scores 14 points in the past five years. ♠

Big Changes at a Small Midwestern High School

Holcomb High School is a small school of 225 students in rural Holcomb, Kansas. Seventy-six percent of the student population is Caucasian-and 24 percent is Hispanic. Over 30 percent of the students are eligible for free lunches. Many parents work in the beef processing industry—the area's largest employer.

Only a few years ago, some students at Holcomb High School could spend their school years in general track classes such as basic language arts, physical geography and general math. Although the majority of graduates enrolled in a two-year or four-year college, only about 20 percent earned an associate or bachelor's degree. In addition, many students had poor workplace-readiness skills. Because school leaders and teachers were dissatisfied with the low performance of Holcomb graduates, they drafted a plan for change. Guided by the *High Schools That Work* framework, the staff decided to eliminate all low-level classes, increase graduation requirements and expect all students to develop career goals.

School leaders met with parents to plan an upgraded curriculum. Although they feared parents would react negatively to the prospect of potentially lower grades in the beginning, educators found that parents supported changes designed with their children's best interests in mind. If a slightly lower grade point average at first meant greater success for students in the future, parents did not object to raising school standards.

Higher Standards

Today, students must complete 24 credits to earn a diploma, including four in English, five in mathematics and science (a combination of three in one and two in the other), and one-half credit of basic computer skills. All courses are taught at a pre-college level, and college credit can be earned in many 12th-grade dual enrollment classes. Students are able to complete courses in a career major at the high school and the area technical center.

Applied Academic Courses

Every English course at Holcomb High School is designed to improve students' postsecondary readiness. All ninth- and 10th-graders take college preparatory English. During the 11th and 12th grades, students may replace one semester of English with an applied communication course. Students can also earn college credit in a dual-enrollment 12th grade English course.

Holcomb's applied communication course teaches written, verbal and non-verbal material by relating it to the workplace. In addition to an emphasis on technical and business reading and writing, the course helps students develop informed career goals. A major initiative in the class is the "I Search" project, an assignment that requires students to research and write a detailed report on their projected careers. As part of the research, students write letters to someone in an occupation that interests them to request a multi-day job-shadowing experience. Educators reinforce the English curriculum by requiring all students to take a speech class and by making public speaking an important component of many courses.

Contact:

Dean Katt
Principal
Holcomb High School
Box 38
Holcomb, KS 67851
(316) 277-2063

Higher standards in mathematics courses began with requiring all ninth-graders to take Algebra I, Applied Mathematics I or pre-algebra. As in the applied English course, pre-college competencies in both years of applied mathematics are taught in the context of modern business and industry. Teachers alert students to workplace uses of mathematics by arranging for business speakers and video presentations. Assignments frequently require students to apply classroom learning to practical situations.

First-year science students take biology or applied biology/chemistry. Both classes prepare students for postsecondary work. The applied class requires students to participate in activities that bolster their knowledge and skills. For example, by working with the Kansas Fish and Game Department, students determined how many endangered swift foxes lived in the area. In addition to gaining a better understanding of animal behavior, students disciplined themselves to complete complex project objectives and to act in a professional manner around wildlife officials and area farmers.

Assignments require students to apply classroom learning to practical situations.

Beginning with the class of 2000, students will be required to complete five science and math credits. While students who take three years of science are only required to take two years of mathematics (and vice versa), most students take chemistry in the 11th grade and over 40 percent of students also take a third year of mathematics. When the current reorganization of elementary and middle school science and mathematics classes is complete, the school will make three years of both mathematics and science mandatory.

Innovative Grading Policy

To ensure that all students complete high-level course work, the school altered its grading policy. In all classes, the grading scale is now A, B, C and incomplete. Grades of incomplete are only removed when students achieve 70 percent—an average skill level—on all course objectives. The school offers tutorial sessions in all subject areas during the seminar period, a 90-minute block of time available every other day. Summer school classes are designed to help students remove grades of incomplete.

Career Majors

Taking courses in a career major provides students with occupational skills and motivation to learn. After exploring options with a faculty advisor, students select a career major. Advisors meet periodically with students to provide career and educational information and to discuss students' plans beyond high school. Parents attend an orientation and a career planning session before their children enter high school and meet with advisors before students select a career area in the ninth or 10th grade.

The school has upgraded its vocational education facilities to provide up-to-date technology.

The school has upgraded its vocational education facilities to provide students with up-to-date technology. For example, the school replaced its woodshop with a modern technology education lab, made possible by a $100,000 grant from the Sherlock, Kansas, township. Students have access to computers in all vocational and academic courses. In 1995, the Finney County Technical Learning Center opened an Automotive Technology Program of Excellence. This program allows students to pursue studies in automotive technology beyond high school.

Informing the Community

School officials went to great lengths to prepare teachers and parents for policy changes. Staff meetings and training sessions focused on the new grading system. Administrators met with the school board to discuss implementation of the program and held a question-and-answer session with parents. School leaders used the school newsletter, local newspapers and public meetings to explain the policy to the community. They also held an in-school forum with students.

In 1996-97, Holcomb educators adopted block scheduling and continued to implement educational practices aimed at improving student learning. The new grading method guarantees that students will achieve average or above-average grades before moving on to higher-level courses and graduation. The dropout rate has remained low and attendance has stayed high. Although school reorganization efforts are still in the early stages, the school believes acceptance of the program is a sign of future student success. ♠

Supporting Practices for Replacing the General Track

Career or Academic Majors

Requiring a Major

Since joining the *High Schools That Work* network in 1994, **Boyle County High School** in Danville, Kentucky, has redesigned curriculum and reorganized the school to help all students focus on learning. School leaders began by replacing general track courses with a more challenging academic curriculum. In the place of low-level English, mathematics and science classes, the school now offers courses that use applied instructional methods to teach pre-college concepts. To earn a diploma, Boyle County students must complete four credits each in English and mathematics, three each in science and social studies and one in computer technology. The school exceeds state graduation requirements by one credit in both mathematics and science. Students are also required to earn six credits in either an academic or a career major.

In 1995-96, about half of the students opted for an academic major and half for a career major. The school offers academic majors in English, mathematics, chemistry, biology, social studies, art, computer science, a foreign language and instrumental or vocal music. Career majors include agriculture and environmental technology, business and office technology, family and consumer sciences, industrial technology and health careers. After selecting a major, students receive a booklet that describes the required and elective courses in each major area.

School officials strengthened the new program by redesigning the school's guidance system. All teachers now serve as faculty advisors for 15 to 18 students in the same grade. Students meet with their advisors four days a week for guidance activities, club meetings and school-wide events. During guidance activities on Mondays, advisors encourage students to focus on current classroom learning and help them set goals for the future. In March and April, advisors help ninth-graders select the major that best suits their interests and talents. Students who later want to change majors are allowed to do so.

This new program of study was the culmination of 18 months of work by the school faculty. The effort was led by a curriculum committee made up of department heads, a parent and a representative from the local area vocational school. Local businesses were also consulted as the curriculum was developed. Parents and business representatives serving on the school's site-based council and strategic planning committee continue to provide suggestions about the new program and other school initiatives. ♠

Contact:

Tom Brown
Principal
Boyle County High School
1637 Perryville Rd.
Danville, KY 40422
(606) 236-5047

Public Safety Academy

At **Fairdale High School** in Fairdale, Kentucky, students prepare for the job market, postsecondary study or both by enrolling in the school's academy for public safety careers. Academy students can concentrate on law enforcement services, fire science and hazardous materials technology, emergency medical services, radio electronic communications or legal/medical office technologies. The academy provides students with a strong, broad-based academic background integrated with specific technical subjects.

