

Agriculture and Culinary Arts Career Technical Education (CTE) “Best Practices”



Office of Farm to Fork
California Department of Food and Agriculture

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Executive Summary

California is home to an agricultural labor force totaling more than 300,000 and a culinary arts/food service labor force near ten times that amount. These industries rely on a steady supply of labor, both full time and seasonal, which are critical to the economic prosperity of the State. However, as the current labor force ages fewer students exiting secondary education are prepared to begin a professional career in either industry. In response, California has developed rigorous and relevant Career and Technical Education (CTE) programs aimed to prepare and encourage students to enter into the agricultural and food service/culinary arts industries.

The report offers an overview of agricultural and culinary arts/food service CTE programs, best practices for such programs, examples of model programs throughout the State, and ends with strategic planning advice for new programs and opportunities for expansion. It finds that agricultural and culinary arts/food service CTE programs should focus on the following strategies¹:

1. Comprehensive Strategic Career Readiness

Schools that have successful CTE programs promote individualized career and education plans, incorporate interdisciplinary curriculum, and coordinate articulation agreements with local postsecondary education institutions and trade schools for recent graduates. Successful CTE programs also offer sequenced programs of study or career cluster programs that position students to earn dual credit for both high school and valuable higher education credit, allowing for substantial progress towards a college career before they finish high school. Beyond providing students with the necessary academic and professional skills to be “college-ready,” successful CTE programs incorporate interdisciplinary education and provide opportunities to obtain technical skill certifications for those students who are directly entering the agriculture or culinary/food service industries.

2. External Experience: Beyond “Experiential Learning”

Through “experiential learning” or “learning by doing,” students are not confined by the traditional classroom model that does not engage all student-types; rather, hands-on experience through job-shadowing, internships, and working relationships with employers assist students in making tangible connections to career areas that bring purpose and intentionality to school curriculum for future endeavors. Beyond the traditional approach to experiential learning, schools that incorporate non-traditional learning opportunities, and develop rigorous, sequenced and interdisciplinary curriculum have shown enhanced benefits of experiential learning for their students.

3. Communication/Coordination with Stakeholders

Experiential learning and strategic career-readiness objectives undoubtedly have tremendous benefits for the students enrolled in CTE programs, but rarely are they harnessed to help develop a larger professional network for teachers and their respective school programs.

¹ For a comprehensive list of best practices and associated strategies please see page 25 within this report titled “Next Steps and Final Thoughts.”

External stakeholders' knowledge and experience (including but not limited to non-profit organizations, relevant community members/groups, private businesses/individuals, and industry representatives) are excellent resources for information, internship placements, and experiential learning opportunities for both students and faculty in CTE programs.

4. Multifaceted Funding

Schools with successful agricultural and culinary arts/food service CTE programs rely on a variety of funds to support their programming and those that are most successful develop self-generating sources to bypass these inevitable uncertainties.

This report describes "best management practices," highlights their use in model programs across the state, and identifies tools that organizations can use to implement successful programs, specifically, the use of strategic planning. The intent of this report is to assist current and future agricultural and culinary arts CTE programs in contributing to the development of a sustainable, competent, and competitive workforce for California.

Introduction

California's agricultural sector employs more than 10% of the total population and is arguably one of the State's largest and most profitable industries.² California agriculture generates more than \$44 billion in production annually.³ For all of its benefit however, it is also potentially in peril--according to the U.S. Department of Agriculture (USDA) Census on Agriculture, the average age of a California farmer/rancher is 57 years old. In fact, about sixty percent of the farmers in this country are 55 years old or older.⁴ It's not just that farmers are among America's oldest workers – their average age also has been growing rapidly for the last 30 years, from 50.5 years to 58.3 years.⁵

Not only are California farmers and ranchers getting older, but there are fewer people standing in line to take their place. Although this pipeline issue is most pronounced for farmers and ranchers, it is also of concern in the related food service and culinary arts industries. Without proper education and succession planning to expose and encourage young adults to pursue careers in agriculture, food service and culinary arts, the future solvency of the agricultural industry and its workforce are in question. Former U.S. Deputy Secretary of Agriculture Kathleen Merrigan sees this as an epidemic of significant proportions: "if we do not repopulate our working land, I don't know where to begin to talk about the woes. There is a challenge here, a challenge that has a corresponding opportunity."⁶

In response to these agricultural and culinary arts/food service skills-gaps, the State has supported the development and use of rigorous and relevant career and technical education (CTE) programs to prepare young adults for a wide range of high-wage, high-skill, and high-demand careers.

This report will outline the current implementation strategy and advantages of agricultural and culinary vocational CTE programs; specify "best practices" in CTE program delivery and logistics; identify a series of schools with successful programs; and finally, provide specifics on current and developing agriculture/culinary CTE programs that utilize the identified "best practices."

² Paggi, M. (2011). California agriculture's role in the economy and water use characteristics. Center for Agricultural Business and Irrigation Technology, California State University, Fresno.

http://www.californiawater.org/cwi/docs/AWU_Economics.pdf

³ United States Department of Agriculture, California Agricultural Statistics 2012 Crop year, available at: <http://www.agcensus.usda.gov/>

⁴ United States Department of Agriculture. (2012). Census of agriculture. <http://www.agcensus.usda.gov/>

⁵ United States Department of Agriculture. (2012). Census of agriculture. <http://www.agcensus.usda.gov/>

⁶ Montoya-Brian, S. (2012). *Nation's farmers, ranchers aging, USDA fears*. Washington Post. April 9, 2012. http://www.washingtonpost.com/politics/nations-farmers-ranchers-aging-usda-fears/2012/04/08/gIQApcem5S_story.html

Agricultural and Culinary/Food Service CTE & Career Pathways

Career and Technical Education (CTE) programs train students for postsecondary education and careers by providing multi-year academic and technical training.⁷ CTE programs generally consist of sequence of courses corresponding to fifteen industry sectors. For more information on CTE programs, career clusters, funding, and benefits, please see Appendix A (page 27). The two industry sectors and their corresponding career pathways most relevant to the development of agricultural, food service, and culinary workforces in California are: “Agriculture and Natural Resources” and “Hospitality, Tourism, and Recreation.”

Agriculture and Natural Resources

The Agriculture and Natural Resources CTE sector is “designed to provide a foundation in agriculture for all agricultural students in California” emphasizing real-world, occupationally relevant experiences in⁸:

- Agricultural Business
- Agricultural Mechanics
- Agriscience
- Animal Science
- Forestry and Natural Resources
- Ornamental Horticulture
- Plant and Soil Science

According to the California Department of Education, a successful agricultural CTE program is grounded in three foundational components: classroom instruction, Future Farms of America (FFA) leadership activities and Supervised Occupational Experience Projects.⁹ Since 1928, the Agricultural Education Unit at the Department of Education has been the official sponsor of the California Association for the Future Farmers of America (FFA), an integral part of the comprehensive agricultural education program.



⁷ California Department of Education, Career Technical Education, <http://www.cde.ca.gov/ci/ct/>

⁸ CA State Board of Education. (2005). California Career Technical Education Model Curriculum Standards, <http://www.cde.ca.gov/ci/ct/sf/documents/ctstandards.pdf>

⁹ National Future Farmers of America Organization. (2014). Agricultural Education Mission. <https://www.ffa.org/about/whoware/Pages/AgriculturalEducation.aspx>

The intent of agricultural CTE programs is not only to prepare students for careers in the aforementioned seven career pathways, but also to increase California students’ overall agricultural literacy.¹⁰ Within the Agricultural and Natural Resource pathways, students are prepared to work in some of the fastest-growing and highest-wage occupations in California including agricultural marketing and sales personnel, agricultural engineers, laboratory and research technicians, among other specialists in both urban and rural areas. A sample pathway for a student in the Agriculture and Natural Resources industry sector in Agricultural Business may include the following curriculum:

Agricultural Business

Sample sequence of courses in the Agricultural Business pathway:

CTE courses	Related courses
Introductory <ul style="list-style-type: none"> • Introduction to Agriculture 	<ul style="list-style-type: none"> • Work Experience Education • Speech and Communication • Information Technology sector courses • Government • Accounting • Chemistry
Concentration <ul style="list-style-type: none"> • Agricultural Biology • Integrated Agricultural Science • Ornamental Horticulture • Plant Science • Animal Science • Agricultural Computers 	
Capstone <ul style="list-style-type: none"> • Agricultural Business Management • Agricultural Sales and Service • Agricultural Economics and Policy 	

