



Washoe County School District

Signatures & CTE

INSPIRED and CONNECTED

380 Edison Way Reno, Nevada 89502 775.327.3945 www.washoeschools.net/sacte

Extraordinary Education for Nevada's Future

By Dr. Dana Ryan
Director, Signature Academies & CTE

Our department theme this year, "Inspired and Connected," is all about

people joining together to create, motivate and influence positive change through Signature Academies and Career/Technical Education (CTE). It is an invitation to think big, try something new and find ways to get involved!

I had just such an experience last fall, when I had the privilege of meeting with the TESLA and Panasonic executive team. Washoe County School District's goal was to establish a connection and find out what skills these companies are seeking for their workforce. My job was to share the opportunities that Signature Academies and CTE programs offer that will prepare students for the highly-skilled jobs that the gigafactory needs

While the presentation included the requisite power point and facility tours, the most memorable time was spent in a classroom with students. The execs and local officials got to interact with AACT engineering, medical, education and business students about the human powered vehicle they designed, built and raced in the international NASA Mars Rover competition.

Students and teachers shared how they overcame wheel

design challenges, refined chassis materials over several years, developed safety protocols, and applied high level technical and academic skills to the project. Their most recent vehicle earned NASA's coveted Neil Armstrong Best Design Award and raced the fastest time to earn the 2014 NASA World Championship.

They also talked about the value of academic knowledge in conducting research and developing innovative solutions to the design problems they faced. They reflected on the importance of diverse perspectives and varied skill sets in the creative process. And, they acknowledged that some of the most important lessons learned were about teamwork, communication, and compromise.

TESLA Human Resources Director, Beth Davies, praised the students' efforts. She described TESLA's commitment to innovation and their goal to improve quality of living in the world. "We don't do ordinary," she said. "We do extraordinary. That's what you're doing here."

Across the country, high quality career academies and CTE programs are improving student learning and strengthening communities. Interest and support for programs has grown, as have the connections between classroom and industry. The vision for these programs is

rooted in global competitiveness, comprehensive programs of study, a positive return on program investment and successfully graduating students who are prepared for high-skill, high-demand careers and college.

Ms. Davies' words inspired the people in that classroom, striking a deep chord that continues to resonate. "We ask every potential employee," she said, "what have you done or been involved in that was extraordinary?" She challenged each person – students and adults – to consider how they would answer.

My answer would be Signature Academies and Career/Technical Education.

WCSD Signature Academies and CTE programs provide extraordinary education – integrating technical, academic and employability skills to create high-interest, high-relevance classes. They offer students extraordinary opportunities, such as the Mars rover project. And they provide our community with extraordinary citizens who have both the attitude and skills to improve our quality of life.

I encourage you to get connected to these programs and be inspired! This is extraordinary education for Nevada's future.

WCSD Staff Receive Top Honors

Nevada Assoc. for Career & Technical Education

CTE Administrator of the Year



Dr. Dana Ryan, Director Signature Academies & CTE

"Through a spirit of collaboration, innovation, advocacy and creativity, Dr. Ryan has harnessed the power of CTE personnel across the WCSD and brought Signature Academies and CTE to a higher standard in our district and across the nation."

-Scott Bailey, WCSD Chief Academic Officer

Nevada Assoc. for Career & Technical Education

Outstanding CTE Counselor



Sue Rodriguez, Counselor Reno High School

"Sue is a tireless counselor and a strong advocate for students. Sue has taken on the additional challenge of being the counselor for our Signature Academy and she currently works with about 300 CTE students.

-Linda Feroah, Reno High Assistant Principal

Nevada Assoc. for Career & Technical Education

CTE Teacher of the Year



Jason Klonicke, Teacher Spanish Springs High School

"Mr. Klonicke has a magnificent rapport with his students, peers, parents and community members. His ability to connect with students while teaching them life-long applicable skills prepares them for future medical careers. He works to impact and inspire his students, bringing out the best in each of them."

-Jennifer Ritch, SSSH Assistant Principal

American Culinary Federation

American Academy of Chefs 2014 Inductee



Chef Fred Wright Academy of Arts, Careers & Technology (AACT)

"We are so proud of Chef Wright's induction, especially as the only chef representing the western region. Chef Wright is very involved in the community, sharing his culinary talents with local charity events, as well as being dedicated to the advancement of students in the Culinary Arts."

-Joe Eidem, CEC, ACC, Retired Chef

Education for a 21st Century Nevada Workforce

By Karsten Heise

Director of Technology Commercialization

The Nevada Governor's Office of Economic Development (GOED) is charged with promoting a robust, diversified and prosperous economy in Nevada. This goal includes attracting new businesses to Nevada, stimulating expansion and retention of existing businesses, encouraging entrepreneurial enterprise, and facilitating community development.

GOED's strategy to meet this goal relies heavily on Nevada's ability to provide a highly trained, technically skilled workforce from which companies can recruit. Education – particularly programs like those found in Signature Academies and Career & Technical Education (CTE) – plays a key role.

A new diversified Nevada economy will be shaped by innovation-driven, technology-intensive companies that need workers who can think creatively, solve problems collaboratively, and can adapt and thrive in a challenging environment where change is constant.



Nevada Governor's Office of Economic Development
Empowering Success

In addition, Nevada is witnessing a wave of invention and economic transformation originating from advances in information communication technologies (ICT). This is driven by a concentrated number of core technologies that require individuals to possess and perform skills heavily influenced by an understanding of science, technology, engineering and mathematics (STEM).

While this new digital revolution is empowering individuals as never before, it is also widening the gap between the unskilled and the skilled - the high and the low wage earners.

Narrowing this gap depends on programs like Signature Academies and CTE, where students are exposed to the most current technologies, innovative thinking is encouraged, and trial-and-error processes are rewarded. Graduates from these programs earn industry-recognized certifications, enter into and succeed in postsecondary credential and degree programs, and are prepared to enter the STEM dominated talent pool from which highly competitive companies will recruit.

Signature Academies and CTE offer education for Nevada's future, fostering the entrepreneurial culture that is critical to Nevada's economic success.



Thank you to the following businesses for hosting tours:

Hood-EIC	ElectraTherm
Jensen MetalTech	International Game
Ebara Corporation	Technology(IGT)
Lincoln Electric Cutting Systems	Kimmy Candy
NOW Foods	ACCESS Event Solutions
Micromanipulator	Reno Gazette Journal
Click Bond	KNPB Channel 5



Operation Healthcare Bound

In mid-September, more than 600 students from fifteen elementary, middle and high schools explored high-demand healthcare careers at Operation Healthcare Bound, a partnership of High Sierra Area Health Education Center (AHEC) and WCSD's Signature Academies & CTE Department. Held at UNR's Joe Crowley Student Union, the free event showcased health care fields in Northern Nevada, ranging from pharmacology and emergency medicine to surgery and pediatrics.

Students had an opportunity to interact with local professionals and UNR professors, as well as participate in hands-on demonstrations and mini-labs simulating surgical procedures, first responder skills, and much more. Sidney Ozaki, an 8th grader at Billingshurst Middle School, practiced CPR, conducted a drunk driving test using mouthwash and learned about nursing. "It was very informational and exposed me to specific programs that will help me get into these types of careers."