Students of all academic levels are eligible to apply to the program, but those selected must demonstrate a solid academic proficiency and a strong interest in public safety. After students examine different aspects of public safety in the ninth grade, they take an interdisciplinary core curriculum that involves problem solving, critical thinking, advanced technology and interpersonal skills. Public safety personnel serve as mentors, providing job-shadowing opportunities and direct instruction as volunteer and faculty instructors.

Public safety students have numerous internship opportunities with city and county public safety agencies. For example, fire science students train at a city facility, intern with local fire departments and serve as volunteer firefighters; law enforcement students take part in paid and unpaid internships with city and county police departments; and students who are certified emergency medical technicians spend many weekends responding to real-life emergencies as they ride along with city and county EMS teams.

The public safety academy has articulation agreements with regional universities, community colleges and technical schools. Fairdale students can earn college credit from the University of Louisville Department of Justice Administration. They can also earn occupational certification in such areas as emergency medical services, disaster response, cardiopulmonary resuscitation and basic firefighting. ♠

Contact:

Linda Brown
***HSTW* Site Coordinator**
Fairdale High School
1001 Fairdale Road
Fairdale, KY 40118
(502) 485-8188

Health Academy

In 1991, **Farrington High School** in Honolulu, Hawaii, established a health careers academy to help expand the range of educational opportunities available to students and to address a critical community need for health care professionals. The academy involves a partnership of major medical and health care providers, the University of Hawaii, community colleges and representatives of the departments of education, health, and labor and industrial relations.

Students in the three-year, interdisciplinary program complete core academic courses in English, social studies, mathematics and science, and three health occupations courses. They participate in work-related experiences in a broad range of health care professions and then engage in more intensive work-based learning opportunities at either Kaiser-Permanente Moanalua Medical Center or AmeriCorp job sites located in the community.

Health academy students can earn a certificate of achievement by meeting specific program requirements. They develop oral communication skills by making presentations, participating in mock interviews and directing the instruction of other students.

Written work must be free of grammatical errors and must contain meaningful content. No more than six absences are allowed during any two consecutive semesters. Students must pass two standardized examinations and dedicate at least 100 hours to community service.

Students gain valuable knowledge and skills by participating in workplace mentoring experiences and internships. In addition, the students facilitate peer education in schools across the state and participate in career and health fairs in the community.

In the graduating classes of 1994 and 1995, 89 out of the 99 students who began the program saw it through to completion—a 90 percent success rate. Academy students attend class at a substantially higher rate than that of the general school population.

After graduation, most students continue their education. From 1994 to 1996, more than 80 percent of health academy students planned to enter a postsecondary school, compared to only 30 percent of the school population. ♠

Contact:

Lillian Chang
Lead Teacher
Farrington Health Academy
1564 N. King St.
Honolulu, HI 96817
(808) 832-3577

Using Student-Centered Instruction

Writing-to-Learn Enhances School Improvement Efforts

All students at **Staunton River High School** in Moneta, Virginia, enroll in rigorous programs of study that prepare them for academic and career achievement. Many educational practices have been redesigned to enable all students to meet high expectations. In addition to establishing extra-help programs, educators have adopted applied teaching strategies and alternative assessment methods.

One classroom innovation that teachers are using to improve student learning is not new. For 13 years, Staunton River teachers have been using Writing-to-Learn methodologies to develop students into active learners. Teachers direct students to use extemporaneous writing to explore class topics, clarify thinking and enhance memory. This approach may lead to finished writing products, although that is not the primary function. Instead, the method makes use of the cognitive processes involved in writing to increase learning.

School-wide implementation of WTL at Staunton River began with the training of a small group of teachers, who then taught the program to the entire faculty. The WTL approach has been established throughout the high school for several years—in English, mathematics, science, social studies, fine arts and vocational subjects—and continues to be reinforced through regular staff development.

Instead of adding WTL activities on top of regular course content, teachers make writing assignments an essential part of classroom learning. They use writing to begin class, re-focus attention in the middle and review at the end. WTL assignments also serve to reinforce homework (especially reading) and to register students' comments and suggestions. Many teachers have replaced traditional quizzes and worksheets with WTL activities, which can be completed at any point in the class period. Teachers using WTL methods have asked students to

complete some of the following assignments:

- Write a paragraph on a specific technical procedure in a vocational class;
- Record observations on an agriculture field trip;
- Describe the steps in solving a mathematics problem;
- Keep a log of insights and questions about the material they are studying.

Because writing is widely used as a learning tool in all subject areas, many students take composition more seriously and learn to write well. Students also find learning other subjects less frustrating and develop confidence in their ability to absorb difficult material when they focus on questions through short, informal writing assignments. Since Writing-to-Learn became established throughout Staunton River, enrollment in high-level courses beyond core requirements has increased. In addition, more students are continuing their education after high school. ♠

Contact:

Gay Shrum
English Teacher and *HSTW* Site Coordinator
Staunton River High School
One Golden Eagle Drive
Moneta, VA 24121
(540) 297-7151

Vo-Tech Mathematics Program Emphasizes Applied Strategies

Bethlehem Area Vocational-Technical School in Bethlehem, Pennsylvania, serves four high schools in three school districts. Because students in grades 10 and 11 are required to take mathematics at the vo-tech school, mathematics courses make up the largest number of class offerings next to vocational/technical courses. In recent years, many of the mathematics courses have been redesigned to emphasize applied teaching and learning strategies. Innovative instructional practices and assessment methods were put in place to enable all students to gain high-level mathematics competencies.

Mathematics instructors use integrated activities, group work, hands-on labs, class presentations and workplace problems to engage students in learning and to demonstrate the practical applications of abstract concepts. In addition to developing students' calculating abilities, many assignments improve communications skills. For example, many algebra assignments require students to make written observations after completing the activities. Students are also required to use computers to complete class assignments when they have access to the school's technology center.

Interdisciplinary projects also help students develop mathematics abilities. For example, students in mathematics and carpentry classes extended their knowledge of the Pythagorean Theorem by seeing how a triangle is used to square a building. Students' mastery of this concept was assessed by having them write explanations and square the frame of a shed. In another project, mathematics and food service students worked in groups to calculate the ingredients needed for a recipe for different numbers of servings. After preparing the recipe, groups rated the dish on taste, texture and appearance; determined class averages for each rating; and graphed the results.

Students who need additional assistance with their assignments can attend tutorials with a mathematics instructor during school two days a week and after school Monday through Friday. Educators want to add a night tutorial session as well.

Mathematics teachers utilize a variety of assessment strategies. In addition to grading homework, teachers evaluate students' progress by assigning essays, labs, class presentations and tests. At the close of the year,

students participate in week-long assessment activities. Part of the time, they work on projects in groups, just as they have throughout the year. During the evaluation period, students work on individual tasks at the end of each group session.