Figure 3: Agricultural Business Career Pathway Curriculum¹¹

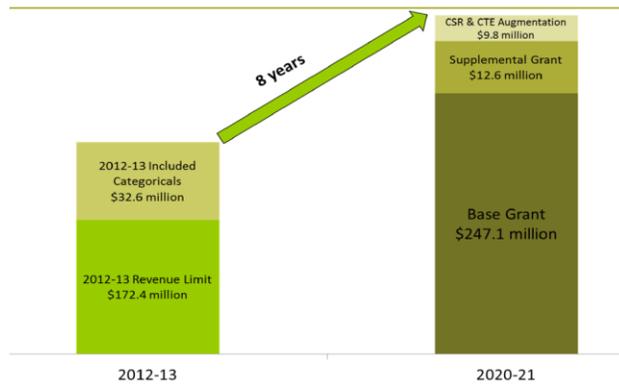
Recently there has been particular legislative attention to the solvency of funding for agricultural education and agriculture-specific CTE programs. California’s 2013-2014 omnibus budget bill made major changes both to the way the State allocates funding to school districts and the way the State supports and intervenes in underperforming districts via the Local Control Funding Formula (Assembly Bill 97, Chapter 47). Among other things, the Local Control Funding Formula (LCFF) eliminates approximately three-quarters of categorically funded career education programs, which previously received a dedicated, or “categorical” funding stream. The new Local Control Funding Formula, approved by Governor Brown, relaxes most categorical funding and allows districts to use money to fund specific programs as “flexed” items rather than “categorical.” The following chart shows the

¹⁰California Department of Education. (2014). Agricultural Education. <http://www.cde.ca.gov/ci/ct/ae/>

¹¹ California State Board of Education. (2007). Career Technical Education Framework for California Public Schools. <http://www.cde.ca.gov/ci/ct/sf/documents/cteframework.pdf>

projected changes in State funding for current categorically-funded CTE programs from the 2012/13 to the 2020/21 fiscal years.

Local Control Funding Formula (LCFF)



LCFF's effect on Categorically-funded CTE Programs¹²

Hospitality, Tourism, and Recreation

While California does not have a culinary arts or food service-specific CTE program, the “Hospitality, Tourism and Recreation” industry sector does incorporate three distinct, yet interrelated career pathways that relate to these sectors¹³:

- Food Science, Dietetics and Nutrition
- Food Service and Hospitality
- Hospitality, Tourism, and Recreation

The Hospitality, Tourism and Recreation curriculum standards are anchored in Consumer and Family Studies (formally known as “home economics”) to equip students with comprehensive technical knowledge and skills to prepare them for careers in various fields. “Knowledge and skills are acquired through a sequential, standards-based pathway that integrates hands-on projects, work-based instruction, and leadership development as offered through FHA-HERO, the California affiliate of Family, Career, and Community Leaders of America (FCCLA).”¹⁴ FHA-HERO and the National Restaurant Association are national and statewide partners with culinary arts and food service CTE programs that

¹² Fremont Unified School District (2013). Local Control Funding Formula local control and accountability plan. PowerPoint. Presented October 23, 2013 to Division of Business Services and Instructional Services.

http://www.fremont.k12.ca.us/cms/lib04/CA01000848/Centricity/Domain/78/Budget%20Update_LCFF_LCAP%20final.pdf

¹³ CA State Board of Education. (2005). California Career Technical Education Model Curriculum Standards, <http://www.cde.ca.gov/ci/ct/sf/documents/ctestandards.pdf>

¹⁴ California Department of Education. (2013). California Career Technical Education Model Curriculum Standards. <http://www.cde.ca.gov/ci/ct/sf/documents/hosptourrec.pdf>

encourage students to enter into the field and participate in annual state-wide and national competitions to demonstrate and enhance their skills.



These three distinct pathways (Food Science, Dietetics, and Nutrition; Food Service; Hospitality, Tourism and Recreation) offer opportunities for students to specialize in particular component of the food service or culinary careers and learn about industry standards, food safety standards, workforce and organizational management, customer service, nutrition, as well as sales and administration.¹⁵ Food service occupations, which range from food production and service (culinary) to the study of human nutrition and wellness, are profitable to the State; the industry brings in over \$970 million a day and accounts for 8% of jobs worldwide. More specifically, the California restaurant industry is the largest employer in the state, providing 957,000 jobs and providing sales tax revenues upwards of \$4 billion to the State. Students choosing a career in this industry (as of 2012-2013 over 33,000 students in the state were enrolled in the Hospitality and Culinary Arts Career Pathway) are eligible for positions throughout the world “with potential for advancement and ready availability of continuing employment.”¹⁶ A sample pathway for a student in the Hospitality, Tourism and Recreation industry sector in Food Service and Hospitality may include the following curriculum:

Food Service and Hospitality

Sample sequence of courses in the Food Service and Hospitality pathway:

CTE courses	Related courses
Introductory <ul style="list-style-type: none"> • Home Economics Careers and Technology Comprehensive Core I • Home Economics Careers and Technology Comprehensive Core II 	<ul style="list-style-type: none"> • Entrepreneurship • Business • Accounting
Concentration <ul style="list-style-type: none"> • Nutritional Science • Foods and Nutrition • Food, Nutrition, and Meal Management 	
Capstone <ul style="list-style-type: none"> • Careers in Food Service and Hospitality (Culinary Arts) • Food and Beverage Production 	

¹⁵California Department of Education. (2013). California Career Technical Education Model Curriculum Standards. <http://www.cde.ca.gov/ci/ct/sf/documents/hosptourrec.pdf>

¹⁶ California Department of Education. (2007). Career Technical Education framework for California public schools: grades seven through twelve. <http://www.cde.ca.gov/ci/ct/sf/documents/cteframework.pdf>

Funding and participation in this particular career pathway and in this industry sector has been notably reduced in the last twenty years. In 1992-1993, Home Economics CTE programs had over 222,000 students enrolled; in 2012-2013 only 129,923 students were enrolled.¹⁷ As academia shifts away from the “home economics” component of secondary education, school administrators and faculty have struggled to prioritize hospitality and food service education, regardless of its economic and workforce importance to the State. As California “agrotourism” and “agritainment” are slated to be large revenue sources for the State, refocused career education in this field is appropriate.

Best Practices: A Model for Success in CTE

While Agricultural and Culinary Arts/Food Service CTE Programs, at first glance, may seem to exist within educational silos, successful programs share best practices that yield challenging curriculum, provide a systematic methodology for sustained programs, and enable integrated academic and CTE foundational principles.

The process of developing a model for success in CTE is not linear—challenging academic curriculum should not precede professional career and technical experience and vice versa. Rather, both concepts, embedded within CTE programs should be developed simultaneously and continuously. If CTE programs and faculty perpetuate feedback loops between curricula, communication, experience and professional networks, the result will be cohorts of life-long learners equipped with the skills for advanced careers in culinary arts, agriculture and food service.

This report identifies four basic tenants that exemplify best practices in agricultural and culinary arts/food service CTE programs: (1) strategic career readiness, (2) external experience, (3) communication and coordination with stakeholders, and (4) multifaceted funding. Each tenant reflects the foundational intent of career and technical education and provides for successful programs in California.

1. Comprehensive Strategic Career Readiness

- **Support transitions to post-secondary education**

According to the Association for Career Technical Education (ACTE) the average high school graduation rate for students concentrating in CTE programs is 90.18%, while the average for those not participating in CTE programs are closer to 70%. More specifically, graduate follow-up data reveals that agricultural education programs currently send more students to post-secondary college and training institutions, where they graduate with degrees in larger numbers and in shorter time frames than their peers in general academic programs.¹⁸ CTE programs have been proven to provide students with comprehensive guidance, personalized career development and structured transition from secondary to postsecondary

¹⁷ McCabe, L. (2013). “CalPads/PBEDS enrollment trends in CTE in California.” Career Technical Education Leadership and Instructional Support Office, California Department of Education.

<https://www.documentcloud.org/documents/1009332-cte-enrollment-trends-2012-13-1.html>

¹⁸ Ashwanden, J. (January 29, 2014). “Supporters of agricultural education must mobilize now.” Ag Alert.

<http://agalert.com/story/?id=6358>

education (in addition to the traditional career preparation mechanisms of resume workshops, interview preparation and career fairs). Therefore, providing students with both the skills for success and a roadmap for how to move forward into post-secondary education is paramount to the development of the State's competitive and successful workforce.

More specifically, schools that have successful culinary arts/food service and education promote individualized career and education plans, incorporate interdisciplinary curriculum, and coordinate articulation agreements with local postsecondary education institutions and trade schools for recent graduates to do so. Successful CTE programs offer sequenced programs of study or career cluster programs that position students to earn dual credit for both high school and valuable higher education credit (University of California "A-G" Subject Requirement), making substantial progress towards a college career before they finish high school. Today, there are 1,337 agriculture education courses approved by the University of California and the California State University system for meeting the admission requirements of those universities, representing 45 percent of agricultural courses offered statewide.¹⁹ Earning credit or credentials in high school can make post-secondary education an affordable and attainable possibility for those students who may otherwise not pursue a post-secondary education.

