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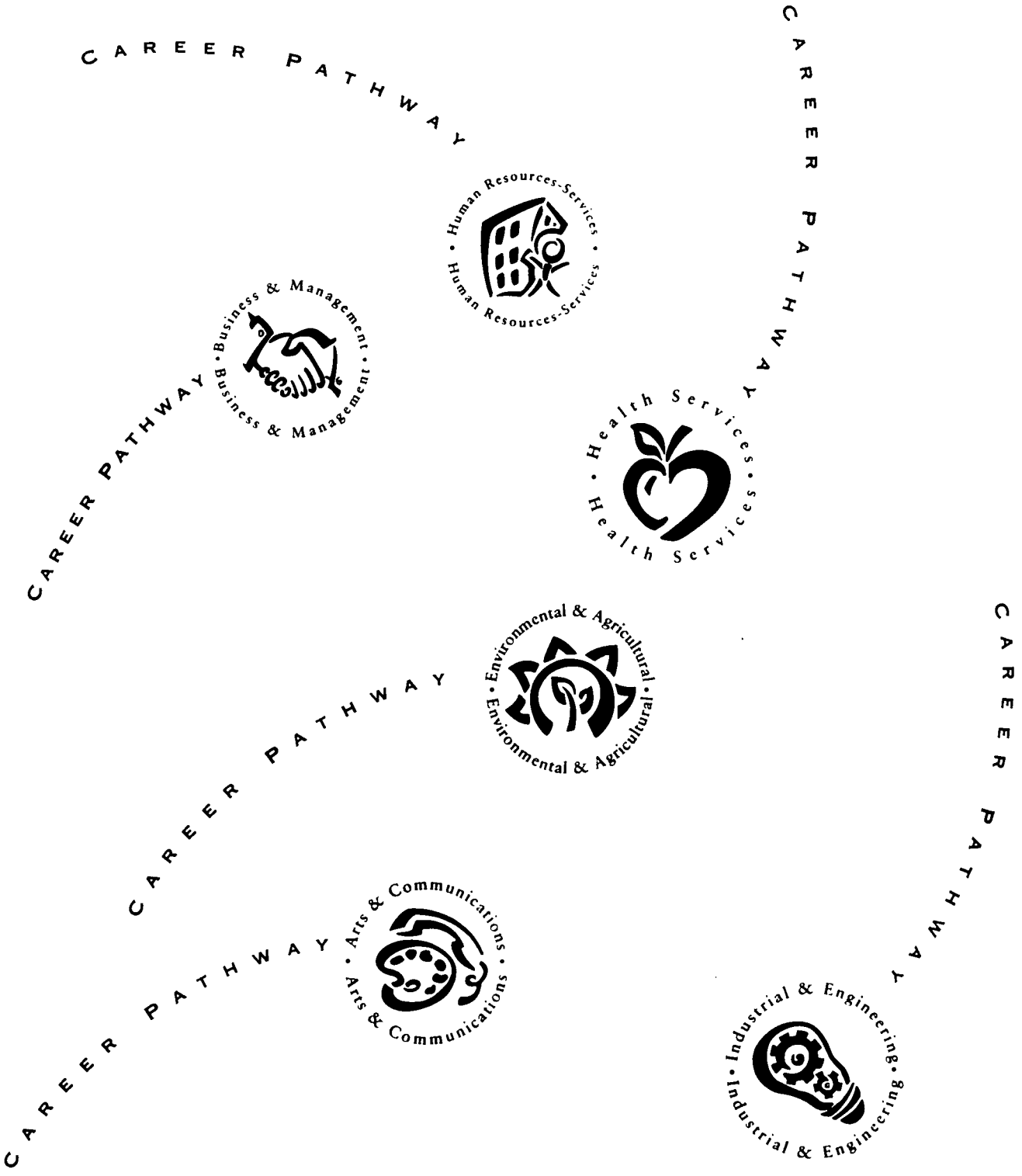
ABSTRACT

This implementation guide for Career Pathways (an Ohio educational plan linking academic, technological, and occupational course work and other educational experiences, leading to a career specialty) is a resource for leaders planning and implementing career pathways in vocational education planning districts and school districts. The document outlines the rationale, definitions, processes, guidelines, and criteria for career pathways. It also identifies curricula and instruction criteria and funding implications. In addition, the guide describes delivery options for the Career Pathways plan. (Contains 13 references and 11 Web sites.) (KC)

CAREER PATHWAYS IMPLEMENTATION GUIDE

FOR OHIO'S CAREER-FOCUSED EDUCATION SYSTEM



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Career-Technical and Adult Education will provide quality programs and services to meet the lifelong career education needs of Ohio's youth and adults, as well as the ever-changing demands of the present and future workplace.