Opportunities in Nevada healthcare and related fields are expected to increase in the coming years as a result of health reform and an aging population. Said Andrea Gregg, AHEC Executive Director, "These jobs will continue to represent well-paying, recession resistant employment for thousands of young Nevadans poised to enter this field."



Nevada Manufacturing Week

"Technology continues to change manufacturing, resulting in high-skill, highly-paid jobs in Nevada," said Ray Bacon, Executive Director of the Nevada Manufacturing Association. Nearly 400 students from ten WCSD middle and high schools got to experience manufacturing opportunities first-hand during a week of activities in October that celebrated National Manufacturing Day.

Engineering and STEM students visited local business that featured Nevada-made products in fields related to aerospace, food production, fabrication, technology and robotics, as well as attending the "Manufactured in Nevada" conference and exploring TMCC's Applied Technology Center. Students studying business, marketing, and design visited companies that focus on turning innovative ideas into successful products.

AACT engineering student, Christian Oaks, saw how processes he's learning actually get used in manufacturing. "It showed me the jobs available and helped me expand my outlook on manufacturing opportunities." David Zebrowski, Reno High animation and web design student, agreed. "The businesses we visited made the manufacturing of a product more than just a job. They had passion for what they did and made sure every product made would please the customer."



Microsoft Inspires Entrepreneurial Spirit

Annually, Microsoft Reno partners up with high school business and information technology programs to expose students to careers and opportunities in technology fields. This year, students at Sparks, Spanish Springs, Reno, North Valleys, Hug and AACT high schools engaged with Microsoft employees to develop ideas and projects connected to the ImagineCup – Microsoft's global student technology competition. ImagineCup provides students with the opportunity to learn new technological skills and take charge of their future. In some cases, it even provides students with the option to turn their ideas into a business if their ideas hold promise. This program takes the best of the best from all around Washoe County and the competition is extremely fierce.

"Today's rapidly changing society requires educational entities and their communities to work closely together," said Kerri Garcia, Microsoft's Community Relations and Development Manager. "We are committed to making a noticeable impact on our Northern Nevada community by empowering students through education, employment and entrepreneurship opportunities."

As part of the partnership, students visit the Microsoft facility in late fall to preview new technology, gain exposure to careers, and learn about the competition categories – games, innovation, and world citizenship. Following these visits, students work in teams to brainstorm possible ideas and begin working on projects. Through winter and spring, Microsoft experts visit classrooms to preview projects, offer expertise, and provide constructive input. Students work very closely with these experts to get fundamental experience in their area of interest.

The school year ends with a WCSD/Microsoft ImagineCup extravaganza, where all students showcase their projects, learn from guest speakers, and engage with the technology community. The 2015 event is scheduled for May 15.



Opening Windows into the World of Work



Students need exposure to the world of business to understand the many different companies and career possibilities available to them and what the requirements are to compete effectively for those positions. Without these experiences, their window to the world is sometimes too small to make good decisions today for an unimagined future.

For instance, I can clearly recall the heated conversation that I had with my 7th grade math teacher, Mr. Morley. As a competitive figure skater, I was committed to pursuing a career in broadcasting. I was adamant that I would never have a reason to use math and that I really considered it a waste of time. He argued that I could not possibly know what my future career might be and that there was no way to guarantee that math would not prove useful at some point in my future. "I will never pursue any job anywhere in any field where I need to know math," I assured him.

I graduated from college with a liberal arts degree – very little math necessary. I got a part time job with a local utility in a sales/service position and, thirty-two years later, I retired from that company as a Regional Vice President. During that time I had to, among other things, figure out how to:

- Determine my own quota and compensation
- Understand my customers' balance sheets
- Calculate returns on investment
- Formulate a contract and apply discounts
- Forecast and track revenues
- Design and implement a compensation plan for others
- Set targets for a team
- Create and manage a multi-million dollar budget
- Manage the finances of a Board in which I served.

For the record, Mr. Morley...you were right. Today, I would challenge anyone to name one industry where math skills are not required. Or science skills. Or technology skills.

Economic Development Authority of Western Nevada (EDAWN), where I am currently employed, focuses on attracting, expanding and supporting businesses in Aerospace, Aviation and Defense, Back Office and Business Support, Business and Financial Services, Clean Energy, Distribution and Logistics, eCommerce Fulfillment, and Manufacturing. Many students will find careers in one or more of these industries during their lifetime.

Whether employed as an Engineer designing the wing of an unmanned aerial vehicle, a Distribution Manager forecasting order and shipping volumes, an Office Manager balancing the incoming call volumes, a Machine Operator programming work in a manufacturing facility, a Food Service worker calculating the purchasing requirements for the restaurant, or a Chemist formulating the vitamin supplement - skills in science, technology, engineering and math are critical in each and every sector.



To help students and teachers connect the academic and technical skills they learn in school to the competencies required in the workplace, local businesses must open their doors and invite them in. Our children need these industry experiences now to make good educational decisions for a successful future.

By Nancy McCormick, EDAWN Vice President
Retention, Expansion and Workforce Development

Be a Program Partner!

Business-education partnerships are essential for student success. There are many ways to get involved...choose one and get started today!

Sponsor a student work experience/job shadow

Be a professional guest speaker

Host a technical training for teachers

Serve on an advisory committee or work group

Offer facility visits for field trips

Donate specialized equipment or supplies

Mentor students in a career pathway

Support Career/Technical clubs

Advocate for Signature & CTE programs

Get Involved. Make a Difference.

Call 327-3945 TODAY!

NNMC Provides Hospital Experience for Teachers

Northern Nevada Medical Center partnered with WCSD health science teachers to host several professional development opportunities at the hospital, including a full day of job shadowing in different departments.

"Northern Nevada Medical Center is excited to be able to provide the WCSD health science team with real life healthcare experiences that can enhance the education their students receive," said Robin Krueger, NNMC's Director of Physician Relations & Community Development.

Teachers participated in a hospital orientation program that included a focus on privacy laws, safety, and service excellence. They then spent nearly a full day observing procedures and practices in the emergency room, intensive care unit, day surgery and inpatient therapy services.



Partnership of business and industry is essential to setting relevant standards and helping design programs and curricula that truly prepare students for success in the real world.

-National Association of State Directors of CTE consortium (NASDCTEc)

TMCC Professors Support WCSD IT & Media Teachers

In a one-of-a-kind partnership, TMCC professors offer guidance and training to their high school counterparts in areas related to graphic design, video production, animation, web design, drafting techniques and art foundations. The 2-hour mini-sessions, offered several times a month throughout the year, cover specific topics identified by WCSD staff as areas necessary for skill development to improve student outcomes and ensure alignment with Nevada standards.