- **Encourage post-secondary education *and* career preparation**

Beyond providing students with the necessary academic and professional skills to be "college-ready," successful CTE programs incorporate interdisciplinary education and provide opportunities to obtain technical skill certifications for those students who are directly entering the agriculture or culinary/food service industries. With respect to agricultural CTE programs, successful schools devote a large portion of the academic curriculum to relevant areas of professional farming/ranching careers including farm pricing and management, agricultural marketing, pest management, while introducing them to larger bodies governing federal, state and local agricultural policy. These skills and knowledge prepare students for careers as new farmers and ranchers in California. Likewise, successful culinary arts/food service CTE programs incorporate practical professional skills such as menu pricing, food safety procedures, and an understanding of local procurement practices, as well as offer students the opportunity to earn a "ServSafe Food Handler Certificate" that can be used in a professional career setting.²⁰ These attributes support both post-secondary education and career preparation.

2. External Experience: Beyond "Experiential Learning"

In CTE programs, students experience academic subjects and disciplines via inquiry in specific career pathways. Through "experiential learning" or "learning by doing," students are not confined by the traditional classroom model that does not engage all student-types. Rather, hands-on experience through job-shadowing, internships, and working relationships with employers assist students in making tangible connections to the career areas that bring purpose and intentionality to school curriculum for

¹⁹ Ashwanden, J. (January 29, 2014). "Supporters of agricultural education must mobilize now." Ag Alert. <http://agalert.com/story/?id=6358>

²⁰ Serve Safe National Restaurant Association. (2014). <http://www.servsafe.com/home>

future endeavors. Beyond the traditional approach to experiential learning, schools that incorporate the following practices have shown enhanced benefits of experiential learning for their students:

- **Explore non-traditional experiential learning opportunities**

Competitions—Regional, state-wide, or local competitions are an excellent way for students in both agricultural and culinary/food service CTE programs to develop and practice their skills in a high-intensity, realistic environment, as well as be exposed to the machinations of professional careers that otherwise would be unexplored in a classroom setting. For agricultural education, County/State Fair shows and auctions, as well as annual FFA State Conferences, not only provide students with the opportunity to showcase their work products but also allow them to further develop interpersonal and professional communication skills through interaction with industry representatives and students from related programs. Likewise, for culinary arts/food service CTE programs, annual competitions such as ProStart (managed by the National Restaurant Association’s Educational Foundation) and FHA-HERO (the California affiliate of Family, Career, and Community Leaders of America) allow students to apply their skills beyond the confines of a school or district kitchen facilities, and incorporate menu planning, cost forecasting, presentation, and other marketable skills.²¹

Site visits/industry seminars—studies show that external experiences such as field trips facilitate students’ learning and connect schoolwork with the world, making it tangible and memorable. Students who attend these “traditional” external experiences have been shown to demonstrate “stronger critical thinking skills, display higher levels of tolerance, have more historical empathy and develop a taste for being a cultural consumer in the future.”²² Too often however, agricultural and culinary/food service CTE programs are excluded from this educational tool due to lack of resources or limited knowledge of the local professional industry. Beyond visiting postsecondary institutions that professionally train students for careers in culinary arts, food service and agriculture, successful CTE program staff reach out to non-traditional resources to coordinate external experiences including local restaurants and catering facilities, small-scale farms and ranches, or district food service facilities. Should resources to facilitate site visits be absent or insufficient, non-profit and advocacy partners such as the California Foundation for Agriculture in the Classroom and the National Restaurant Association Education Foundation have local contacts and can coordinate industry-run seminars/lectures for CTE students at school sites.

- **Develop rigorous, sequenced, and flexible curriculum to supplement experiential learning**

The following represents a sample curriculum for multi-year agricultural and culinary arts/food service CTE program that connects curriculum with experiential learning:

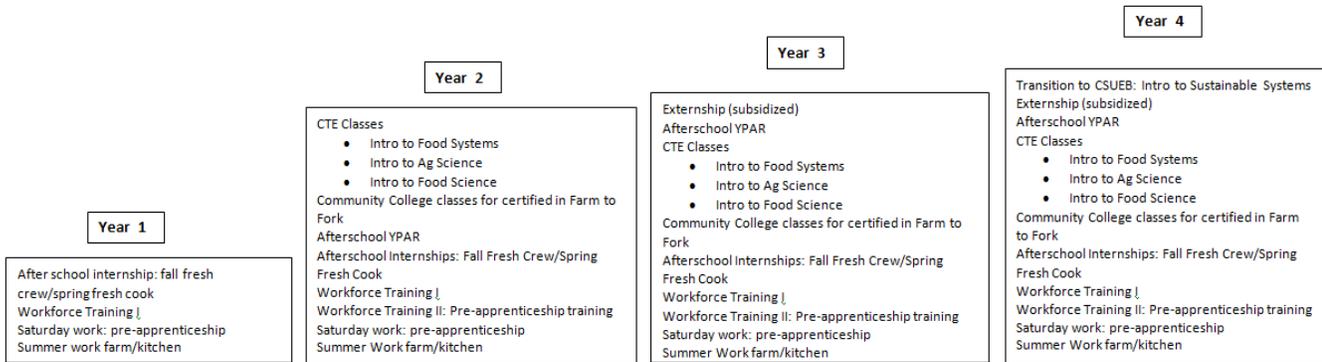
²¹ National Restaurant Association Educational Foundation. (2014). ProStart. <http://www.nraef.org/prostart>
FHA-HERO, the California affiliate of Family, Career, and Community Leaders of America (FCCLA) <http://www.ca-fhahero-fccla.org/home.html>

²²Green, J., Kisida, B., Carroll, D., Stambuck, H. (2013). “Research: School Field Trips Give Significant Benefits.” University of Arkansas Newswire. <http://newswire.uark.edu/articles/21975/research-school-field-trips-give-significant-benefits>

Agricultural Education Curriculum²³

California Agriculture	Animal Science	Plant Science	Ag Business Management	Leadership	Ag Mechanics	Employability/ Career	Supervised Occupational Experience
Economics of CA Ag	Domestic Animals	Basic Botany	Record Keeping	FFA Leadership Development	Measuring & Layout	Interview Skills	Internship
Ag & Society	Animal Behavior and Biology	Soils	Ag Credit	Parliamentary Procedure	Tool Use & Safety	Ag Career Options	
Ag & CA Resources	Major Mammalian Body Systems	Plant Nutrition	Ag Marketing	Communication	Small Engines & Power Equipment	Individual Career Planning	
	Genetics & Breeding	Irrigation	Computers in Ag	Critical Thinking		Job Search Resources	
	Nutrition and Feeds	Pest Management				Applying for Jobs	
	Animal Health						

Culinary Arts/Food Service Curriculum²⁴



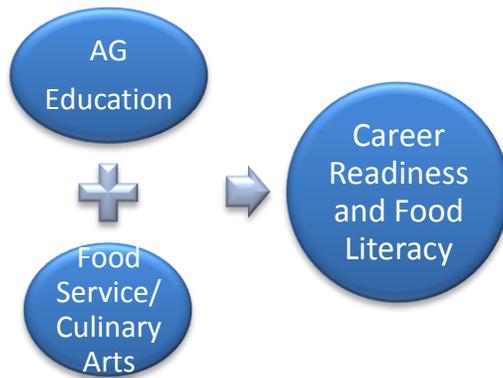
- **Emphasize interrelated curriculum and programs**

In addition to the independent agriculture and culinary arts/food service CTE programs curriculum, several California schools have discovered that school- or community-run gardens can serve as a conduit to connect agricultural and culinary arts/food service CTE programs, increasing opportunities for

²³ These eight subfields are headers from a larger list of exemplary California agricultural curriculum developed by the California Future Farmers of America (FFA) Foundation. <http://www.calaged.org/resources/curriculum>

²⁴ This four-year lesson plan is the product of Project EAT's (Educate, Act, Thrive) Food Career Pathways (FPC3) Model Program presented in January 2014. <http://projecteat.aceo.org/>

interdisciplinary education and expanded experiential learning.



Even those schools without culinary arts or agricultural CTE programs can reap the experiential learning benefits from the usage of a community-run or school-run garden and can develop related curriculum to incorporate agricultural and food literacy at school sites where formalized programs are not offered. Pittsburg Unified School District, for example, has partnered with a series of school sites (Pittsburg High School, Black Diamond Alternative High School, and Willow Cove Elementary) to incorporate basic tenants of agricultural and culinary/food service education into school curriculum. The following is a list of schools that utilize school gardens successfully to develop interrelated curriculum and programs; This list is by no means exhaustive, each school listed represents successful programs from a diversity of socioeconomic and regional school sites. They are but a subset of schools that is not representative of the multitude of school gardens across the State.