Ohio's Future at Work: Beyond 2000

Purpose of the Guide

The Career Pathways Implementation Guide:

- is a resource for those leaders planning and implementing career path ways in vocational education planning districts and school districts.
- outlines the rationale, definitions, processes, guidelines, and criteria for career pathways.
- identifies curricula and instruction criteria and funding implications.
- describes delivery options.

Introduction

Ohio's Future at Work: Beyond 2000—the strategic plan for vocational education that reflects changing world realities, higher expectations, and new priorities—emphasizes the importance of career-focused education for all learners. Career-focused education ensures that all individuals possess the

- skills needed to compete in the global marketplace;
- credentials based on industry standards;
- capabilities needed to successfully enter, compete in, and advance through the present and future workforce; and
- knowledge and skills for lifelong learning.

To meet new and higher expectations, career-technical and adult education has identified four priorities that will guide program development, decision making, and resource allocation. They are:

Priority #1: Expand options for achieving career and education goals.

Priority #2: Strengthen teaching and learning.

Priority #3: Enhance communication and collaboration with all stakeholders.

Priority #4: Ensure a culture of continuous improvement and innovation.

Expanding options for all learners requires new ways of thinking, working, and funding in regard to our current educational systems. One of the ways to address these new options is through the development of career pathways.

A career pathway is defined as a series of academic, technological, and occupational coursework and other educational experiences leading to a career specialty. The career pathway concept supports development of a continuum of career-focused programs providing multiple pathways to employment and postsecondary education.

A career pathway is defined as a series of academic, technological, and occupational coursework and other educational experiences leading to a career specialty.

Rationale for Career Pathways

- All students need rigorous academics as well as technical skills to be prepared for both postsecondary education and for careers. We can no longer afford to educate some students for college and other students for careers, with little overlap between the two groups. Career pathways give students "permission" to choose a plan incorporating both goals.

- Rapidly changing job markets and new technologies require individuals to have broad-based. transferable skills. Individuals need to continuously update their technical knowledge and skill base to remain competitive in the workforce. Career pathways provide academic foundations and a broad base of transferable skills to respond to this dynamic market.

Career pathways will:

1. *help students make better informed career decisions;*
2. *align curriculum and instruction with a career focus; and*
3. *enable students to choose courses and experiences within six career clusters that will help them achieve their career goals.*

- All students need thinking and interpersonal skills for workplace success. The changing workplace requires people to have increased skills in interpersonal relationships, communications, conflict management, problem solving, critical thinking, adaptation to change, and teamwork. Career pathways integrate curriculum across technical, academic, and employability competencies.

- Developments in the field of cognitive science have revealed much about how people learn. Meaningful learning takes place when instruction provides a real-life context. Curricula for academic and technical courses within a career pathway can provide important workplace contexts that deepen student understanding of both the academic and technical content being taught and enrich the learning process.

- Changes in school delivery such as block scheduling, team teaching, project-based learning, community experiences, and legislation such as Senate Bill 55 have provided new opportunities and heightened expectations of schools to improve student learning. Career pathways are flexible and responsive to meet new delivery structures and increased graduation requirements.

Career pathways will result in new courses, new structures for existing courses, and new opportunities for students in grades 9 through 12, as well as seamless connections with postsecondary education and between existing vocational programs including Tech Prep and apprenticeships. Collaboration will occur among all education partners—including comprehensive schools, career centers, and postsecondary institutions—and other career-focused initiatives—including School-To-Work, career development, and career-based intervention programs.