High-level courses have been in great demand at Bethlehem. In 1993, the school offered only three geometry classes; today, it has nine. After raising expectations in mathematics courses, scores improved on the *High Schools That Work* mathematics assessment. ♠

Contact:

Donald L. Foellner
Principal
Bethlehem Area Vocational-Technical School
3300 Chester Avenue
Bethlehem, PA 18017
(610) 866-8013

Interdisciplinary Projects Promote Integrated Learning

Shortly after joining *High Schools That Work* in 1995, **Owen Valley High School** in Spencer, Indiana, began the process of replacing the general track. School officials eliminated low-level English courses in 1995-96 and plan to do the same in all academic areas by 1997-98. The school is replacing low-expectation classes with a curriculum that emphasizes applied teaching and learning methods.

When the new applied courses are in place, all Owen Valley students will have access to high-level learning. However, because the school is located in a rural area that contains little industry, students have few opportunities for quality work-based learning experiences. In an effort to create workplace learning activities in a school setting, teachers engage students from multiple subject areas in large-scale projects.

In one year-long project, over 200 students produced a children's book that features short stories based on local historical figures and events. Students from a wide variety of disciplines contributed to the publication: English and civics students researched local history; child development students investigated the characteristics of good children's stories; creative writing students wrote stories; and applied English students edited the manuscript. An art class illustrated the book, computer applications students designed the cover and title page, and communications processing students handled the layout and printing. Students in Spanish classes translated the stories; drama students made tapes and presented dramatizations for elementary school students; and manufacturing students designed a package for the book and tapes.

In another project, over 200 students staged an all-school musical. The performance served as a vehicle for students to design and produce sets, scenery, costumes, advertising and programs. One ongoing project involves communications students and advanced speech students in producing a weekly news program for broadcast within the school.

The projects have involved over a dozen teachers from various departments. Weekly planning meetings ensure the success of large-scale initiatives and strengthen teachers' commitment to improving student learning. By uniting students and teachers from business, home economics, art, social studies, English, foreign languages, mathematics and special education, Owen Valley's interdisciplinary projects provide students with exceptional integrated learning experiences and break down traditional barriers between academic and vocational studies. ♠

Contact:

Susan Cull
English Teacher and *HSTW* Site Coordinator
Owen Valley High School
Spencer, IN 47460
(812) 829-2266

Teaching Mathematics Through Integrated Learning

Students in Applied Mathematics at **Randolph County Vocational-Technical School** in Elkins, West Virginia, establish a credit card business while studying a unit on revolving credit. They manage all aspects of the business, including using a computer to design the card and logo, creating an application form, promoting the program, tabulating customer balances, distributing bills and collecting overdue accounts.

The design phase of the integrated project involves teams of students from mathematics and business classes. They hold a contest to select a credit card design. They also examine existing credit card application forms and use word processing software to create an application and agreement that can be signed by students and their parents or guardians.

Small groups of students visit other mathematics classes in the school to explain the credit card process and distribute applications. During these presentations, the students emphasize the advantages of having a card in making purchases at ballgames, school dances and the school store. The students also create posters, announcements and other forms of advertising to promote the program.

Students who apply for the cards are assigned an account number, and their names are entered into a database. The cards are produced, laminated and distributed to the students.

Members of the mathematics class work at events where the credit cards are accepted. They record all transactions on a data sheet which the student "buyers" sign. The students' names and the amounts of their purchases are entered in the database.

Students in business computer class print out monthly transactions, and students in mathematics class use the printouts to calculate current balances and minimum monthly payments for each account. The computer students use the numbers and a spreadsheet program to print monthly statements that are distributed to cardholders.

Payments are made by cash or check in the mathematics teacher's classroom. If payment is not received within three days of the due date, student "bill collectors" call the buyer's parents. A card is canceled if payment is not received within one month of the due date. Any profits from the credit card company are used for operating expenses and donations to school organizations.

The Applied Mathematics students enjoy the credit card project so much—and make so many connections between mathematics and real life—that they are more likely to complete their regular coursework. The project elicits responsibility and high levels of learning from students who might not excel.

Randolph County Vocational-Technical School holds all students to high standards. Since there is no general track, every student takes mathematics courses at the level of algebra or higher. Given the school's emphasis on academic learning, it is not surprising that students who participated in the 1996 *HSTW* Assessment exceeded the *HSTW* goal in mathematics. ♠

Contact:

Kenna Barger
Applied Mathematics Teacher and County *HSTW* Coordinator
Randolph County Vocational-Technical School
200 Kennedy Drive
Elkins, WV 26241
(304) 636-9195

Center Enhances Academy Orientation with Student Projects

Several years ago, the Grand Strand Career Center, a half-day vocational/technical center in Myrtle Beach, South Carolina, was redesigned and renamed the **Academy of Arts, Science and Technology** for students in grades 11 and 12. District officials began the reorganization to reverse several unfavorable trends at GSCC. Because the center was perceived as a place for underachievers, enrollment was declining. Although the vocational curriculum provided students with skills in such occupations as welding, food service and air conditioning, these elective classes did little to broaden students' academic and career knowledge.

Educators have set high goals for the redesigned facility. In a new mission statement adopted in the first year, the academy staff promised that "all graduates will be confident, self-directed learners who exhibit a high level of proficiency in academic, career and teamwork knowledge and skills." To achieve this aim, the academy requires students to major in a choice of entertainment technology, graphic arts, education, preengineering, health and medical science or other careers of the future. Instruction in high-level academic competencies and personal management skills is integrated with occupational coursework and project activities.

Using annual integrated projects to evaluate student progress has proven to be an effective assessment method. By completing research, writing a report and publicly presenting findings, students demonstrate the academic core competencies that are a part of all majors and academic classes. Eleventh-graders complete career-oriented projects, and 12th-graders complete a final exhibition of mastery.

During the third nine-week segment of the school year, all 11th-graders at AAST complete research on a specific career or issue in their major area. Students then write an article that describes their subject matter in detail. Articles are written as if for a journal or magazine oriented toward the specific career. Students then prepare a three- to five-minute class presentation that involves some form of visual media. Presentations are videotaped and made available to students who wish to learn about the specific career area.

Students in the 12th grade earn final examination grades in each of their academic and major classes by completing an exhibition of mastery. Exhibitions focus on a worthy topic, an important issue or a problem in the student's major or the community. Acceptable projects include oral, written, visual and mathematical or technological components. Exhibitions must demonstrate that students have developed knowledge, skills and work habits and can apply skills across academic and technical disciplines. While developing their exhibition proposals and preparing their projects, students consult with major and academic teachers and a project advisor, who is also the senior seminar instructor. As they work on projects, students keep detailed activity logs that document their reading, research, interviews, plans, problems and progress.

Students establish a committee to review their project. They also provide input on the specific grading rubric that will be used by the committee. In April, students have the opportunity to rehearse the oral/visual presentation that will accompany a written product. In May, they appear before their review committee at scheduled times. The 30 minutes given to each student includes time for the exhibition, questions from the committee and students' answers and final remarks.