School	City/County
Dana Middle School	San Diego
Pacific Beach Elementary School	Pacific Beach
Carthay Elementary	Los Angeles
Los Cerritos Elementary	San Francisco
Washington Elementary School	Sacramento
Bay Farms Elementary School	Alameda
Westlake Elementary School	Santa Cruz
Pacific Elementary School	Sacramento
Julien Elementary	Turlock
Fruit Ridge Elementary	Sacramento
Cherryland Elementary School	Hayward
Theodore Judah Elementary School	Sacramento
Sacramento High School	Sacramento
Sequoia Elementary School	Sacramento
Cesar Chavez Middle School	Watsonville
Steele Lane Elementary School	Santa Rosa
De Laveaga Elementary School	Santa Cruz
Riviera Hall Lutheran	Redondo Beach
Richmond College Preparatory School	Richmond
Torrey Pines	La Jolla

3. Communication/Coordination with Stakeholders

- **Leverage knowledge and experience of stakeholders (external *and* internal)**

Generally speaking, external stakeholders (including but not limited to non-profit organizations, relevant community members/groups, private businesses/individuals, and industry representatives) related to agriculture and culinary arts/food service are excellent resources for information, internship placements, and experiential learning opportunities for students. These groups and individuals often help school administration and the community at large to identify the benefit and the rewards of participation in these programs for both the students and the school. However, schools that are most successful within these educational subfields not only take advantage of external groups and individuals, but internal stakeholders as well.

With respect to culinary arts/food service CTE programs, the school environment is rich with individuals well-versed in institutional food procurement, preparation, and professional experience. These individuals include food service directors, food service staff, and district producers/distributors that have experience in preparing for and supplying the more than 559 million school meals delivered to students in California annually.²⁵ Several successful programs have sought to formalize the link between School Food Services (i.e. Child Nutrition Programs) with culinary and agricultural CTE programs. Additionally, by working with a school administration or organization for internal stakeholders, students in CTE programs can be exposed to a greater array of related subfields: economics, business, nutrition, science, technology, politics/policy, and history to enhance their learning potential.

- **Develop CTE professional networks and promote staff/teacher development**

Experiential learning and strategic career-readiness objectives undoubtedly have tremendous benefits for the students enrolled in CTE programs, but rarely are they harnessed to help develop a larger professional network for teachers and their respective school programs. In this regard, external experiences (i.e. competitions, site visits, conferences, etc.) can be used as opportunities to: enhance a culinary/food service and agricultural CTE programs' reputation, as a recruiting tool for future program cohorts, and offer professional development opportunities for CTE staff and faculty. By capitalizing on these otherwise missed opportunities, CTE teachers and administrators can develop more sustainable programs and ensure a "deep bench" of participants year after year.

4. Multifaceted Funding

Funding for CTE programs, both generally and specific to agricultural and culinary arts/food service education, is precarious; particularly when district and school budgets are dependent upon federal and state-provided funding (such as Federal Perkins CTE Funds and State-provided Career Technical Education Incentive Grants). Schools with successful agricultural and culinary arts/food service CTE programs rely on a variety of funds to support their programming and those that are most successful develop self-generating sources to bypass these inevitable uncertainties.

²⁵ California Department of Education. (2012-2013). School Nutrition Program participation information. <http://www.cde.ca.gov/ds/sh/sn/#annual>

- **Seek supplemental and sustainable funding sources**

Just as successful schools seek information and professional expertise from both internal and external stakeholders, they also seek out non-traditional funding sources to supplement federal, state, and district funding for CTE programs. Private investors and corporate sponsors (such as Dow Chemicals for Black Diamond Alternative High School) can provide supplemental, stable funds for agricultural and culinary/food service CTE programs and provide additional monies for large purchases such as farm equipment, kitchen supplies, or facility costs. Additionally, in response to continual budget cuts at the local and state level, several schools with agricultural and culinary/food service programs in California have utilized Regional Occupational Centers and Programs (ROCPs) to consolidate resources and expertise into a larger and more accessible cooperative program for inter- and intra-district programs.

- **Work with, not within, resource constraints**

Creative funding opportunities also exist within these CTE subfields. For agricultural programs, individual FFA chapters and school-run programs have been extremely successful through private fundraising, as well as using marketing to involve the larger community in the auction/market sale of livestock or produce raised/reared through specific courses. The apportionment of these funds is used to finance ongoing programs. The same can be said for culinary arts/food service programs, which commonly sell produce to the community from a school-run farm or community supported agricultural (CSA) program. Several schools run financially self-supported culinary arts programs through revenues from program-run catering businesses or restaurants. These creative opportunities represent how successful CTE programs work “with” not “within” resource constraints.

Schools Exemplifying “Best Practices”

The following schools have been identified as exemplifying the “best practices” in Agricultural Education and Culinary Arts/Food Service Career and Technical Education discussed above.²⁶ Several factors were used to evaluate the success of each respective program and incorporated both quantitative and qualitative metrics.

These lists have been compiled by the California Department of Food and Agriculture’s Office of Farm to Fork following consultation with a series of public and private partners within each subfield. These

²⁶ The Office of Farm to Fork has consulted with the California Department of Education, CTE education advocacy organizations, and various industry representatives when identifying model schools exercising best management practices. Each school listed has been screened and interviewed by staff from the Office of Farm to Fork. For more information about what type of metrics were used to evaluate the relative success of each program and a comprehensive list of agricultural and nutrition/culinary arts CTE programs in the state, please refer to Appendix B and visit www.cafarmtofork.com, respectively.

partners include the following: the California Department of Public Health, the California Department of Education (Agricultural Education Unit), the California Restaurant Association, the California Foundation for Agriculture in the Classroom, the California Farm Bureau Federation, the Association for Career Technical Education, the University of California (Division of Agriculture and Natural Resources), and the California School Nutrition Association, among others.

Model Schools – Agricultural Education

School	City/County
El Molino High School	Sonoma
Eureka High School	Humboldt
Nevada Union High School	Grass Valley
Liberty Ranch High School	Galt
Grace Davis High School	Modesto
Dixon High School	Dixon
Wallenberg High School	San Francisco
Galt High School	Galt
Hanford High School	Hanford
Avenal High School	Avenal

Model Schools – Culinary/Food Service Education

School	City/County
San Juan High School	Citrus Heights
Mt. Diablo High School	Concord
Chino High School	Chino
Sierra High School	Manteca
Pleasant Valley High School	Chico
Paso Robles High School	Paso Robles
Mills High School	Millbrae
Blair High School	Pasadena
Newport Harbor High School	Newport Beach
Silverado High School	Victorville
Orange Glen High School	Escondido
Vintage High School	Napa

Model Programs—An Overview of Best Practices

Using the best practices identified above and enacted by the aforementioned rural and urban schools across the State, the following section presents a more detailed study of two particularly successful agricultural and culinary/food service CTE programs. Each program was selected because they exemplify the four tenants of best practices in career and technical education in California: (1) strategic career

readiness, (2) external experience, (3) communication and coordination with stakeholders, and (4) multifaceted funding.

1. Comprehensive Strategic Career Readiness

Agricultural CTE--Dixon High School (Dixon, CA)

The graduating cohort of students participating in the agricultural program at Dixon High School mirrors the national rate of 90% for students in CTE programs and boasts an average of 220 students in program annually. Beyond the traditional career pathways and related curriculum specified by the Department of Education, Dixon High School prepares its students for the agricultural industry by incorporating an interdisciplinary education, supplementing students Supervised Agricultural Experiences (internships and externships) with a math and business-specific perspective and preparing students for post-secondary education. Additionally, for those not pursuing further education in favor of entering immediately into the industry, the agricultural program approaches every course (from agricultural modeling to wildlife art) from a career modeling perspective, helping students with internship and job placement in the community and surrounding areas. Finally, Dixon High School's agricultural CTE program intends to institute a school farm development program for which it recently secured 20 acres of surrounding land. Students have and will continue to learn career-specific skills through the modeling and mock up process for the property, and be equipped to begin careers as promising young farmers and ranchers.

Culinary Arts/Food Service CTE--Sierra High School (Manteca, CA)

The Culinary Arts and Hospitality Services Academy at Sierra High School is part of a larger Regional Occupational Program (ROP) Center that includes Manteca Unified School District and an adult district-run vocational school that incorporates strategic career readiness goals and objectives intended to prepare students for careers in culinary arts and food service upon graduation. In addition to providing courses that qualify as "A-G" subject requirement credits transferable to all CSUs and UCs in the State, Sierra High also features curriculum that incorporates advanced food science/nutrition and food policy information, provides lab-science credit, provides food handler certificates for students, and previously held articulation agreements with post-secondary education institution Delta College. Incorporating these supplementary services to students beyond the traditional life management skills (i.e. resume building, career planning and interview skills) allows for students at Sierra High to be uniquely prepared for advanced careers in the field and serve as a legacy for the program as it enters its 20th year.