Critical Components of Career Pathway Designs

Career pathways designs include:

- career cluster organization and delivery resulting in inter- and intra-disciplinary practices and integration;

- the delivery of core, cluster, and specialization competencies and, as appropriate, adherence to industry standards;
- curriculum maps with a plan for depicting the career pathways by grade level from 9 through 12, postsecondary linkages, school-based and work-based activities, and content integration;
- high academic expectations for all students;
- flexible entry and exit points with
  a) exit points at high school, postsecondary education, apprenticeships, and higher education
  b) multiple focus—students are prepared to go to work and/or continue their education;
- relevant business, industry, and labor linkages;
- connection to and collaboration with related initiatives (i.e., Tech Prep, School-To-Work, Career Development, High Schools That Work, JOG);
- extensive collaboration between teachers (vocational and academic) resulting in integrated and developmentally appropriate curriculum and instruction;
- flexibility in school organization and staffing patterns;
- teacher externships and student internships;
- vocational student organization (VSO) opportunities;
- increased participation of underrepresented populations;
- appropriate student/teacher ratio to be effective;
- performance targets including, but not limited to, increased enrollment in career-focused programs, placement in related occupations, and enrollment in postsecondary education;

Critical Components

- cluster organization
- inter- and intra-disciplinary practices
- competencies/ industry standards
- curriculum maps
- high academic expectations
- flexible entry and exit points
- linkages
- related initiatives
- collaboration
- externships/ internships
- VSOs
- underrepresented populations
- student/teacher ratio
- performance targets
- professional development
- continuous improvement
- contextual learning
- flexible scheduling

- extensive professional development for all partners;
- continuous improvement strategies to assess impact, establish new directions, and assure quality;
- time for partners/educators to collaborate and plan instruction for contextual learning environments, course integration, project-based learning, and team teaching; and
- flexible scheduling and block time schedules to accommodate various learning and teaching methods and student learning rates.

Curricula Criteria

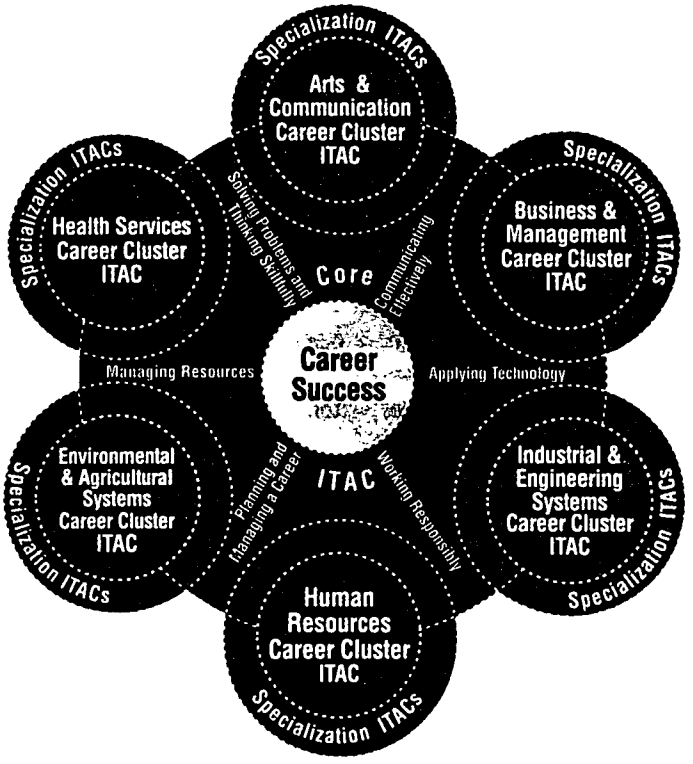
Career Pathways Curriculum Criteria

- articulated
- integrated
- achievement oriented
- contextualized
- designed for flexibility

Given the challenges of the present and future workforce and the skills needed for success in the workplace, curricula for career pathways must meet several criteria. Curricula and instruction must be

- well-articulated to provide a continuum of career-focused education;
- integrated to include the academic, technical, and employability skills needed for workplace success;
- supportive of student achievement and a high level of academic success;
- contextualized to enhance meaningful learning; and
- designed to allow program flexibility while ensuring that students develop skills needed to compete in the global marketplace.

The Integrated Technical and Academic Competencies (ITAC) are a response to these criteria. The ITAC Model (next page) describes a continuum of career-focused competencies for students in grades 9 through higher education levels that integrates academic, technical, and employability skills.



Three different types of competencies are included in the model:

1) Core Competencies

Core Competencies represent what students should know and be able to do in the world of work, including the ability to make career decisions. These competencies support graduation from high school as well as success in higher education.