Past exhibitions of mastery have been product-based, performance-based or research-based. In 1995-96, students completing product-based exhibitions prepared a landscape plan for the academy, created a computer program that designs lineups for a

baseball team, produced a public speaking guide for the academy, and used a desktop publishing program to lay out the AAST literary magazine. Students completing performance-based exhibitions taught middle school students how to use the AutoCAD computer program, implemented a landscaping plan for a local church, and improved safety and environmental awareness in the graphics lab. Students with research-based exhibitions studied the impact of environment on learning, explored the role of a film director, and examined the history and evolution of stage and set design.

The project approach has been an important part of the academy's reorganization effort. By completing annual projects and exhibitions of mastery, students have learned to process information, become independent learners, solve problems, communicate effectively and work with technology—the competencies AAST educators know all students must develop to achieve academic and professional success. ♠

Contact:

Myra Reynolds
Principal
Academy for the Arts, Science and Technology
900 79th Avenue North
Myrtle Beach, SC 29572
(803) 449-3349

Providing Students with Extra Help

Extra Help Programs Provide Support for Challenging Academic Courses

Administrators and teachers at **Maplewood High School** in Nashville, Tennessee, have reorganized the school to better prepare all students for academic and career success. All students are now expected to meet high standards. To help students complete the four credits in English and three each in mathematics and science required for graduation, Maplewood offers an array of extra help programs during the school day, after school and on Saturdays.

Since Maplewood's block schedule allows students to complete up to 10 Carnegie Units in addition to the 22 needed to graduate, the school can offer non-credit, remedial courses for students who need extra assistance in English and mathematics. In 1995-96, approximately 150 students—most of them from grades 9 and 10—completed remedial classes.

Students who need extra help in any subject area may attend after-school tutorial sessions two days a week. Academic and career teachers are available during these sessions. In addition, an after-school mathematics and science assistance program conducted by local college students is offered four days a week. Many of the tutors are education students at Tennessee State University. The high school provides transportation home for students in both programs.

Students who are in danger of failing a course because of excessive absences can petition a school committee for permission to make up classwork during special sessions on Saturdays. For students' appeals to be approved, they and their parents must convince the committee that the absences were unavoidable. If the committee consents, students must be on time for each

Saturday class. They earn make-up credit if their teacher approves their work. In addition to keeping borderline students from dropping out of school, the program develops responsibility by requiring students to initiate each step of the appeals process.

The school also opened a teen parenting center to encourage young mothers to stay in school. To receive child care services, teen-age parents must enroll in parenting courses and pay a portion of the child care fee. Twenty-eight students have graduated from the program and eight have gone on to postsecondary studies.

These additional opportunities to learn have contributed to the school's improved achievement. Student attendance has increased, and the failure rate has dropped. Students' overall success rate on the Tennessee Comprehensive Assessment Program has improved significantly. Between 1994-95 and 1995-96, overall ACT scores increased 0.5 points, and 39 percent more students are taking the test since school changes began. Fifty percent more are taking the SAT. High school success has motivated more students to enroll in postsecondary schools. ♠

Contact:

Patricia Brock
Assistant Principal
Maplewood High School
401 Maplewood Lane
Nashville, TN 37216
(615) 262-6644

Summer Mathematics Program Helps Students Gain High-Level Skills

For several years, **Glencliff Comprehensive High School** in Nashville, Tennessee, has worked to improve student learning by replacing low-level classes with applied academic courses. The school has made great strides, particularly in the mathematics curriculum. In the 1996 *HSTW* Assessment, Glencliff students exceeded the SREB goal in mathematics.

The school offers two units of Mathematics for Technology and other applied classes that use materials from the Center for Occupational Research and Development. However, some students continue to struggle in high-level mathematics courses because they enter high school with inadequate preparation.

In 1996, officials from the Metro-Davidson County school district asked two Glencliff teachers—a mathematics teacher and a computer technology instructor—to conduct an experimental summer program to improve the preparation of ninth-graders from Nashville's Wright Middle School.

The 21 students selected for the seven-week program had all failed eighth grade, and all but two or three had failed mathematics. The students were told that they must pass the summer course to enter Glencliff as ninth-graders. Using the school's computer lab, the teachers determined that many of the students' mathematics skills were at a fourth-grade level.

Students were divided into three teams of seven. Each day, the computer instructor began with two teams and the mathematics instructor with one. After 30- to 45-minute sessions, students moved from the lab to the classroom (and vice versa). Students met in the lab for three sessions each day and also received intense small group instruction.

During mathematics instruction, the teacher involved teams in hands-on activities to spark students' interest in learning mathematical concepts. For example, before being introduced to the formula for determining the area of a cylinder, students cut out paper circles and rectangles to make

Fourth of July stovepipe hats. The instructor used the hats as examples of cylinders. Students found it necessary to work together to complete the task.

In another lesson, before discussing x and y variables and slope, the teacher timed students as they raced around the school track. Students then learned to plot their running speed on a graph and compare the times of each team member. When slope formulas were introduced, students related each abstract variable to a concrete experience. Finally, students learned to use calculators to solve for unknown variables. By moving from specific activities to abstract concepts, the teacher engaged all students in understanding mathematical concepts.

While studying with the computer instructor, the students used computer applications that developed and measured their mathematics skills. Like the applied assignments, programs blended broad-based instruction and other technology-based activities that interested the students.

By the end of the seven-week program, students had made considerable progress. The class gained an average of one grade level in mathematics competency. In the final class, teachers asked students to evaluate the program in a short essay. Although many claimed they had dreaded the course before the seven weeks began, most of the students wished their applied mathematics experience could continue for the remainder of the summer. The teachers will track these students as they take high school mathematics courses and will compare their progress with that of a similar group of students who did not receive extra assistance. ♠

Contact:

Sherry Armistead
Computer Technology Teacher
Glencliff Comprehensive High School
160 Antioch Pike
Nashville, TN 37211
(615) 781-1865

Larry Phillips
Mathematics for Technology Teacher
Page High School
6281 Arno Road
Franklin, TN 37064
(615) 794-6385

Involving Teachers in School Improvement

Committees Direct School Changes

Five years ago, school leaders at **Fort Mill High School** in Fort Mill, South Carolina, gave the responsibility for many crucial school decisions to teachers. Administrators and teachers worked together to design committees that would enable the faculty to discuss and decide on important matters. In addition to the school's existing departmental organization, educators added committees on instruction, curriculum, staff development, student services and student activities (which meet regularly) and committees on staff hiring and budgetary issues (which meet as needed).

The instruction committee explores new strategies for improving classroom learning—including making schedule changes—and the curriculum committee plans schoolwide course offerings. Both committees have helped implement several changes in educational practices in recent years: Teachers now use rubrics and applied and integrated instructional methods; students are involved in work-based learning experi-

ences; and the school has gone to a semester block schedule. With teachers' support, many *High Schools That Work* recommendations have been adopted.

The staff development committee determines teacher needs and sets the agenda for the year's in-service programs and workshops. For instance, when teachers requested a course in advanced applied communication, the committee used a teacher workday to take the faculty to York Technical College to discuss the skills and competencies needed by today's workforce. After-school and summer staff development sessions have focused on cooperative learning techniques, work-based learning, reading to learn, learning styles and educators in industry.

The student services committee discusses student discipline issues, and the student activities committee organizes school events and sets the school calendar. The latter group plans special programs that relate to instructional initiatives. For example, the international festival is a week-long integrated project in which many academic and vocational classes explore different national cultures.