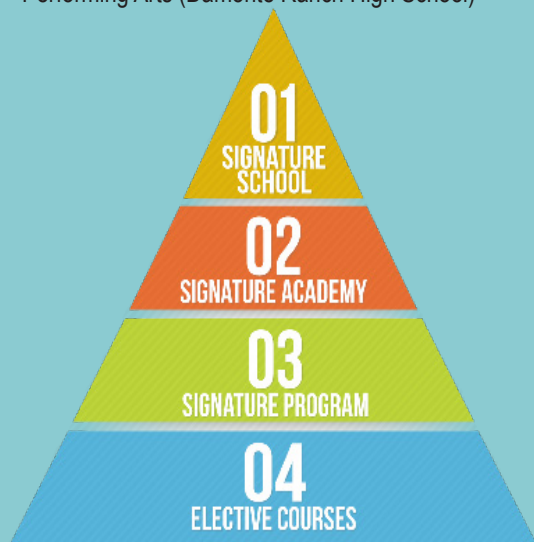
Brian Wells, TMCC Graphic Communications professor responsible for designing the training program, believes the faculty connection between K-12 and postsecondary is critical for student success. "This partnership is something education in Nevada should have been doing all along."



Signature Academy Structure

Signature Academies are specialty programs in Washoe County School District high schools. These programs reflect a stylized curricular approach that is unique to each school and is representative of the school's identity, culture and beliefs. Each 4-year theme program is vetted through a District approval process to ensure that it is consistent with local and national industry demand, integrates academic concepts with technical skill acquisition, and prepares students for college and career success. These programs feature courses of study that provide a rigorous, applied curriculum which includes opportunities to earn college credit and industry certification during high school, gain and practice 21st century skills, and develop connections between school and the real world. Themed Signature Academy programs are offered in the following areas:

- Agricultural Science & Natural Resources (AACT High School, North Valleys High School)
- Business & Marketing (AACT High School)
- Culinary Arts (AACT High School)
- Engineering & Manufacturing (AACT High School, Galena High School, North Valleys High School, Reed High School, Sparks High School, Wooster High School)
- Information Technology, Media & Communications (AACT High School, Reno High School, Spanish Springs High School, Sparks High School)
- Global Studies (McQueen High School)
- Health Sciences (AACT High School, Hug High School, Reed High School, Spanish Springs High School)
- Human Services (AACT High School, Hug High School, Reed High School)
- International Baccalaureate (Wooster High School)
- Performing Arts (Damonte Ranch High School)



- 01** WCSD Signature Schools, AACT High and Wooster High, are comprehensive high schools in which all students are enrolled in one or more Signature Programs through completion.
- 02** Signature Academies are located in 9 WCSD high schools and feature one or more programs in each school in which some of the student population is enrolled through pathway completion.
- 03** Signature Programs are 3- or 4-year curriculum pathways within a Signature Academy which focus on a specific theme that meets a set of articulated goals.
- 04** Electives are courses offered at each high school that engage students in specific topics with the purpose of enrichment.

AACT

Academy of Arts, Careers & Technology (AACT) High School has established itself as one of Washoe County School District's shining gems. AACT, a Signature School, offers seven specialty tracks for career education and boasts a 97% graduation rate.

Operating as a full time comprehensive high school since 2009, AACT serves as an early connection to career fields while simultaneously providing a high quality academic curriculum for college readiness. "It is an environment that lends itself to learning, lends itself to exploring," says Principal Robert Sullivan. "(AACT) lends itself to failure and to success, moving students forward and working with one another as young adults."

Each AACT program features a real-life industry focus that allows students to put skills into practice as they prepare for college and career. Media students, for instance, produce videos for community agencies; business students operate a full-service copy center and student store; and medical students participate in REMSA ride-alongs and job shadows at area medical facilities.

Principal Sullivan says these experiences change how students feel about education and improves their value for learning. "It is an opportunity where they get immediate gratification and it's a feel good. It's done, a product is there which then can ultimately earn them a (college) credit or a certification that will be beneficial to them."

Alongside the technical advantage AACT provides, Sullivan said that over 50% of AACT students challenge themselves with Advanced Placement (AP) and honors courses, many earning WCSD's most prestigious diplomas upon graduation.

AACT students have also established themselves as leaders amongst their state and national peers, winning top honors annually in events such as SkillsUSA, FFA, HOSA, and FBLA. In 2014, AACT's Mars Rover team became World Champions in the NASA Human Powered Rover competition, beating out over 80 high school and college teams from around the world with the best design and fastest time.

AACT's seven career tracks are STEM focused, featuring project-based learning that integrates academic knowledge, technical skills and 21st Century soft skill practice. AACT's goal is to help students explore their possibilities, give students an advantage as they move on to community college or university programs, and position them for career opportunities immediately upon graduation.

"AACT is a great school and a great opportunity," said Delana Pennington, graduate. "You have to be willing to work for it and willing to put in the effort."

Signature Academy & CTE Programs:

- MBA High School of Business
- Communication Arts & Media (Graphic Design, Video Production)
- Culinary & Hospitality, ACF Accredited (Baking & Pastry)
- Education & Training (Early Childhood, Human Development)
- Engineering (Drafting, Welding Technology)
- Medical Careers (Emergency Medical Technician)
- Natural Resources & Animal Science (Greenhouse Management, Vet Science, Floriculture)

Incline High School

It has been said many times that "for a small school, **Incline High School (IHS)** does some amazing things". The fact is, small in size or not, IHS does do amazing things for all students. Incline High School's mission is to graduate students who are college or career ready in the global 21st Century by promoting integrity, humanity and scholarship; developing responsible individuals who contribute to society; and provide a comprehensive education in a rigorous, supportive and safe environment.

Students from Incline High School dream big and achieve big, boasting graduates headed for colleges such as Stanford, Yale, and Cal-Poly; building custom motorcycles; designing innovative parts for national manufacturers; and operating first-rate restaurants. Alongside rigorous academics and a wide variety of leadership opportunities, IHS career and technical education programs help to prepare students for high-tech, high-skill jobs of the future.



Contributing Writer

Sami Edge is a 2012 graduate of McQueen High School and is currently a junior at the University of Oregon studying journalism and international affairs. Someday, she hopes to be a globe trotting investigative reporter. Currently, she's the Editor-in-Chief of The Emerald, an independent newspaper that's been hailed as one of the best in America. She has completed local internships at the Reno News & Review and Sparks Tribune; the Wilamette Weekly, in Portland, Oregon; and will be a news intern at The Seattle Times this summer.



Career & Technical Education Programs:

- Foods and Nutrition
- Welding
- Auto

Wooster High School



Wooster High School (WHS), one of Washoe County School District's two Signature High Schools, has long held itself to a standard of excellence.

Since 1997, WHS has claimed the International Baccalaureate (IB) distinction that sets it apart as one of nearly 4,000 academically superior high schools in 147 countries across the globe. The international program began in Geneva, Switzerland, in the late 60's and requires that students complete an advanced curriculum and volunteer hours for the degree, oriented toward personal and academic excellence. Wooster High School currently has over 500 students pursuing this prestigious academically-oriented degree.

But early this year, Wooster added a new dynamic: the IB Career-related Programme (IBCP), a career and technical education curriculum geared toward providing an IB distinction for more technically-oriented students. "The biggest benefit is that we will make career and technical education a little bit more academically rigorous," program director Luz Verdin said. "(The students) seem very enthusiastic about it."