2. External Experience: Beyond "Experiential Learning"

Agricultural CTE--Galt High School (Galt, CA)

Beyond its statewide recognition as a successful program at the annual California Future Farmers of America (FFA) Conference, the agricultural CTE program at Galt High School has been a fixture since 1929 focusing on the application of biology, physical, and economic principles to the many facets of agriculture. Through incorporating agricultural economics and government, industry-standard technical skills, and cross-curricular courses into the foundational concepts of agricultural education (including mechanic, technology and floriculture), students can more-readily connect their work to policy

development, business practices, and global development, in a highly-participatory manner. Beyond curriculum and Supervised Agricultural Experiences, students at Galt High school are exposed to guest speakers (in agriscience and agricultural mechanics), participate in farm tours (to meat and milk processing facilities, organic farms, and veterinary facilities, and receive assistance in internship and post-graduation placements. Galt High students also are offered the opportunity to attend state conferences and additional travel opportunities, at no cost, with the help of their active booster club and supportive administration and community. Finally, Galt High is capitalizing on community support and the current program's success to expand the learning experience for academy students through the development of a poultry production facility and engage participants in entrepreneurship, research, and skill building using this career-focused facility.

Culinary Arts/Food Service CTE--Pleasant Valley High School (Chico, CA)

The Culinary Center is a facet of the Home Economics CTE Pathway at Pleasant Valley High School. Beyond the challenging capstone curriculum of Culinary Arts I and II where students are taught food safety and handling procedures, menu planning and pricing, aesthetic meal preparation, and life management skills, the Culinary and Hospitality Career Pathways at Pleasant High offers a variety of experiential learning opportunities that extend beyond conventional methods in practice. Academia and skills training are coupled with internship opportunities for upperclassmen with local restaurants and in the program-run catering service where their skills can be put to work for local clientele like CSU Chico. Students in the Culinary Arts II phase of the program operate in a separate facility for targeting training and experience. Students also are exposed to the professional sector via tours of local farms and ranches and in the region (e.g. Lucero Olive Oil and Lunberg Family Farms). Pleasant Valley's Culinary Program also participates in extracurricular activities such as the annual ProStart management and culinary competition, hosted by the National Restaurant Association, and FHA-HERO. Furthermore, students also learn about food service and nutrition in action with monthly lab demonstrations and district wide recipe development at elementary schools throughout the Chico Unified School District. [Students create several recipes to be analyzed and tested for the district's meal program with the assistance of Child Nutrition staff; these kid- and kitchen-tested recipes are the product of excellent partnerships between school food service staff, nutrition and culinary arts teaching staff, and foodservice culinary employees.](#)

3. Communication/Coordination with Stakeholders

Agricultural CTE—Liberty Ranch High School (Galt, CA)

The Agriculture Academy at Liberty Ranch High School can attribute its widely-recognized success in part to its heavy involvement in the Galt community, its focus on fostering communication lines with external and internal stakeholders, and work to connect students enrolled in the Academy with industry leaders and professional organizations. Liberty Ranch's Agricultural teaching staff takes advantage of in-house expertise in science, mathematics, communications, health, and government to expose FFA students to multi-dimensional experiential learning and expand the curricula beyond the traditional courses offered by conventional agricultural programs. The Academy also reaches out to its partners in the greater Northern California community to cultivate connections to the agricultural industry and primary and post-secondary education intuitions (such as local elementary and middle schools, Butte College, and

potentially, Modesto Junior College and San Joaquin Delta College in the future.) These efforts allow Liberty Ranch to develop recruitment hubs at local schools using the Partners in Active Learning Support (PALS) program and host prominent guest speakers including: representative from the California Farm Bureau Federation, Universal Technical Institute (UTI), Spartan Aeronautics, ARMY, and Caterpillar. This summer a core group of agricultural students will be working with the Sacramento Municipal Utilities Services District (SMUD) in an internship program to create a sustainable energy efficiency plan for the Liberty Ranch Campus. Boasting a near perfect graduation rate of Agriculture Academy Students, Liberty Ranch's outside the classroom learning opportunities, involvement in state and national competitions, varied guest speakers, and opportunities for non-traditional students to become involved in the program is reflected in the success of the program and high level of career-readiness in its students.

Culinary Arts/Food Service CTE--Paso Robles High School (Paso Robles, CA)

The Culinary Arts Academy run by Paso Robles High School is part of a larger Regional Occupational Program (ROP) which hosts both an academic and instructional kitchen with a fully functional dining area (the Academy Café-fully staffed by students) at its centrally-located facility. Beyond serving local patrons with a full front and back of the house student-staff, Paso Robles High's Culinary Arts program partners with local vendors, food banks, and non-profits in a variety of successful programs including: Meals on Wheels, banquet catering, and district-wide food service. More specifically, taking advantage of internal expertise, students coordinate with district food service directors and staff to supply sixteen other school sites in the Paso Robles School District area (6 elementary schools, two middle schools, and one high school), totaling 6,500 students and serving roughly 3,100 meals daily. Rod Blackner, the Director of Food Service and Culinary Arts Programs also serves as the lead for the school's Child Nutrition Program. Coordinating these efforts has been paramount to the program's success. In addition, through focused professional networking, the Academy has secured the assistance of a local classically-trained and accredited Executive Chef to coordinate curriculum and teach restaurant-style cooking techniques and management, while partnering with farmers to feature local produce. Paso Robles High School's comingled approach with both external and internal stakeholders has successfully engaged the larger community in its sustained future.

4. Multifaceted Funding

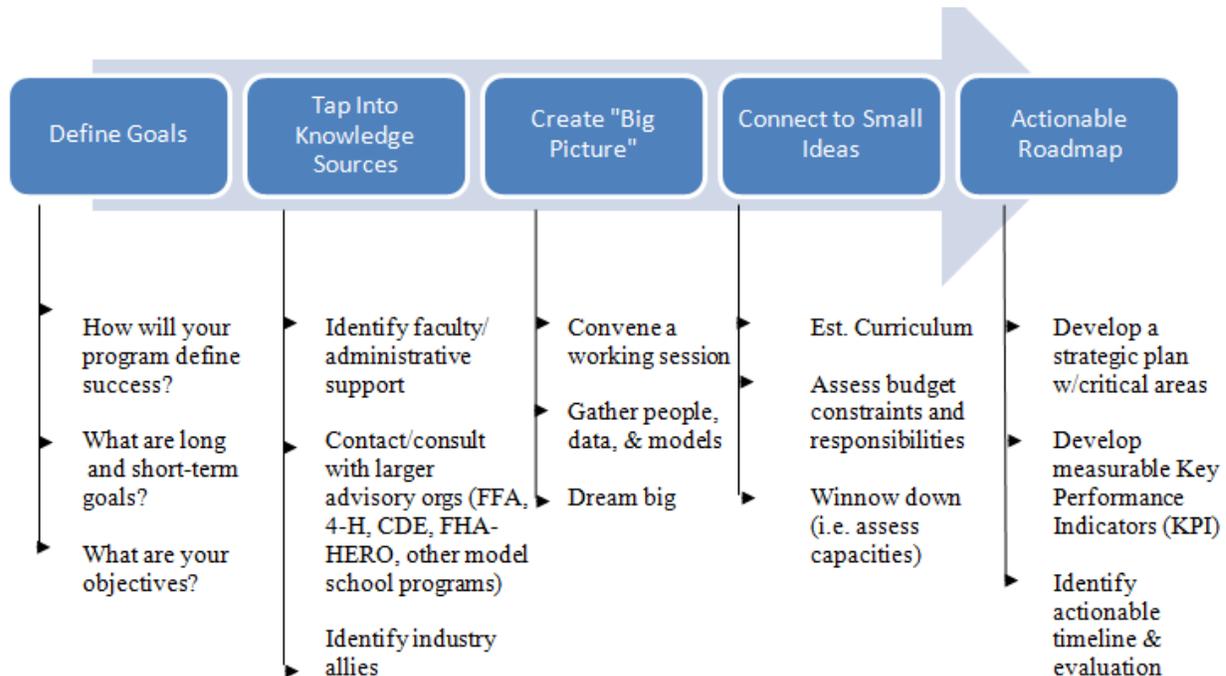
Culinary Arts/Food Service CTE--Vintage High School (Napa, CA)

Capturing multiple funding sources, Vintage High School's Culinary Arts is part of a larger Career Pathway ROCP with the Napa County Office of Education. Beyond traditional funding sources for CTE programs (Carl Perkins federal funds, California Career Technical Education Incentive Grants and district ROP funds) Vintage High has pursued additional grants for culinary arts specific training, facilities and certifications. More specifically, the program has partnered with Napa Valley College for a small business development grant to fund the development of a commercial kitchen for classes and off-site catering students take part in eight to ten times a year. Furthermore, high school staff and administration have taken it upon themselves to privately fundraise for a school garden utilized by Culinary Arts students in providing seasonal whole uncut produce on a student-run food cart. All of these sustainable funding sources allow students to participate in this career pathway at no cost and in the process earn professional food certifications.