These five committees meet monthly to discuss issues specific to their areas. After reaching consensus on new school initiatives, committees make recommendations that go before the full faculty during monthly staff meetings. School officials act on proposals that receive majority support.

Staff selection committees recommend all new teachers and administrators. Before prospective employees are interviewed, a departmental committee evaluates their applications. If candidates are approved at this stage, they interview with committee members and administrators. Applicants who pass successfully through the process can feel confident that their new colleagues have examined and approved of their professional qualifications and their commitment to improving student achievement.

Teachers on the budget committee determine allocations for instructional supplies and equipment. After departments meet to list their needs, the committee—made up of the department heads—convenes to determine which purchases are a school priority. The recommendations are acted upon by the school improvement council, which is composed of teachers, parents and students. This group only approves expenditures that will facilitate greater student learning.

Teachers and administrators at Fort Mill have created an environment that promotes student learning. Between 1994-95 and 1995-96, the number of students failing one or more courses after the first semester dropped from 28 percent to 17 percent. The number of students receiving grades of A or B rose from 20 percent to 25 percent during the same period. At the same time, enrollment in more demanding academic and vocational courses increased. ♠

Contact:

Marty McGinn
Assistant Principal
Fort Mill High School
118 Munn Road
Fort Mill, SC 29715
(803) 548-1900

Teachers Take a Leading Role in School Renewal

Five years ago, **Wren High School** in Piedmont, South Carolina, decided to improve overall student achievement by replacing the general track. The school began by raising standards and eliminating low-level classes. All Wren students must now complete four years of English, mathematics, science and social studies, with only college preparatory-level classes counting toward the new standard for graduation—a certificate of mastery. In 1995-96, Wren began awarding this enhanced diploma to students who accumulate 28 credits in their selected career major, maintain a 2.5 GPA and complete a year-long senior demonstration project. The school also requires all students to enroll in either a college prep or a tech prep career pathway.

Teachers have played a critical role in making the school reorganization a success. School officials have given teachers the authority to make curricula changes that will enable all students to meet higher standards. To give teachers a chance to focus on classroom issues and share ideas, the "Wrenovation" Committee—a group of faculty members focused on school improvement—organizes a summer retreat each year. The time away from school and family improves communication among staff members and generates many innovative instructional practices.

Teachers and administrators have designed new courses and school projects around integrated teaching and learning strategies. To facilitate interdisciplinary initiatives, teachers observe at least one class outside their department every nine weeks. Every teacher plans and implements an annual integration project with another teacher or team of teachers from different disciplines. Using a chalkboard in the common work area, teachers identify their weekly instructional objectives to keep their colleagues informed about the topics they are covering in class.

Teachers work together to create integrated projects that improve student learning. For instance, the school's media specialist worked with industrial technology classes to produce *Good Morning, Wren*, a televised school news program. The students developed sophisticated communications skills and learned how to use video technology. In another case, a mathematics and a social studies teacher partnered to develop a career focus class. Students in this class gain insight into the connections between the classroom and their career choice by participating in job-shadowing experiences in each of Wren's four career majors.

Teachers, administrators and other professional staff members serve as advisors for groups of 25 students. Advisors meet with students regularly and provide them with information about postsecondary and career opportunities. Advisors work with students to help them develop a four-year education plan.

Many staff development activities bring Wren teachers together with vocational instructors from The Career and Technology Center (TCTC), located over 10 miles from the Wren campus. Using funds from a *High Schools That Work* staff development grant, Wren administrators were able to include TCTC staff members in the school's annual retreat. During the getaway, educators from both sites focused on strategies for integrating academic and vocational instruction. Wren also sponsors a faculty exchange program with TCTC and a local middle school to improve communication among the schools. While at TCTC, Wren teachers become familiar with all vocational and technical subject areas offered at the technology center by actually working with them.

Wren's teachers are committed to improving instruction. In addition to attending *HSTW* staff development conferences, they have traveled to high schools in South Carolina and neighboring states to learn

about successful educational practices. They have also shared their ideas with many visitors to Wren during the past five years.

The efforts of Wren teachers and administrators have resulted in greater student achievement. Scores on South Carolina's Basic Skills Assessment Program have improved steadily since changes began. The number of students passing the state exit examination the first time they are tested has risen to 90 percent. Innovative strategies in academic classes have led to higher SAT scores as well: In 1994-95, students' verbal scores averaged 427 points, compared to 410 the previous year; mathematics scores increased from 465 to 479 during the same period. The number of students entering a two-year or four-year college after graduation has steadily increased. ♠

Contact:

Jim Johnson
Principal
Wren High School
905 Wren School Road
Piedmont, SC 29673
(864) 850-5909

Working with Business to Raise Student Performance

Building a Comprehensive Connection with Business and Industry

Educators at **Carencro High School** in Lafayette, Louisiana, assist students in developing informed career goals through a variety of programs that connect high school with business and industry. Ninth-graders enter Carencro High School with a four-year plan in an occupational cluster. The plan is developed at the eighth-grade level through the Educational Options for Career Goals program. This program assists students in scheduling high school courses based on career interests and aptitudes. In addition, the program utilizes business representatives who discuss the importance of making wise choices in high school which will assist students in reaching their career goals. Once in high school, students take courses in one of four career majors: business and information systems, health and human services, engineering and technology, or arts and humanities.

Students participate in a variety of activities involving them in quality school-based and work-based learning. During the annual Career Exploration for Students Day, employers representing each of the school's career majors answer questions about the educational requirements for specific jobs and the employment outlook and salary expectations in the Lafayette area. Tenth-graders participate in the Free Enterprise Career Investigation Unit. This unit includes research, written and oral presentations about specific careers, and discussions and interviews with business representatives. During the summer, ninth- and 10th-graders participate in the Students in Business Camp. Students spend a week visiting business sites and talking with employers and employees while observing business practices. The Occupational Options Exploration program places 11th- and 12th-graders in the workplace to learn about specific jobs and to perform certain occupational tasks. Students spend four weeks in the workplace and earn one-half unit of elective credit.

Knowing that high levels of communication between teachers and business representatives must exist for occupational programs to be successful, Carencro and Lafayette Parish educators have initiated several programs that bring teachers and business representatives together. During the Work-Based Exploration for Teachers program, held in local businesses on in-service days, teachers visit businesses from each of the four career paths. Business representatives answer educators' questions about workplace needs and provide teachers with a list of resource personnel. Teachers and employers also meet in a work setting during the Educators in Business Camp. For one week during the summer, teachers make business contacts and experience firsthand the demands of the workplace.

Carencro educators constantly seek ways to improve students' occupational skills and knowledge. They continue to refine the tech prep curriculum, expand existing student career exploration programs and strengthen connections with business partners. Carencro graduates are going on to the next step with competencies and insights that will greatly facilitate further learning in a postsecondary setting, a work environment or both. ♠

Contact:

Burnell LeJeune
***HSTW* Site Coordinator**
Lafayette Parish Schools
P.O. Drawer 2158
Lafayette, LA 70502
(318) 236-6891

Job-Shadowing Program Introduces Students to the Workplace

At **Altus High School** in Altus, Oklahoma, students in grades 10 through 12 spend four days each year in the workplace. The comprehensive job-shadowing program was designed to provide students with first-hand information about occupations before they make career decisions; to allow employers to become acquainted with prospective employees; to increase students' awareness of career options; and to strengthen the economy of southwest Oklahoma by developing a more competent workforce.