Currently, the CTE program focuses on two distinct career pathways: energy technology and entrepreneurship with the hopes of adding a third human development pathway in coming years. Students in the IBCP track will complete volunteer service hours and rigorous IB academic classes, much like their diploma oriented peers, but will substitute some of the traditional classroom demands with intense specialization in one of the above fields of study. Currently, the program has eight participating juniors - twice the size of the first IB class in 1997, Verdin says.

Though the program is still in its earliest stages, Verdin and the students are already planning big. Their most immediate goal is to keep expanding a micro-grain growing project into a full-fledged business venture - giving the energy technology students a means to augment their hands on agriculture and harvesting experience, and the business students a chance to develop marketing campaigns and strategies. They've even had an offer from a local casino to possibly buy the micrograins once the venture is underway, Verdin says.

Whatever the future, Verdin says the new program seems to be a success among the students. "What I hear is that they're really liking it," Verdin said. "Students really like the personal and professional skills and approaches to learning."

<p>Signature Academy: International Baccalaureate</p> <ul style="list-style-type: none"> • IB Diploma & Certificate Programme • IB Career-related Programme • IB Middle Years Programme 	<p>Career & Technical Education Programs:</p> <ul style="list-style-type: none"> • Photography • Web Design • Entrepreneurship • Energy Technology • Human Development
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North Valleys High School



North Valleys High School (NVHS) aims to be the hub for agricultural studies in Northern Nevada. Says Coty Gray, Signature Academy coordinator, the NVHS Center for Agricultural Science and Engineering (CASE) will prepares graduates with the academic, interpersonal and technical skills to succeed in an agricultural-focused career or higher education program.

The agricultural focus in the CASE Academy is split into two distinct areas to best serve individual student interests and prepare them for high-demand industry careers. Agricultural Engineering provides focused curriculum in mechanical engineering, drafting, and diesel technology. Natural Resource Management includes study in agricultural science and greenhouse management. Both programs provide a supplemental focus in business development, information technology, and marketing promotion to promote entrepreneurial thinking.

CASE students are encouraged to follow an honors and AP track throughout their four years at North Valley's and all finish out their senior year with the completion of a capstone project characterized by in-the-field work, community service or research/lab experiences.

In addition, students are encouraged to participate in career and business oriented extracurriculars to build leadership, interpersonal and technical skills. Through opportunities to compete with state-wide and national peers in SkillsUSA and FFA, students learn communication and networking - preparing students for college and career demands. "This is what education should be like," said Gray. "We offer so many opportunities that every child can find something that meets their needs and engages them in high level, high rigor education preparing them for education and career after high school."

<p>Signature Academy: Center for Agricultural Science & Engineering (CASE)</p> <ul style="list-style-type: none"> • Agricultural Engineering (Drafting & Design, Diesel Technology, Mechanical Engineering) • Agricultural Resource Management (Greenhouse Management) 	<p>Career & Technical Education Programs:</p> <ul style="list-style-type: none"> • Animation • Drafting & Design • Graphic Design • Web Design • Principles of Business & Marketing
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Agriculture and Natural Resources

Agriculture education provides high school students with technical and specialized knowledge in production agriculture, horticulture, agriculture mechanical engineering technologies, natural resources, as well as other specific agriculture occupations. Agriculture education is a coordinated program of group and instructional activities consisting of classroom instruction, laboratory experiences, and leadership development through FFA and supervised agriculture experiences.

Programs Offered in WCSD:

- Ag Mechanical Engineering Technologies (AgMET)
- Animal Science
- Floriculture Design & Management
- Natural Resources & Wildlife Management
- Ornamental Horticulture & Greenhouse Management
- Veterinary Science



Business and Marketing

Business and Marketing Education spans three career clusters: Business Management and Administration, Finance, and Marketing. The standards and programs of study follow industry validated national standards and program recommendations from MBA Research and Curriculum Center, a consortium of states supporting Business and Marketing education. Students have opportunities to develop leadership through participation in FBLA, DECA and SkillsUSA, prepare for industry certifications and postsecondary education, and participate in project-based learning to prepare for the workplace.

Programs Offered in WCSD:

- Business Management
- Entrepreneurship
- Marketing
- Sports & Entertainment



Information and Media Technology

Information & Media Technologies covers both computer system technologies and visual digital media. A variety of programs are offered to meet today's demand for digital communication and the systems that support it. Skill and leadership development opportunities are offered through project-based classroom learning, internships and job shadows, as well as participation in FBLA and SkillsUSA.



Programs Offered in WCSD:

- Animation
- Computer Science
- Digital Game Development
- Fashion, Textiles and Design
- Graphic Design
- IT Networking, Service and Support
- Photography
- Theatre Technology
- Video Production
- Web Design and Development

Skilled and Technical Sciences



Skilled and Technical Science programs prepare students for STEM careers in high-skill, high-demand occupations as well as postsecondary educational opportunities for certification and degree attainment. Skilled and Technical Science programs provide courses of study to prepare students for industry sectors associated with architecture/construction, manufacturing, engineering, and transportation. Each program offers national certification opportunities, industry experiences for career exploration, and leadership development through participation in SkillsUSA.

Programs Offered in WCSD:

- Aerospace Engineering
- Automotive & Diesel Technology
- Construction Technology
- Drafting and Design
- Energy Technology & Environmental Sustainability
- Furniture & Cabinetmaking
- Manufacturing, Metalworking & Welding Technology

Reno High School

Established in 1879, **Reno High School (RHS)** is Nevada's oldest public school. Reno High is committed to graduating students who possess the intellectual and social skills necessary to thrive at the finest universities, master technical skills needed for high-demand industries, and meet the ever-changing demands of the 21st century. RHS alumni hold leadership positions locally, nationally and internationally in industries ranging from aerospace engineering, medicine, and entrepreneurship to politics, music and theatre. Generations of students have benefited from Reno High's rich traditions, culture of academic excellence, and vision to inspire every student to become a productive citizen.

Reno High School's Signature Academy, Red House Project, focuses on 21st century digital technologies. In an increasingly digital world where professional technical skills are paramount, RHS's Red House Project prepares students to be lifelong learners who graduate college and career ready.

Red House students begin their digital journey in Graphic Design, Web Design, or Computer Aided Design and Drafting (CADD) where they learn basic principles of design, understand how to carry them through to final production, and apply problem-solving skills to the world of multimedia. As students advance through the program, which features access to industry-standard equipment, they are offered a broad range of creative possibilities, as well as basic knowledge of business/marketing and information technology systems.

As juniors/seniors, Red House students collaborate with community partners and participate in various internships and community service projects to gain tangible work experiences, network with industry professionals and develop a commitment to public service.

No matter which path a Red House Project student pursues, they will gain experience in Internet technology, website development, computer graphics, digital media production, and project management.

Signature Academy:

- Red House Project
- Animation
- Web Design
- Graphic Design & Photography
- Video Production

Career & Technical Education Programs:

- Drafting & Design
- Sports Medicine
- IT Essentials
- Marketing



Sparks High School

Sparks High School (SHS) hopes to become a key player in Northern Nevada's thriving manufacturing economy. "We'd like to be the cornerstone of manufacturing training for kids in Northern Nevada," says teacher Barry Varischetti.