Strategic Planning – Opportunities for Expansion

For administrators and faculty interested in implementing a new CTE program, we encourage incorporating the aforementioned critical areas as the foundation for developing program goals and a subsequent strategic plan. Beyond these critical areas, those CTE programs that have been deemed most successful in this report share one last significant commonality: they were bred out of and continue to function with the assistance of a strategic plan. Strategic planning is important to any organization because it provides a sense of direction and outlines measurable goals. Just as commercial businesses must respond to the changing needs of their shareholders/customers, CTE programs should also be reactive, in function and design, to the needs of their students and their stakeholders. In order to make the most of strategic planning, school administrators and faculty should give careful thought to the development of objectives and goals, provide an actionable roadmap for the program to follow, and then back up these goals with realistic, thoroughly researched, quantifiable benchmarks for evaluating programmatic success.

Strategic planning starts with defining the program’s mission and goals; these facets synthesize and distill the overarching ideas, linking “big picture” concepts to practical strategies and specific actions. These all must follow a clearly defined organizational vision and direction. Following from this process, a strategic plan should include an actionable roadmap with measurable goals, known as Key Performance Indicators (KPIs). KPIs set specific, concrete objectives expressed in terms of quantifiable outcomes that are measurable and adhere to an established timeline. The following chart outlines this important preliminary process of strategic planning, which includes the following steps: defining the program’s goals and strategies, tapping into knowledge sources, connecting the “big picture” to small ideas, and developing an actionable roadmap to success. All successful CTE programs have used some form of this foundational planning when determining next steps for their programs.

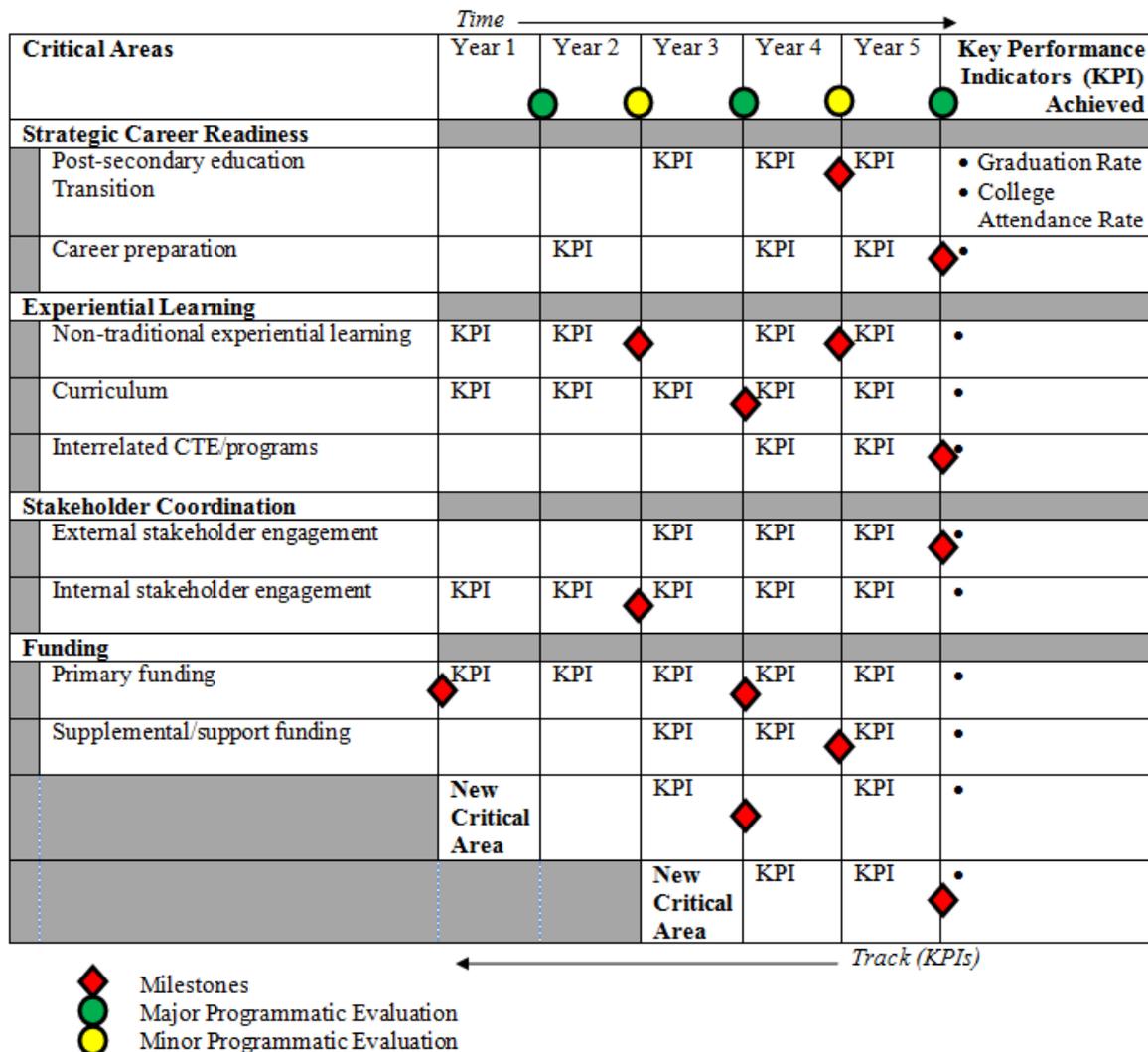


Following this preliminary planning process, successful CTE programs translate critical areas identified as necessary for success, into an actionable timeline with KPIs/milestones to measure success and opportunities to evaluate current practices. The following table represents an example of how faculty may implement their strategic plan using an actionable timeline.²⁷ The left side of the chart posits areas this report has identified as critical to the success of any CTE program (which include strategic career readiness, experiential learning, stakeholder coordination, and funding). Under each heading, we have operationalized these criteria; for example, this report identifies that aiding the transition into post-secondary education is an important aspect of a successful CTE program. As a result of the preliminary planning process, we have identified that “graduation rates” and “college attendance rates” of program alumni are KPIs that best measure if the program has aided this transition.²⁸ As the program continues across the years, we continue to measure these corresponding KPIs to assess programmatic success. In the chart, only in those years that our CTE students achieved high graduation and high college attendance rates are demarcated with a KPI (see the “KPI” in the chart). As your program matures, you

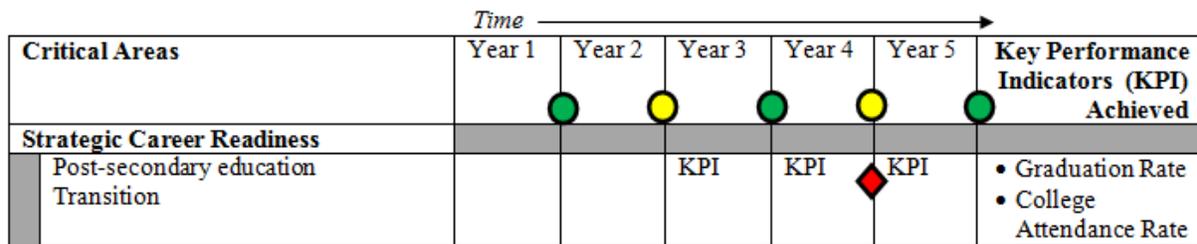
²⁷ This model is in no means the only way in which to develop an actionable timeline. Each program must determine what critical areas are necessary for their success and the corresponding KPIs/milestones and opportunities for evaluation.

²⁸ Programs may personalize KPIs based upon the makeup of the needs of the student body and related factors.

may find it necessary to develop new critical areas and related KPIs (see the bottom of the chart).

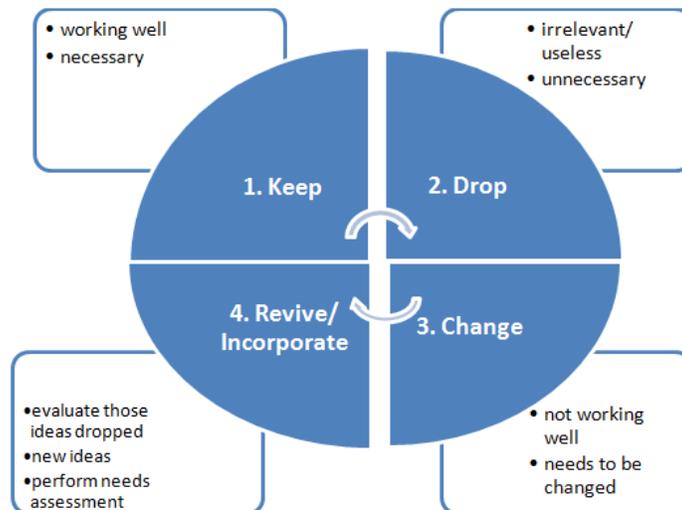


Successful programs however, do not simply measure if their KPIs are met on an annual or semester basis—they also strive to achieve long-term milestones. For example, with respect to easing post-secondary education transitions, a CTE program may set a milestone striving for 90% of the students currently enrolled in the program will graduate within four years (see the milestone marker: ◆ in the excerpt from the model below). Once that milestone is achieved, faculty and administration can choose to come together to reassess their practices and set another milestone to be achieved in the future.