Before enrolling in the program, students complete an occupational interest inventory and list their preferred career choices. Students are then matched to specific work assignments and paired with workplace mentors. Mentors complete an initial interview with students and then work with school administrators and counselors to develop the students' four-day work schedules. Every two weeks, students spend one day in their assigned occupation. Because job-shadowing days are regular school days, students are counted in attendance at their respective schools and are expected to report on time to their work assignments.

During job-shadowing experiences, students see the relevance of school to the world of work. On the first day in the workplace, students are given an overview of the business operation and learn the basic skill requirements for each task. During the second day, students perform job duties. Mentors describe the personal skills, problem-solving abilities, teamwork and work ethic necessary to perform the job successfully. On day three, mentors inform students of the regulatory and political demands of the job. They discuss such issues as taxes, insurance, potential salary and benefits, time involvement, advancement and personal financial commitment. On the final day, students review their post-graduation plans and career goals, and mentors assess students' potential success in the field.

While in the workplace, students develop portfolios that document their occupational competencies and academic achievements. These portfolios will assist students as they

pursue further education, training and employment. After completing their workplace experience to the satisfaction of mentors and school officials, students receive a skills certificate.

Educators coordinate classroom activities with students' job-shadowing experiences. During each nine-week job-shadowing period, a team of teachers serves as a liaison to workplace mentors. Mentors receive copies of the master class schedule to facilitate consultations with teachers. Consulting teachers are assigned to mentors who are working with students from their classes, and they encourage mentors to visit the classroom. Interaction between mentors and consulting teachers greatly improves the integration of school-based and work-based learning. ♠

Contact:

Jerry Winkle
Principal
Altus High School
400 N. Park Avenue
Altus, OK 73522-0558
(405) 481-2167

Business Leaders and the Community Recognize Students

The **Appalachian Inter-Mountain (AIM) Scholars Program** offered in four counties in northeast Tennessee and southwest Virginia involves business, industry and the community in recognizing high school students who complete a rigorous program of study in preparation for higher education and/or employment. AIM Scholars are students from **Hawkins County, Kingsport City, Scott County** and **Sullivan County** school systems. A large group of employers supports the program by:

- Making presentations to eighth-graders on the importance of taking high-level English, mathematics, science, social studies and technical courses;
- Providing financial or in-kind support;
- Serving on committees to develop and guide the program;
- Participating in recognition ceremonies;
- Asking the question, "Are you an AIM Scholar?" on job applications;
- Publicizing the program to employees;
- Displaying plaques and certificates of support at the work site.

The AIM Scholars Program is managed by a coordinating committee composed of educators and business representatives. A representative of Eastman Chemical Company in Kingsport, Tennessee, facilitated the development of the program.

The percentage of high school graduates earning recognition as AIM Scholars rose from 11 percent the first year (1993-94) to 18 percent in 1994-95 and 25 percent in 1995-96. Most of these students enrolled in college. ♠

Contact:

Paul Montgomery
P.O. Box 511
Eastman Chemical Company
Kingsport, TN 37662
(423) 229-1413

Education and Business Build a High-Tech Partnership

By investing in **Eastern Guilford High School** in Gibsonville, North Carolina, the Dow Corning Corporation is reaping dividends for the whole community. The company decided to become involved in education because it needed employees with good technical, mathematics and verbal skills. The high school, equipped with obsolete computers and an old lab, lacked the resources to produce the type of high-performance worker Dow Corning and other area industries sought. Since forming a partnership in 1995, Dow Corning and Eastern Guilford have worked together to meet each other's needs.

The partners first teamed to build the school's state-of-the-art technology lab. Dow Corning contributed $50,000 of the $130,000 needed for the technology center. The lab includes work stations dedicated to a number of fields such as product design, computer construction, robotics, laser technology and video production. All the equipment is the latest being used by industry. Dow Corning continues to provide training and instruction for teachers and students, many of whom follow tougher school schedules than some college-bound students.

Dow Corning and Eastern Guilford have also designed an apprenticeship program that gives students an opportunity to explore career options while completing an education. Students who participate in the program are assigned to workplace mentors, who give them first-hand experience in process manufacturing, industrial maintenance, accounting and quality assurance. Apprentices are paid for working 15 to 25 hours per week. They are required to have at least a 3.0 GPA and a 95 percent attendance rate during the previous school year, and must have completed or be enrolled in a high-level tech prep course. Ten of the 12 students originally in the program are either completing their high school work or are enrolled in Dow's adult apprenticeship program.

Together, Dow Corning and Eastern Guilford are building an education system that will increase the competitiveness of regional companies and improve the quality of life in the community. Guilford County Schools have used the technology center as the model for labs in eight county high schools. Similar facilities are being planned for all 17 middle schools. The success of the partnership has caught the attention of other local companies, and many area businesses are planning to participate in similar ventures. ♠

Contact:

Jim Clark
Workforce Development Specialist
Eastern Guilford High School
415 Peeden Drive
Gibsonville, NC 27249
(910) 370-2377

Cosmetology Internship and Mentoring Program

A veteran cosmetology instructor at **Bucks County Technical School** in Fairless Hills, Pennsylvania, enlisted the support of the school-to-work coordinator in developing an internship and mentoring program for her students. The program began with 10 students and 10 mentors recruited from among cosmetology professionals who are the instructor's former students.

The impetus for the program was the instructor's concern that many students completed their required hours of cosmetology training but failed to enter the profession. The ones who were successful in a cosmetology career were the ones who had worked in salons after school and on weekends while attending high school. They benefitted from using their skills, observing experienced professionals and connecting what they learned in the classroom with actual procedures in a salon.

Nearly all of the instructor's former students who were contacted about the mentoring program agreed to help. First, they met and introduced themselves to the students and described their employment, their progress in the field and additional education needed for success. Monthly breakfasts and luncheons were held at the technical school to strengthen the relationship between students and professionals. Mentors attended an open house at the school as well as hair shows and educational experiences with the students.

Students spent one day a week in the mentors' salons, where they performed tasks permitted by the state board of cosmetology. They received no credit hours for the internship; the time spent in the salon had to be "over and above" the required hours. Students overcame their fears of actual salon work, developed their confidence and skills and participated in educational opportunities that are not available in the classroom.

After only four months of the program, three of 10 students were employed by their mentors; three more got jobs after the internship began. At graduation, nine of 10 students were employed.

The internship program provided a badly needed transition from school to work. It also resulted in a cadre of employers who support the school's efforts to prepare youth for careers and further education. ♠

Contact:

Lori Salley
Cosmetology Instructor
or
Gina Duxbury
School-to-Work Coordinator
Bucks County Technical School
610 Wistar Road
Fairless Hills, PA 19030-4196
(215) 949-1700

Using Data for School Improvement

New Attitudes and Achievement

Many school improvement efforts at **Fort Pierce Westwood High School** in Fort Pierce, Florida, are guided by data from standardized and local sources, such as test scores, student behavior statistics, surveys and student grades. Instead of looking on data collection as a chore, educators consider identifying students' strengths and weaknesses a preliminary step to improve instructional efforts.