The school is set to expand its Information Technology Signature Academy in fall 2015 with a specific focus on advanced manufacturing – a response to the high demand for these skills resulting from the recent TESLA-Panasonic relocation announcement. But this is not manufacturing as you may know it.

"A lot of people have this idea that manufacturing is a low-level job where people go out and get dirty," said Varischetti. "The new manufacturing line is not like that – it's a high skill, high wage job that requires a solid background in math, science and problem-solving." Students in the Sparks program will be taught the ins and outs of modern production manufacturing, learn to diagnose problems dealing with products, logistics, and production design, as well as come up with solutions to fix those problems.

Through hands on experience, partnerships with local businesses, and the opportunity to gain college credit for high school classes, Varischetti hopes to graduate students who have already completed up to a third of their professional industry training by the time they're done with high school – both to prepare them for a secondary education and to help them find jobs that can support them through college.

The first Signature program at SHS, originally limited to Microsoft certifications, will also broaden its focus next year to include all Tech Sciences. This will include training in coding, animation, web design, 2D/3D drafting, and networking, as well as providing a foundation in business and marketing strategies for all students. Already, upperclassmen in the program participate in job shadowing opportunities, participate with the local Microsoft staff, and apply the hands on technology skills they've studied in the classroom.

Varischetti and his colleagues at SHS recognize that information technology is the language of today's world and that student success after high school relies on developing skills that will allow them to compete in this rapidly-changing environment. Principal Kevin Carroll agrees. "Both programs (Tech Science and Manufacturing Technologies) are going to continue to grow in the future."

Signature Academy:

- Information Technology
- Tech Science (Animation, Drafting, Web Design)
- Manufacturing Technologies

Career & Technical Education Programs:

- Family Consumer Science
- Principles of Business & Marketing
- Machine Tool
- Furniture & Cabinetmaking



Galena High School



The **Galena High School (GHS)** STEM Academy Signature program prides itself on “preparing students for the global economy.”

The academy focuses on rigorous training in science, technology, engineering and math. Starting their freshman year, students enroll in a national engineering curriculum called “Project Lead the Way.” Junior year, those students choose a focus in either aerospace or environmental sustainability engineering. They end their senior year with a “capstone course” that requires students to work together to create a solution to a real-world problem, putting their learned engineering and technical skills to practical use.

Last fall, a group of the STEM Academy students entered the Samsung “Solve for Tomorrow” contest to engineer a solution for a community problem. Their task of choice: creating products to help two Galena students who are confined to wheelchairs better navigate the school. Roughly 85 students started working on the project and came up with a number of 3D renderings and prototypes that could improve their classmates day-to-day life. In December, Samsung named Galena as the Nevada Champions and awarded their STEM program \$20,000. Teacher Tom Larsen submitted the final project for consideration in the national competition in mid-February and Galena was chosen as one of the top 15 nationally.

Through a rigorous academic curriculum, training in the engineering process, and hands on community experiences, the Galena STEM Academy positions students for academic and career success. Required honors and AP classes point program participants toward an honors diploma upon graduation and advance the college opportunities they’ll need to pursue a future in any facet of these professional math and science-based industries.

Hunter Johnson attended Incline Middle School. When he heard about the Galena STEM program, he knew he had to be part of the Academy. “I’ve always been interested in engineering at a young age starting with Legos and stuff,” Johnson said. “(STEM) is great, it’s welcoming and I’m just ready to learn.”

<p>Signature Academy: STEM Academy - Project Lead the Way</p> <ul style="list-style-type: none"> • Aeronautical Engineering • Biological Engineering 	<p>Career & Technical Education Programs:</p> <ul style="list-style-type: none"> • Culinary Arts • Human Development • Sports & Entertainment Marketing • Metalworking • Construction Technology • Web Design
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Reed High School



In **Reed High School’s** Enterprise Project, students dream of racing robots and Punkin’ Chunkin’. Students in the Civil & Environmental Engineering program hope to host those competitions in upcoming years to both showcase the skills they’ve learned through the hands-on curriculum of the Signature Academy and to entice more students to join in years to come.

The school’s Signature Academy currently offers two distinct focuses for students with interest in civil/environmental engineering or biomedicine, and will open its doors next fall to a third track focused on Human Development.

“Adding competitions like these will really promote (the Academy) from elementary school and up,” said Tim Conley, Enterprise Program Coordinator. The plan is for high school students to partner with elementary and middle school students to compete, inspiring academic and career goals within the youngsters.

That sort of determination is indicative of the sort of students that Conley says Reed High looks for in its programs. “We look to a particular brand of student, really - students who are motivated, who know what they want to do and are ready for their academic career,” Conley said.

Take, for example, senior Kelsey Hicks who has won the state title for sheet metal fabrication for two years in a row and will be going for her third championship at the Nevada SkillsUSA competition this spring. “We really give them hands on training so that not only can they design something, but they can build it as well,” Conley said.

The Enterprise Project offers a range of courses for Academy students. Energy technology, automotive technology, metal smithing, and 3-dimensional design aim to prepare engineering-minded students with a pathway to college or career directly following high school graduation.

Biomedical students are engage in research and medical experiences that give them the training they’d need to start pharmacology school, EMT training and other medical professions. And the hope for the Human Development pathway is that it will educate students in career fields ranging from childbirth to senior living and care.

The goal is to provide opportunities, Conley says, from college to career. “The whole idea of Signature Academies is to help open that door.”

<p>Signature Academy: Enterprise Project</p> <ul style="list-style-type: none"> • Biomedical Studies • Civil & Environmental Engineering (Automotive, Metalworking, Energy Technology, Drafting) • Human Services 	<p>Career & Technical Education Programs:</p> <ul style="list-style-type: none"> • Culinary Arts • Animation • Computer Science • Entrepreneurship • Graphic and Web Design
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Education, Hospitality and Human Services

These programs fall under the traditional heading of Family and Consumer Sciences, focusing heavily on empowering individuals and families across the life span to manage the challenges of living and working in a diverse, global society. Programs prepare students for life and work by developing knowledge, attitudes, behaviors and skills for becoming citizens who accept responsibility for personal actions and success; manage resources in personal and professional contexts; function effectively as providers and consumers of goods and services; and appreciate human worth through promotion of optimal nutrition and wellness across the life span. Leadership and skill development is encouraged through FCCLA.

Programs Offered in WCSD:

- Baking and Pastry
- Culinary Arts
- Early Childhood Education
- Family and Consumer Sciences
- Foods and Nutrition
- Hospitality and Tourism



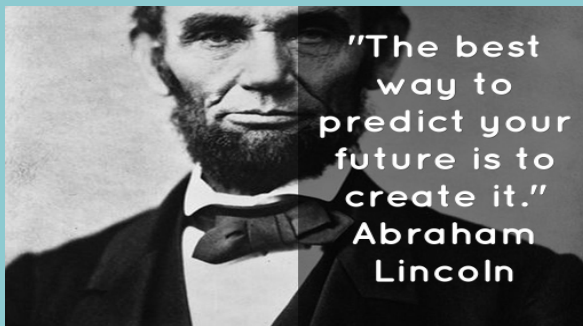
Earning National Certifications

Increasingly, certifications and credentials are becoming a focus of career and technical education (CTE) programs across the country. Federal CTE legislation urges states to use industry-recognized certifications as a strategy to improve instruction and ensure that students have acquired a defined set of skills and knowledge that industry needs and wants.