Finally, strategic planning is typically based on the most available information at the time and realistic assessments of what your program can achieve. Successful CTE programs benefit from building a stage into the strategic planning process that involves evaluating progress after an elapsed period of time in light of the program’s success and accommodating any developments that have arisen in the interim. For example, if you plan to grow your program enrollment by 20 percent over three years, but the economic climate leads to programmatic budget cuts, it is likely necessary to redefine your program’s objectives and evaluate progress in terms of preserving necessary equipment to accommodate current and projected enrollment figures. These are done through a series of minor and major programmatic evaluations as seen above (minor evaluations are marked with a ; major evaluations are marked with a ). The pace with which you choose to evaluate is at the discretion of each program coordinator and will likely vary based on needs and external events, like budget constraints. Throughout this evaluative process, it is helpful to ask four basic programmatic questions identified in the graph below:

1. What should be kept?
2. What should be dropped?
3. What needs to be changed?
4. What should be revived or newly incorporate?



In following these steps, the program and its guiding strategic plan can adapt to the needs of the time and ensure future success. Most importantly, administrators and faculty must decide if the strategic planning process is a tool to improve student achievement and contributes to CTE program’s sustained success. If so, strategic planning should be embraced as an important method to develop a focused vision met with consistent monitoring and evaluation.

Next Steps & Final Thoughts

California Agricultural and Culinary Arts/Food Service Career Technical Education programs have an extensive legacy of developing career-ready and college-ready students. Following the best practices

and listed above, it is the intention that this report be used as a roadmap for newly established agricultural and culinary arts/food service CTE programs; the currently successful programs highlighted above can be used as models to be applied across the State in the interest of strengthening current programs and inspiring future endeavors.

With all success stories aside, administrators and teachers working to develop new programs should be aware of the challenges they may face (limited and unstable funding, administrative/student “buy-in”, inapplicable curricula, and unsustainable growth). The best practices included in this report can be used as opportunities to combat these issues, and simultaneously raise the profile of agricultural and culinary arts/food service CTE in their schools and communities.

To summarize, the following four critical areas and subsequent descriptors serve as action steps for administrators and faculty to improve upon existing or build a foundation for successful agricultural and culinary arts/food service CTE programs:

1. Comprehensive Strategic Career Readiness

- Support transitions to post-secondary education
 - Promote individualized career and education plans using counseling/career services
 - Incorporate interdisciplinary curriculum with related subfields
 - Ex: business, mathematics, science, sociology
 - Coordinate articulation agreements with local post-secondary education institutes and trade schools
 - Offer curriculum sequenced with post-secondary institutions for higher education credit
- Encourage post-secondary education *and* career preparation
 - Offer technical skill certifications
 - Ex: ServSafe Food Handler Certificates
 - Build upon academia with practical professional knowledge
 - Ex: menu pricing, food safety guidelines, farm pricing/management, pest management

2. External Experience: Beyond “Experiential Learning”

- Explore non-traditional experiential learning opportunities
 - Enter individual/team student competitions—County/State Fair, FHA-HERO, ProStart
 - Coordinate site visits and host industry seminars
 - Partner with unlikely industry professionals, nonprofits, and advocacy partners
- Develop rigorous, sequenced, and flexible curriculum to supplement experiential learning
- Emphasize interrelated curriculum and programs
 - Expand interdisciplinary learning opportunities
 - Utilize school gardens, tasting menus, student-run stores/food carts

3. Communication/Coordination with Stakeholders

- Leverage knowledge and experience of stakeholders (external *and* internal)
 - Tap into resource centers for internship placements, lectures, etc.
 - Explore learning opportunities with non-traditional partners
 - Ex: Food service directors, food service staff, district producers/distributors, school administration
- Develop CTE professional networks and promote staff/teacher development

- Use experiential learning opportunities (competitions, lectures, etc.) to build faculty and student networking opportunities
- Use existing participating students as well-versed recruiters
- Coordinate activities with Regional Occupation Centers and Programs (ROCPs)/district

4. Multifaceted Funding

- Seek supplemental and sustainable funding sources
 - Seek out non-traditional funding sources
 - Ex: nonprofits, private institutions, state-wide or national industry organizations or representatives
 - Coordinate district-wide activities with additional school contributions to minimize concentrated, individualized costs
 - Cooperative services and Regional Occupation Centers and Programs (ROCPs)
- Work with, *not within*, resource constraints
 - Encourage community participation and seek financial self-sufficiency
 - Ex: private fundraising, auction sales, student-run stores, restaurants, catering services, community-supported agriculture, school farms etc.

It is clear that career technical education is a fundamental building block in the continuous and evolving mission to develop well-rounded, prepared students. Bringing all stakeholders, teachers, administrators, state representatives, local agencies and non-profits, to the table is the most progressive step we can take to secure the State's future in this regard. If we can properly harness our immense resources, knowledge and experiences to improve current CTE programs and inspire the development of new ones, we can significantly contribute to a prolonged competent and competitive workforce for California.

Appendix A: Overview of California’s Career and Technical Education (CTE) System

As of January 2014, over half a million students or 38.1% of all students (grades 9-12) in California are enrolled in Career and Technical Education (CTE) courses annually.²⁹ California has identified fifteen industry sectors specific to the state economy, which are part of larger “Career Clusters” included in national the Career Technical Education (CTE) program

- Agriculture and Natural Resources
- Arts, Media and Entertainment
- Building and Construction Trades
- Business and Finance
- Education, Child Development and Family Services
- Energy, Environment and Utilities
- Engineering and Architecture
- Fashion and Interior Design
- Health Science and Medical Technology
- Hospitality, Tourism and Recreation
- Information and Communication Technologies
- Manufacturing and Product Development
- Marketing, Sales and Service
- Public Services
- Transportation

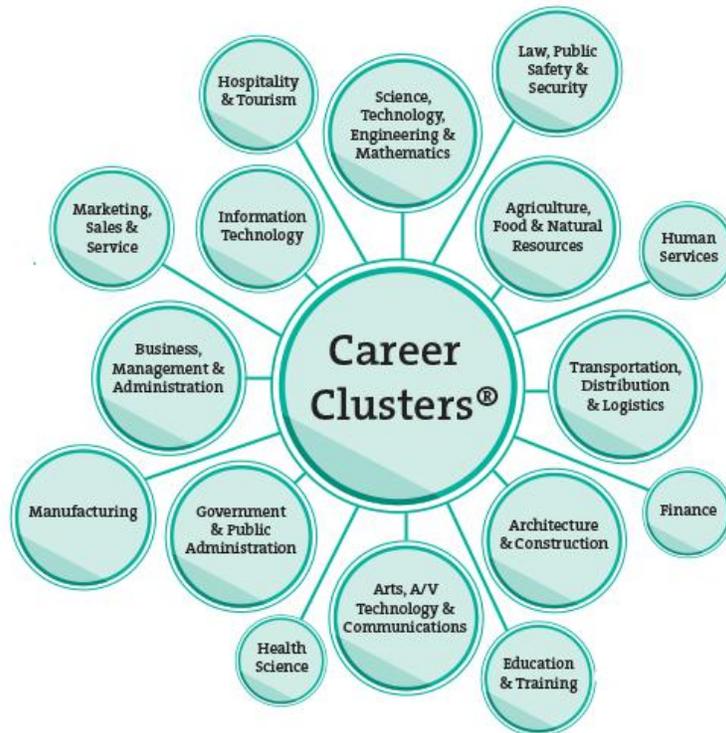


Figure 1: National CTE Career Clusters
(Association for Career and Technical Education (ACTE) National Survey)

Each industry sector contains a number of more specific career pathways (58 in total) that are aligned to current and emerging California employment opportunities and are adopted, with corresponding

²⁹ National Center for Education Statistics. (2014). Career/Technical Education Statistics. <http://nces.ed.gov/surveys/ctes/>

curriculum and standards, by the State Board of Education and the California Department of Education. The new state standards that govern each career pathway as of January 2013 were created with input from more than 300 representatives (business and industry, labor, and postsecondary and secondary education), integrate the Common Core State Standards, and include Science, Technology, Engineering, Mathematics (STEM)-focused academic disciplines.³⁰ These pathways integrate rigorous academic instruction with demanding technical curricula and field-based learning.