Teachers frequently examine students' successes and failures and make changes in classroom strategies. For example, after Principles of Technology teachers diagnose students' mathematics, reading and science achievement levels, they may use computer-based instruction to help students succeed in the course. Counselors use middle school data from the Stanford Achievement Test to identify students who need extra help. Rather than waiting to give the Florida High School Competency Test in the 11th grade, teachers and counselors target ninth-graders' needs and address them in academic and vocational courses. Teachers interested in new projects are encouraged to pilot their ideas and bring back data to help make school-wide changes for improvement.

Administrators and teachers also use school data to determine many of the objectives and strategies laid out in the school's annual improvement plan. While preparing the 1996-97 plan, educators analyzed some of the following items:

- Scores on the ACT/SAT, High School Competency Test, Readiness for College Test, Grade 10 Assessment Test, Stanford Achievement Test and *High Schools That Work* Assessment;
- Attendance reports by nine-week periods and grade level;
- The first semester failure rate;
- Reports on annual out-of-school suspensions;
- Student dropout rate;
- Enrollment in non-required, high-level courses.

In 1995-96, school leaders conducted a survey of students, parents and staff. One hundred and thirty students, 72 parents and 71 teachers voiced their opinions about a variety of school issues. Most survey participants indicated that the school needed to continue working on student achievement, behavior and attendance, as well as communication between parents and the school. As a result, the school made improving student performance and communication with parents two of seven priority goals for 1996-97.

Using data to guide school change has led to improved student attitudes and achievement. In 1995-96, the dropout rate was 5 percent lower than the previous year, and the attendance rate has remained high at over 88 percent. Eighty-seven percent of 11th-graders taking the HSCT passed the communication section while 77 percent passed the mathematics portion. From 1991-92 to 1995-96, students' ACT scores rose from 18.5 to 21.9. Their composite SAT scores increased from 735 (322 verbal and 413 math) to 1,117 (556 verbal and 561 math) in the same time period. ♠

Contact:

Ellen G. Harden
***HSTW* Site Coordinator**
Fort Pierce Westwood High School
1801 Panther Lane
Fort Pierce, FL 34947
(561) 468-5412

Leadership from the District Office

Superintendent Plays a Key Role

Supt. Bernard Sadusky of **Queen Anne's County**, Maryland, believes school district leaders should make a "real commitment" to achieving higher educational standards. "Public education is at a crossroads and is being challenged," he says. "By setting and meeting higher standards, we demonstrate that we intend to do a good job of preparing our youth."

Sadusky is entering his third year as school superintendent in Queen Anne's County, a semi-rural area with many small businesses. His predecessor set the wheels of school change in motion, and Sadusky has "stayed the course," bringing additional definition and commitment to the effort.

In communicating with diverse groups within the school district—educators, parents and business and community leaders—the district makes sure that "everyone is reading from the same page." It also creates systems to make sure information is transmitted accurately and effectively.

The district is dedicated to moving all students to higher levels of achievement. In doing so, it has eliminated low-level courses and enrolled students in higher-level ones. "The emphasis on ridding the curriculum of non-essential offerings should begin in elementary school; it should not solely be the burden of the high schools," the superintendent said.

The district bases administrative decisions on current data and research, organizes teams to solve problems, and supports site-based management. It invests heavily in release time to allow teachers to engage in staff development, and has adopted a four-period block schedule to provide more time for teacher planning and teamwork.

As an outgrowth of a partnership with the IBM Corporation several years ago, the district has created a computer network and obtained or developed software that gives teachers and administrators access to data on school and student performance.

Links to the many small businesses in the community help Queen Anne's High School place students in internships and teachers in workplace visits. They are arranged through the local chamber of commerce. ♠

Contact:

Bernard J. Sadusky
Superintendent
Queen Anne's County School District
Centreville, MD 21617
(410) 758-2403, Ext. 125

Building Strong Connections with Middle Schools and Postsecondary Schools

Connecting Middle School and High School

Teachers and administrators at **Gordon Central High School** in Calhoun, Georgia, have established a close working relationship with Sonoraville and Ashworth middle schools. As a result, eighth-graders make a smooth transition into rigorous high school programs of study.

The key to an anxiety-free entry into a high school that has replaced the general track is a well-designed program to familiarize eighth-graders and their parents with the school and its recommended programs of study. In January, parents receive a letter from the principal of Gordon Central inviting them and their sons or daughters to a personalized orientation session. These letters contain a self-addressed stamped envelope and a printed form for parents to use in selecting a date and time in early March for a meeting with an advisor. Parents receive a phone call to confirm their appointment. Those who don't respond get a call as well. Every effort is made to schedule the meetings at the parents' convenience. Because parents are encouraged to come to school during the day to observe classes in action, many employers give their employees time off to attend school conferences.

To prepare for orientation, high school counselors, the vocational director, the school-to-work coordinator and academic and vocational teachers visit middle school principals, teachers and students. They plan special sessions for faculty and staff members who serve as advisors and for students who volunteer to conduct on-site tours for middle school visitors.

During orientation, the middle school students and their parents meet with an advisor who helps them plan a four-year program of study. Administrators, media specialists and special education teachers—as well as classroom teachers—serve as advisors. Each advisor is assigned to a small group of students who receive personalized attention from ninth grade through graduation. In planning a program of study leading to work or further education, students choose a tech prep, college prep or dual diploma program.

In the spring of 1996, 92 percent of incoming ninth-graders and one or both of their parents attended orientation. The percentage of parents attending follow-up conferences has also increased. Parents say they feel comfortable approaching advisors and administrators about students' plans. Students report less apprehension as they settle into the high school routine.

As a result of the program, students are more satisfied with the courses they select. They are more focused on education and career goals and are more likely to stick with a program of study throughout high school. Gordon Central's dropout rate for students from grade 9 through grade 12 declined by over eight percent in the past three years. ♠

Contact:

Judy Bailey
Youth Apprenticeship Coordinator
Gordon Central High School
335 Warrior Path
Calhoun, GA 30701
(706) 625-1595

Students Look to the Future in Technology Discovery

Teachers at **Kate Griffin Junior High School** in Meridian, Mississippi, use innovative instructional strategies to motivate ninth-graders in a year-long Technology Discovery course. Students explore technology resources, processes and systems in such fields as fiber optics, biomedicine, computer assisted design and robotics. They also begin making long-term education and career plans. Technology Discovery is one component in Mississippi's three-part Discovery vocational learning program, which also includes Career Discovery in the seventh grade and Computer Discovery in the eighth grade. The ninth-grade course uses strategies such as research, visualization, modeling, design, simulation, prototypes, journals, presentations, demonstrations, problem solving, role playing and testing.

Technology Discovery teachers at Kate Griffin have designed module packets that enable students to exceed the basic objectives of the course. In addition to reinforcing technical vocabulary, problem-solving and critical thinking skills, these packets require students to draw on basic writing and mathematics competencies. As part of the program's ongoing career-exploration activities, students use career inventories and skills assessments to study careers that interest them. Through class projects, students learn to manage time, stay on task and maintain equipment—knowledge that will help them meet the high-tech demands of school and work. For example, using the school's computer lab, students lay out the school newspaper. Every 10 days, a new group takes over the projects; by the end of the year, every student has gained desktop publishing experience. Students are also using television production equipment to produce a video history of the ninth grade, which the entire school will view at the close of the year.