The term “industry-recognized” means that the certification is sought or accepted by employers within an industry or sector as a preferred or required credential for recruitment, screening, hiring, retention or advancement. Where appropriate, these certifications are endorsed by a nationally recognized trade association or organization that represents a substantial portion of the industry, such as the American Welding Society, CompTia, Farm Bureau or American Culinary Federation.

WCSD and TMCC offer a wide variety of certification and credential opportunities through CTE programming. Be sure to ask your school counselor or CTE teacher what opportunities await your student!

Encore Programs



Encore programs are non-technical Signature Academy programs that provide high interest specialty curriculum promoting critical thinking, creativity, applied problem solving and preparation for college and career across a wide range of industries. These programs are grounded in advanced education and training in areas of performance, international understanding, world politics and economics, diplomacy and responsible citizenship. Leadership opportunities can be found through competitions, such as Thespians, WorldQuest and Mock Trial, as well as mentoring, service learning opportunities and athletics.

Programs Offered in WCSD:

- International Bacalaureate
- Global Studies
- Performing Arts

CTE: A Nevada STEM Strategy

Science, Technology, Engineering and Mathematics (STEM) is attracting attention across the nation. This is not surprising, given that STEM has clear ties to economic development, global competitiveness and innovation.

Career and Technical Education (CTE) programs provide an existing delivery system for STEM, broadening the understanding of STEM beyond just the engineering or traditional science disciplines. While many states strive to operationalize the concept of STEM, Nevada is capitalizing on the high-quality Career and Technical Education (CTE) programs already offered across the state.

Nevada's CTE programs serve a broad range of students, imparting the critical academic, technical and employability skills that prepare students for STEM careers. Available at both the secondary and post-secondary level, these programs help students master core STEM skills and competencies that have value in any career, such as inquiry, problem solving and creativity.

By considering STEM as preparation for a variety of careers, not just limited to traditionally defined "STEM jobs," Nevada can leverage the power of already strong CTE programs to deliver STEM education, positioning Nevada as a national STEM leader.

As a state, we need to lead the way in STEM and CTE. If we continue to grow these programs and continue to grow our skilled workforce, Nevada's future will shine bright.

-Governor Brian Sandoval
(Viewpoint, p. 3, Winter/Spring 2015)

Damonte Ranch High School

Damonte Ranch High School (DRHS) has a focus on flair. Theater, Band, Dance, Business and Computer Science, that is.

Damonte Ranch students may focus in one, or a range of programs, tailored to "Respect, Responsibility & Readiness" - the "Three R's" of Damonte Ranch High School.

Students in the Performing Arts Center (PAC) Signature Academy pursue performing arts training alongside honors and AP core academics. "The skills we teach in the arts extend to college/conservatory programs, but also are a natural contributor to building successful life skills, no matter what (students) decide to do after high school," said drama instructor, Rodney Hearn.

Depending on specific program interest, specialty PAC class offerings include everything from tap dancing and dance choreography, advanced drama studies and theater design & technology to all levels of music theory and practice. Additionally, students have the opportunity to combine performing disciplines to suit their talents and skillsets - clarinet and dance, perhaps? Why not!

But Damonte's flair is not limited only to performing arts. For students whose creative talents venture more toward the technical, there are opportunities to hone skills in digital video production and broadcast, web design, and new for the 2015-16 school year - computer science.

Why computer science? "Computer science is both practical and fantastical, contemporary and futuristic, and also intensely creative," said instructor Ameer Lombardi. "A firm foundation in computational thinking and skilled problem solving will provide our students with the opportunities to create the future rather than just live it."

The opportunities at DRHS don't stop there. Students can also develop their skills in business management pursuits or expand their knowledge of food science, nutrition and culinary arts. According to Lombardi, these options provide students with opportunities to leverage their futures for the best outcome.

For Hearn, the diversity of opportunities make Damonte a great place to learn and work. "Like in every school, we have like-minded students who love being here and love what we do," he said. "It's motivating."



Signature Academy:

Performing Arts Center (PAC)

- Dance
- Theater
- Instrumental Music (Orchestra and Band)
- Choir

Career & Technical Education Programs

- Business Management
- Computer Science
- Foods and Nutrition
- Video Production
- Web Design

Spanish Springs High School

For **Spanish Springs High School (SSHS)** video teacher Mike Bowers, one of the greatest things about teaching in a Signature Academy is the ability to see his students thrive in a hands on environment.

"The kids really love that they don't just sit in the classroom, read textbooks and listen to lectures. We teach them a little bit and then send them out to actually do the work," Bowers said.

Bowers teaches in the Spanish Springs C3 Media program, one of two CTE based Signature Academy pathways at Spanish Springs High School. In his video classes, students compile video packages about campus groups and community members, as well as producing one of the district's only daily live newscasts.

"It's just like being at a regular news station, the kids run the show," Bowers said of the newscast.

New to Spanish Springs this year is the Sports Medicine program, which offers targeted curriculum, community partnerships and hands on experience for students interested in the world of professional athletics or medicine. Program participants study anatomy, chemistry, physiology and biology in the classroom, then apply what they've learned through hands on work with the school's athletic programs and with community partners.

Though the program is only in its first year, Jason Klonicke, SSHS Athletic Director and Sports Medicine teacher, is optimistic for the long-term benefits it will bring the students who are enrolled.

"It provides a solid foundation for students who want to enter a medical field later as a career," Klonicke said about the program. "It provides a rigorous curriculum that is hands-on and practical - preparing them for college level work."



Signature Academies:

Spanish Springs Academy

- C3 Media (Publications, Web & Graphic Design, Photography, Video Production)
- Sports Medicine

Career & Technical Education Programs

- Automotive Technology
- Baking & Culinary Arts
- Computer Science & IT Essentials
- Drafting & Design
- Early Childhood Education
- Fashion, Textiles & Design

Hug High School

The Health Sciences Academy at **Proctor Hug High School (HHS)** orients students to think outside of themselves, exploring opportunities in medicine and human service fields. Says Mallory Foley, a program teacher, "One of the benefits (this program brings) to our school is an awareness that we're about academics and that we strive for achievement."

Freshman members of the medical program start their studies at the University of Nevada, Reno, with a "scrub ceremony," hosted by the Associate Dean of the UNR School of Medicine. It mirrors the "white coat ceremony" that real doctors hold upon graduation from medical school, says Foley, and helps inspire participants for future careers in any realm of healthcare and medicine. That collaboration continues throughout the program.

In the third year of the program, students study Sports Medicine, where they work hands-on with the athletic trainers to understand the ins and outs of performance-based injuries, therapy and preventative health practices.