Funding and Implementation

In order to effectively implement Career Pathways, California has adopted a series of mechanisms to support CTE programs including both policies and funding mechanisms.

CTE Programs are fundamentally supported with federal, state and private/local funds. The Carl D. Perkins Career and Technical Education Act of 1998 provides an increased focus on the academic achievement of career and technical education students, strengthens the connections between secondary and postsecondary education, and improves state and local accountability.³¹ Reauthorized in 2006, Perkins funding provides \$1.3 billion in federal support for CTE programs nationally; California received \$113,295,476 in 2013-2014, accounting for 92% of total funding for CTE programs.³² Additionally, the State's annual budget provides for financial support of categorical CTE programs and CTE Incentive Grants to State school sites (Senate Bill 813, 1983), roughly \$250,000,000 in the 2013/14-2015/16 fiscal years.³³ Furthermore, local investments by county/municipal governments and school districts supplement this funding with local dollars and grants for CTE programs.³⁴

³⁰ California State Board of Education, Board of Governors of the California Community Colleges. (2008). California State Plan for Career Technical Education. http://www.wested.org/wp-content/files_mf/1399075231CA5YearStatePlan.pdf

³¹ National Association of State Directors of Career Technical Education Consortium (2010). <http://www.careertech.org/>

³² ASCTE (2013). CTE Works National Survey. https://www.acteonline.org/uploadedFiles/Assets_and_Documents/Global/files/CTE_Info/Research/2014_NRCCU_A_ACTE_Research_Report_Final.pdf

³³ Issac, D. & North, W. (2013). "The Budget and CTE: Where do we go from here?" PowerPoint. http://asccc.org/sites/default/files/THE%20BUDGET%20AND%20CTE.rev2_.ppt

³⁴ It is important to note that culinary arts, nutrition education, hospitality and agricultural education CTE programs have individualized funding structures that may vary dramatically.

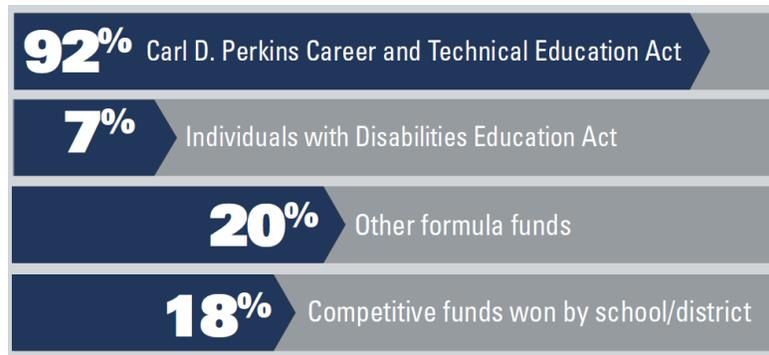


Figure 2: CTE Funding Streams
(Association for Career and Technical Education National Survey)

California to directly implements CTE programs and corresponding Career Clusters/Pathways using career academies, magnet schools, charter schools, and Regional Occupational Centers and Programs (ROCPs). ROCPs, a unique part of the California CTE system, provide career and workforce preparation for high school students and adults in a variety of places, from high school campuses to actual workplaces. They typically, operate under three different formats: (1) Joint Power Agreements comprised of two or more school districts, (2) school districts participating in a County Board of Education-run ROCP, or (3) a single school district. More recently, the State has adopted a policy to integrate Career Pathways into the Five Year California State Plan for Career Technical Education approved in March 2008 by the State Board of Education and the Board of Governors of the California Community Colleges.³⁵ In addition, the State has passed a resolution in support of Career Clusters, Assembly Continuing Resolution 119 (Muratsuchi, 2014). California’s varied delivery system and funding mechanisms for CTE program and curriculum provide for its State-wide success.

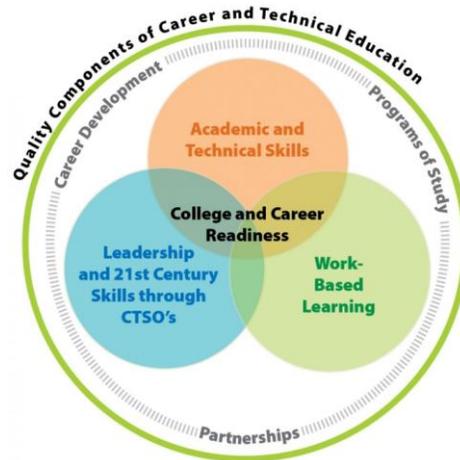
Advantages of CTE Programs

CTE programs enhance core academic, employability, and job-specific technical skills related to specific career pathways. These career pursuits frequently lead to degrees, industry-recognized certifications and apprenticeships, and contribute to a well-prepared, adaptable and competitive workforce. Research suggests that high school students involved in CTE are “more engaged, better performing, and graduate at higher rates than traditional academic program participants (the average high school graduation rate for students concentrating in CTE programs is 90.18% compared to their non-participatory counterpart’s rate of 70%).³⁶ Additionally, CTE programs foster advanced education completion by providing postsecondary educational credit and material that are articulated into the “A-G” requirements for the California University system. Finally, beyond the educational and experiential

³⁵ California State Board of Education, Board of Governors of the California Community Colleges. (2008). California State Plan for Career Technical Education. http://www.wested.org/wp-content/files_mf/1399075231CA5YearStatePlan.pdf

³⁶ National Association of State Directors of Career Technical Education Consortium. (2014). “CTE at a glance.” <http://www.careertech.org/career-technical-education/glance.html>

benefit to high school and college students, CTE yields large returns for the State’s economy. Reports by the Association for Career and Technical Education show that for example, in Washington State, every dollar invested in secondary CTE programs, the State earns \$9 in revenues and benefits. Likewise, in Connecticut, the State’s economy receives \$5 billion annually from income from their investment in community college CTE programs.³⁷ With a larger student population than both aforementioned states, California’s return on CTE investment is potentially even more lucrative.



³⁷ Association for Career & Technical Education. (2014). *CTE Today*. <https://www.acteonline.org/cte/#.U4Zek5hOW70>

Appendix B: Interview Questions

Agricultural Education

Logistics

1. Please provide a breakdown of your current curriculum.
2. Typically how many students are in your program?
3. Do you have connections to program alumni?
4. Do you have any information about graduation rates?
5. How long has an agricultural education program been in place at your school-site?
6. Are you a part of a larger FFA chapter or Ag-specific ROP?
7. Are you part of a larger career pathways program?

Career readiness

8. Do you have any matriculation agreements or credits that transfer to local or state community/private/public colleges?
9. Is there a math/business perspective included in your program (i.e. cost estimates, economic factors, sale negotiations, etc.)?
10. Is there a career modeling perspective (i.e. resume/cover letter writing workshops, connection to beginning farmer and rancher programs/master gardener program)?
11. Is there an industry component to your program (i.e. connecting students to internship opportunities, industry guest speakers, farm tours, community gardens, etc)?
12. Do you provide assist in internship placement opportunities for your students?

Funding

13. Is there a fee to participate for students?
14. Please identify your funding sources (i.e. private funding, Perkins, CTE grants, district funding, etc. and generally—don't worry about including specific amounts)

Additional Information:

15. Do your students compete in state-wide or local competitions (animal husbandry, leadership, etc.)?
16. Is there overlap with corresponding High School department/programs—woodshop, nutrition/health, science, mathematics, culinary/hospitality, communications/English?
17. Does your program work with a school/community garden/working farm or is the program more animal-husbandry based?
18. Is there an agriculture policy component to your program?
19. What do you believe makes your program particularly successful?

Culinary Arts/Food Service Education

1. Please explain the course work offered and the skills/knowledge endowed to your students in each course.
2. How many students do you have currently/typically enrolled? Is there recruiting in local junior highs or among underclassmen?
3. Is the program part of an ROP or a career pathway program?
4. How long has the program existed at your school?
5. Do you partner with local restaurants, farmers/ranchers/processors, small businesses?

6. Do you work with or have impact on menu options or food procurement and preparation policies at your school?
7. Does your program have any work in catering, developing tasting menus, school-run restaurant?
8. How long does your program run? (two courses, 2 years?)
9. Are there course costs incurred by students?
10. Do you have on-site kitchen facilities?
11. Do you partner with non-profits or advocacy organizations?
12. Do you offer internships, any food handling safe serve certification opportunities, career development work (resume workshops, menu pricing, tours, work with community colleges or culinary schools etc.)?
13. What competitive extracurricular activities does the program/class compete in, if any? (i.e. afterschool clubs, mentoring experiences, school/community gardening, Prostart, FHA-HERO)
14. Do your students have exposure to local, state, federal or international food politics and policies?
14. Do your students have exposure to local, state, federal or international food politics and policies?
15. What are your funding sources? (Perkins, Career Technical Education Incentive Grants, ROP, Private Contributors)
16. Please include anything else that you believe makes your program unique or successful?