Technology Discovery and the other Mississippi Discovery classes have helped students make the connection between classroom concepts and real-world applications. Teachers say Technology Discovery students fare better on sections of national tests than students who did not have the class. Students are also pursuing a greater variety of career interests than students in the past. Increasing numbers of students at the area vocational center attest to the success of career exploration activities. ♠

Contact:

Virginia Todd and Amy Wright
Technology Discovery Teachers
Kate Griffin Junior High School
2814 Davis Street
Meridian, MS 39301
(601) 484-4073

High Schools and Community Colleges Working Together

In 1994, six school districts and two postsecondary schools in Mississippi County, Arkansas, formed a tech prep consortium in an effort to expand the area's economy by providing local employers with a highly skilled, technically prepared workforce. In 1995, the **Mississippi County Tech Prep Consortium** won the U.S. Department of Education's Dale Parnell Award for designing and implementing an excellent tech prep program. As a result of the successful partnership between high schools and postsecondary schools, students throughout the county gain competencies that will serve them in both postsecondary and career settings.

Two consortium partners, **Osceola High School** and **Mississippi County Community College**, participate in a 2+2 tech prep program. Students in grades 11 and 12

begin a program of study that they complete in their second year at the community college. Students who have successfully completed the secondary component can gain direct admission into associate degree programs in computer information systems, business management, office technology, criminal justice, industrial technology, horticulture, supervision and industrial electronics technology.

To keep students in the tech prep program from having to take courses at MCCC that duplicate their high school work, students can earn college credit in several 12th-grade English, mathematics, computer technology and business classes. Students demonstrate that they have gained competency in these courses by submitting grade transcripts and a skills portfolio. Portfolios document successful acquisition of course competencies using assessment instruments identified by the college, the high school, the Arkansas Department of Vocational Education, and business and industry.

To improve the technical preparedness of high school and college students, MCCC is funding the construction of a vocational lab at the high school that will be used by both institutions. The shared facility promises to increase interaction between teachers from the high school and the community college. Students enrolled in the tech prep program will have the added advantage of working in familiar surroundings for four years.

To ensure that students are planning either a tech prep or a college prep program of study, Osceola educators have designed school initiatives that develop students' career awareness. At the end of the eighth grade, students write a four-year plan that includes career interests. Before entering high school, they learn about scholarships available to students in the tech prep program. Community mentors from different fields visit ninth- and 10th-grade classes. Eleventh-graders go on one-day job-shadowing experiences. In addition to visiting two or three local businesses, 12th-graders take school trips to the area technical school and MCCC.

As a result of the district's involvement with MCCC and the other schools in the consortium, Osceola High students are achieving greater success in school and beyond. Each year since the program began, the number of students taking dual-enrollment classes and the number graduating with tech prep diplomas has increased. Between 1994-95 and 1995-96, the number of articulated credits earned by students increased 21 percent. The number of students meeting the ACT composite score of 19 or above rose from 37.2 percent to 56.8 percent during the same period. Greater success in high school is leading more students to enroll in a two-year or four-year college after graduation. ♠

Contact:

Barbara Hunter
***HSTW* Site Coordinator**
Osceola High School
2800 West Semmes
Osceola, AR 72370
(501) 563-2192

A Consortium of High Schools and a Community College

The **Pasco Hernando Tech Prep Consortium** consists of Hernando County Public Schools, Pasco County Public Schools and Pasco-Hernando Community College. The consortium is located on the west coast of central Florida.

Working together, these schools have increased the percentage of 12th-graders who pass the Florida college placement exams in language skills, reading comprehension and mathematics. This increase means that fewer students entering postsecondary education after graduation from the two high schools are required to take non-college credit courses to bring their academic skills up to par before they can enroll in credit courses.

The consortium took three major actions to improve scores, including:

- Administering the placement tests to 12th-graders instead of high school graduates.
- Developing a technical assistance project to help teachers prepare students for the placement test. Community college faculty analyzed the specific skills needed to pass the test and provided sample questions and problems to mathematics and English teachers at the high schools.
- Conducting an awareness program—including a motivational video—to inform students of the purposes and effects of college placement testing.

Beginning in 1993 for language skills and mathematics and in 1994 for reading comprehension, the scores through 1996 showed a 40 percent increase in the number of students passing the language skills portion of the placement tests; a 32 percent increase in reading comprehension; and a 14 percent increase in mathematics. These increases reflect the improved performance of about 300 students each year. ♠

Contact:

Gayle Brooks
Dean of Career and Technical Programs
Pasco-Hernando Community College
10230 Ridge Road
New Port Richey, FL 34654
(813) 847-2727, Ext. 3264

Video Training Resources for Replacing the General Track

A package of videotapes and print materials, developed for the 1996-97 *High Schools That Work* telecourse on replacing the general track, will be available from SREB by April 1997. The materials are designed to help high school and community teams raise student achievement by replacing the general track with a challenging program of academic and vocational studies. The videos will feature case studies, outstanding school and classroom practices and discussions by experts and practitioners. Facilitator's guides will help local teams use the videos to begin or continue their efforts to raise standards in preparing all students for the workplace and/or postsecondary studies.

Send Descriptions of Your Outstanding Practices

Outstanding Practices is an annual publication of effective strategies to aid *High Schools That Work* sites and other high schools to improve the academic and technical achievement of career-bound students. The report focuses on practices in the classroom and at the administrative level.

SREB invites academic and vocational teachers, counselors and administrators to submit descriptions of your successful practices for getting students to make a greater effort to master complex academic and technical content. Send a written narrative that includes:

- Your strategy;
- Four or five activities for implementing the strategy;
- Four or five benefits or results of the effort. Include empirical data showing that the strategy is effective. Also include anecdotal information demonstrating that students and teachers benefit from the strategy.
- Name, address and phone number of a contact person who can provide additional information.

Send to: Outstanding Practices, *High Schools That Work*, Southern Regional Education Board, 592 Tenth St., NW, Atlanta, Ga 30318-5790.

High Schools That Work

High Schools That Work is the nation's largest and fastest growing effort to help high schools combine challenging academic courses and modern vocational studies in preparing career-bound students for work and further education. *HSTW* was established in 1987 by the Southern Regional Education Board-State Vocational Education Consortium, a partnership of states, school systems and school sites. *HSTW* has grown to include over 650 sites in 21 states. The states are Alabama, Arkansas, Delaware, Florida, Georgia, Hawaii, Indiana, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Mississippi, North Carolina, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia and West Virginia.

High Schools That Work is supported in part by a grant from the DeWitt Wallace-Reader's Digest Fund.

For more information, contact Gene Bottoms, Vice President for Education and Work, Southern Regional Education Board. Phone (404) 875-9211.

Southern Regional Education Board
592 Tenth Street, N.W.
Atlanta, Georgia 30318-5790
Phone (404) 875-9211 • Fax (404) 872-1477

96V56)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement (OERI)
Educational Resources Information Center (ERIC)

NOTICE

REPRODUCTION BASIS

☑ This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☐ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").