The Community Health & Education program, which kicked off this year, prepares students to respond to human needs throughout the lifespan, focusing on positive health practices and learning cycles. "The purpose is for students to develop the skills to help individuals and communities function effectively," says Assistant Principal Brad Bodine.

Hug offers students two pathways in this program: Community Health, focusing on health and nutrition through an advanced culinary program, or Community Education, preparing students for education-based human services careers through an understanding of human development. Scheduled for completion in 2016-17, the school will add state-of-the-art facilities for culinary, an on-site preschool and parent education classrooms, and a sports medicine science lab with athletic training functions to provide hands-on and professional collaboration experiences for students.

What's really special about Hug's program, though is the family atmosphere for program participants. Says Foley, "They have people who are interested in them and their grades and wellbeing."



Signature Academies:

Health Sciences Academy

- Medical Careers—Sports Medicine
- Community Health & Human Service (Human Development, Baking & Culinary Arts)

Career & Technical Education Programs

- Baking & Culinary Arts
- Principles of Business & Marketing
- Computer Science & IT Essentials
- Human Development
- Web Design

McQueen High School

McQueen High School is working hard to adapt and grow as the district continues its goal of preparing students for college and career readiness.

With a vast array of curriculums around the district, McQueen High School's contribution to the pool of Signature Academies is Global Studies. The program is designed to prepare students for the 21st century through a classroom introduction to the world of international politics and conflict resolution.

"While a lot of the programs around the district are career oriented, ours is a lot more college oriented, setting the students up for life and careers after high school," said Lindsey Well, Dean of Students responsible for McQueen's Signature Academy. "The program is extremely rigorous, with students taking up to 5 AP classes as seniors."

Within this program, students study two foreign languages for four years which leads to opportunities to host a student from another country and/or participate in a brief study abroad experience. Through a guest lecture series, students are educated on international policy as well as life and culture of other countries through the focus language of study.

"The idea of learning multiple world languages is a basic core value of many education systems around the world," said Chris Case, Global Studies program coordinator. "What we are trying to create - and I think what we are creating - is the ability for a student attending McQueen and the Global Studies program to have a global experience that will branch out way beyond the Truckee Meadows."

McQueen students have had recent success participating in local and statewide competitions including a first place win in the 2014 WorldQuest high school knowledge competition and two first place finishes in the annual Global Nevada Essay contest.

As an additional leg of the Global Studies program, McQueen will add a Fine Arts focus in 2015-16. Students choosing this pathway will explore international culture through study of a traditional foreign language, as well as through the languages of music and art.



Signature Academies:

Global Studies Academy

- World Language
- Diplomacy
- Economics, & International Politics
- **Pilot Program: Fine Arts**

Career & Technical Education Programs

- Culinary Arts
- Human Development
- IT Essentials
- Drafting & Metalworking

Health Sciences

Health Sciences programs prepare students to keep people healthy and provide care for those who are not. It provides experiences and knowledge that allow students to prepare for careers and postsecondary study in diverse health fields, as well as a range of industry environments from hospitals and medical offices to athletic facilities and laboratories. Leadership and skill development opportunities are provided through job shadows and co-curricular organizations, such as HOSA.

Program Offered in WCSD:

- Biomedical
- Emergency Medical Technician
- Sports Medicine



Celebrating CTE Innovators

February marks the annual celebration of CTE educators, administrators, career and guidance counselors and students! WCSD classrooms are abuzz with innovative work, leading students to graduation, as well as college and career opportunities, at an ever-increasing rate.

CTE Month is also a time to recognize the support of community members, as well as applaud our legislators for embracing the value that CTE provides in the economic health of our nation. For 2015, WCSD Signature Academies & CTE would like to thank our monthly professional development keynote speakers:

- **Pedro Martinez**
Former WCSD Superintendent
- **Ray Bacon**
Nevada Manufacturers Association
- **Doug Erwin**
Economic Development Authority (EDAWN)
- **Michonne Ascuaga**
Washoe Education Foundation (WEF)
- **Frank Woodbeck**
Nevada System of Higher Education (NSHE)
- **Dr. Maria Sheehan**
Truckee Meadows Community College (TMCC)
- **Traci Davis**
WCSD Interim Superintendent

For more information about CTE and how you can help, visit www.acteonline.org



CTE Opportunities in Charter Schools

Charter schools are unique, autonomous public schools that have the freedom to be more innovative while still maintaining accountability for advancing student achievement. In Nevada, charter schools operate under a charter, or contract, issued by a public entity such as a local school district or State Board of Education. Washoe County School District sponsors eight (8) charter schools. These unique public schools are open to all children, do not charge tuition and do not have special entrance requirements.



ACE High School is a premier career and technical public high school in Reno, Nevada.

The first Academy in the area that opened in 2002 as a full-time institution dedicated to educating students for careers in:

Building Trades, Computer Aided Drafting and Design (architectural and technical), Diesel Technology, Energy Technologies with a focus on renewable energy, Machining Technology

WE ARE a high school with proven results and student success.

We create meaningful futures and we are a free, public high school where students earn free college credit.

WE BELIEVE in the value of hard work, provide personalized learning,

have excellent teachers and experts in their career fields and our students attain high skills academically and technically.

ACE students have been National SkillsUSA Gold Medal winners and frequently score in the top 10 of the nation!

WE AREN'T for everyone; serious, career-minded students should apply.

If you are serious about a career in the following areas:

Construction, Plumbing, Carpentry, Project Management, Electrical, Supervision, Architecture, Civil Engineering, Mechanical Engineering, Manufacturing, CADD Operations, Residential Planning, Diesel Technology, Automotive Service, Machining, Manufacturing, Renewable Energy, Energy Technology, Solar Power, Wind Generation, and more, then ACE High School may be for you.

No other high school in our community can provide you with the specific career training in these areas at a level where you can earn college credit and certifications, for free. No gimmicks, just hard work!

Make your high school WORK for you – get something more than just a grade and a diploma – learn a career!

To learn more, go to www.AceHighSchool.org or Like us on Facebook at www.facebook.com/acehighschool



ICDA Charter High School

We teach the power of knowledge and the power of hope

ICDA, Nevada's first charter school, provides a unique and flexible educational opportunity for Northern Nevada students.

ICDA's courses offer small class sizes, allowing for personalized instruction for success.

- Courses are offered on a four-course block schedule to encourage a deeper understanding of the subject matter and allowing students to earn up to 8 credits per year.
- Flexible course schedules allow students to participate in traditional classrooms, distance education classes, or a personalized schedule to meet their needs.

ICDA's environment encourages students to believe in themselves and reach their goals.

ICDA provides innovative education through a focus on:
Integrity • Character • Dedication • Achievement

ICDA's students learn leadership skills for life success and discover their own talents through exploration of academics, the arts and community service.

- Performing arts curriculum in a variety of drama and dance styles, showcased in performance venues.
- Visual arts emphasis on art theory, history and visual expression through a variety of media, such as drawing, painting, sculpting, calligraphy, & more.
- Digital media arts focuses on photography and digital video production featuring student produced work.
- Career and technical education classes also offered in computer technologies.

To learn more about ICDA Charter High School, visit www.icdachs.com or call 857-1544

CTSOs

Building Leadership Skills for 21st Century Success

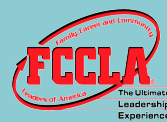
In CTE programs, skill based "clubs" called Career & Technical Student Organizations – CTSOs – give students an opportunity to participate in leadership development activities, community service, and technical skills competitions.

Nationally, more than 1.5 million students belong to and participate in CTSOs related to their program of study. Research shows that these students are more academically motivated and engaged, show improved grades and increased college aspiration, and demonstrate better 21st century employability skills upon graduation.

Supporting these organizations in your local high school today helps build leadership and skills for tomorrow's workforce!



State Leadership Conference:
Feb. 8-10
Las Vegas



State Leadership Conference:
March 10-12
Reno



State Leadership Conference:
March 15-8
Las Vegas



State Leadership Conference:
March 17-20
Reno



State Leadership Conference:
April 14-17
Reno



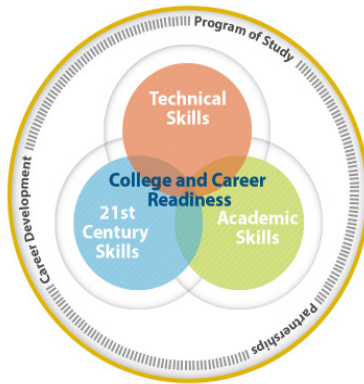
State Leadership Conference:
April 26-28
Las Vegas

What is CTE?

There are literally hundreds of definitions of CTE. The Association for Career and Technical Education (ACTE) has taken all those definitions and developed a paper titled "What Is Career and Technical Education?" Here are some of the key points from that document that will help to put a definition around CTE:

- CTE prepares both youths and adults for a wide range of careers and further educational opportunities. These careers may require varying levels of education—including industry-recognized credentials, postsecondary certificates, and two- and four-year degrees.
- In a recent report on the Carl D. Perkins Career and Technical Education Act (Perkins), approximately 14 million students participated in secondary and postsecondary CTE programs during the 2007-2008 school year.
- Almost all high school students take at least one CTE course, and one in four students take three or more courses in a single program area. One-third of college students are involved in CTE programs, and as many as 40 million adults engage in short-term postsecondary occupational training (U.S. Department of Education's Office of Vocational and Adult Education (OVAE)).
- CTE is at the forefront of preparing students to be "college- and career-ready." CTE equips students with:

- o Core academic skills and the ability to apply those skills to concrete situations in order to function in the workplace and in routine daily activities
- o Employability skills (such as critical thinking and responsibility) that are essential in any career area
- o Job-specific, technical skills related to a specific career pathway



Key CTE Terms

21st Century Skills/Employability Skills/Soft Skills—Skills, other than technical knowledge, needed to succeed in the workplace. Some examples include critical thinking, teamwork, problem solving and goal setting.

Academic Integration—The blending of academic and CTE curriculum.

Articulation Agreement—A formal link between at least two educational entities (i.e., high school and community college) designed to make a smooth student transition between entities.

Career Academies—Small learning communities that are focused on a career pathway and integrate rigorous academics.

Certification—A process individuals go through to illustrate their mastery of subject matter. The certification process involves individuals passing an examination and possessing certain requirements (i.e., education level or years of experience).

CTE Concentrator—A secondary CTE concentrator is a student who has earned three or more credits in a single CTE program area, or two credits in a single CTE program area (where two credit sequences are recognized by the state) (OVAE).

Dual Credit—A program or class through which participants earn credit in more than one area. For example, a high school culinary class that is eligible for college credit through an articulation agreement.

Externship—A program through which teachers/instructors spend time in the business environment. This helps teachers/instructors understand the workforce needs of the business community and what changes need to occur in the classroom to reflect these needs.

Industry Advisory Council (IAC)—The Perkins Act requires that CTE programs have industry advisory councils that meet at least once a year to ensure that the CTE curriculum is up to date and that what is being taught in the classroom adequately prepares students for the workplace.

Industry-recognized Credentials—Those certifications, licenses or certificates that industry groups recognize as being valuable within the industry and illustrate an individual's understanding and/or mastery of subject knowledge.

Internship—An opportunity through which students receive hands-on knowledge and training while working for an entity.

Programs of Study (POS)—Federally defined in the Perkins Act of 2006 as options for students (and their parents as appropriate) when planning for and completing future coursework, for career and technical content areas that:

(I) incorporate secondary education and postsecondary education elements;

(II) include coherent and rigorous content aligned with challenging academic standards and relevant career and technical content in a coordinated, non-duplicative progression of courses that align secondary education with postsecondary education to adequately prepare students to succeed in post-secondary education;

(III) may include the opportunity for secondary education students to participate in dual or concurrent enrollment programs or other ways to acquire postsecondary education credits; and

(iv) lead to an industry-recognized credential or certificate at the postsecondary level, or an associate or baccalaureate degree.

CTE Structure

How CTE is delivered varies by state and even by district. Within CTE, occupations and career specialties are often grouped into "career clusters." There are 16 of these at the national level and they are based on a set of common knowledge and skills. Not all states use all of the clusters and some have additional clusters. The current national career clusters are:

- Agriculture, Food, and Natural Resources
- Architecture and Construction
- Arts, Audio/Video Technology, and Communications
- Business Management and Administration
- Education and Training
- Finance
- Government and Public Administration
- Health Science
- Hospitality and Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections and Security
- Manufacturing
- Marketing
- Science, Technology, Engineering, and Mathematics
- Transportation, Distribution, and Logistics

Further specialization is achieved through comprehensive Programs of Study, which align academic and technical content in a coordinated, non-duplicative sequence of secondary and postsecondary courses, and lead to an industry-recognized credential or certificate at the postsecondary level, or an associate or baccalaureate degree.

Career & Tech Ed (CTE) Funding

Career and technical education programs are funded primarily by state and local resources, as are most education programs. At the federal level, the Perkins Act also provides funding to states and local school districts and postsecondary institutions for program improvement and innovation.

Carl D. Perkins Career and Technical Education Act: Most recently reauthorized in August 2006, the purpose of Perkins is to provide individuals with the academic and technical skills needed to succeed in a knowledge- and skills-based economy. Perkins supports CTE that prepares its students both for postsecondary education and the careers of their choice. Federal resources help ensure that CTE programs are academically rigorous and up to date with the needs of business and industry. The federal contribution to CTE, about \$1 billion annually, supports innovation and expands access to quality programs. Federal funds provide the principal source for innovation and program improvement, and help to drive state support through a "maintenance-of-effort" provision in the federal law.

Perkins Basic State Grant Funds: These funds are provided to states that, in turn, allocate funds by formula to secondary school districts and postsecondary institutions. States have control over the split of funds between secondary and postsecondary levels. After this decision is made, states must distribute at least 85 percent of the Basic State Grant funds to local programs using either the needs-based formula included in the law or an alternate formula that targets resources to disadvantaged schools and students. States may reserve up to 10 percent for leadership activities and five percent (or \$250,000, whichever is greater) for administrative activities.