2) Career Cluster Competencies

Career Cluster Competencies consist of the foundational competencies common to related occupations or industries and sample work-related scenarios. The six cluster ITACs provide a broad foundation for entry level, technical, and professional careers.

3) Specialization Competencies

Specialization Competencies are those competencies needed in specific occupations, as verified by business and industry. The attainment of these competencies could lead to entry-level positions, exit credentialing, and/or continued education.

Ohio's career pathways and curricula are organized into six career cluster areas:

Arts and Communications

Business and Management

Environmental and Agricultural Systems

Health Services

Human Resources/ Services

Industrial and Engineering Systems

Arts and Communications

This cluster includes the entry-, technical-, and professional-level career options within the performing, visual, written, and media arts. This cluster includes but is not limited to the following industries: theater, film, mass media, journalism, literature, fine arts, TV/radio broadcasting, advertising, public relations, graphic design, printing/publishing, telecommunications, and technical writing. Sample career options include: actor/actress, cinematographer, sportswriter, interior designer, novelist, dancer, radio broadcast technician, TV camera operator, public relations consultant, graphic artist, printing press operator, fashion designer, audio/lighting technician, and technical writer.

Business and Management

This cluster encompasses the entry-, technical-, and professional—level careers within the world of business, management, and marketing. Students may major in at least one of the following areas: banking and finance, accounting, administration and management, marketing, administrative support, computer information systems, information technology, travel and tourism, retail management, culinary and food service management, and distribution and warehousing. Sample career options include: computer analyst, accountant, sales representative, loan officer, network administrator, marketing director, web page designer, chef, hotel food service manager, administrative assistant, purchasing agent, travel agent, and small business owner.

Environmental and Agricultural Systems

This cluster includes the entry, technical, and professional-level careers within environmental and agricultural industries. This cluster includes careers related to service, research, education, and production. Numerous career opportunities exist in agricultural sales and services, animal and crop production, education, engineering and mechanical systems, food processing, horticulture, and natural resources. Sample career options include: feed, fertilizer and equipment salesperson; water quality technician; animal nutritionist; biosystems engineer; landscape architect; floral designer; park ranger; wildlife biologist; pork producer; veterinarian; animal groomer; golf course supervisor; foods inspector; and extension agent.

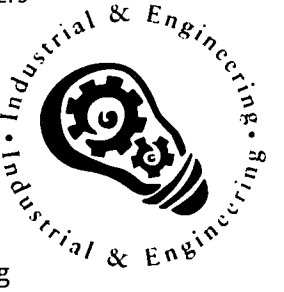
Health Services

This cluster includes the entry-, technical-, and professional-level careers within the health services industry. This cluster includes service, research, education and manufacturing areas of the health industry. Many career opportunities exist within medicine. dentistry, nursing, radiology, optometry, nutrition, biotechnology, physical therapy, occupational therapy, rehabilitation, and prevention and wellness. Sample career options include: family practitioner, surgical technician, ophthalmic technician, orthodontist, renal dialysis technician, ultrasound technician, dietitian, respiratory therapist, chiropractor, medical technologist, and nurse practitioner.

Human Resources/Services

This cluster includes the entry-, technical-, and professional-level career options within a variety of industries related to economic, political, and social systems. These industries encompass personal, protective, legal, educational, and children's and family services. Sample career options within these industries include: corrections officer, law enforcement officer, paralegal, attorney, social worker, psychologist, chemical dependency counselor, early childhood education teacher, elementary and secondary school teacher, cosmetologist, barber and clergy member.

Industrial and Engineering Systems



This cluster includes the entry-, technical-, and professional-level careers within industrial and engineering-related fields. This cluster is divided into three subclusters: manufacturing, construction, and transportation. Each of these industries offers many career options depending upon the level of education and training desires. The manufacturing subcluster involves all aspects of the manufacturing industry, from product design to production and delivery. The construction subcluster includes all of the building trades (such as carpentry and technical work related to electrical, heating, ventilation and air conditioning systems) as well as engineering, architecture, and surveying. The transportation subcluster includes all aspects of the industry: automotive, airline, maritime, rail, and trucking. Career opportunities in these industries may be obtained through a variety of educational pathways such as vocational education, apprenticeships, on-the-job training, and programs at community colleges or universities. Sample career options within this cluster include: drafter, civil engineer, machinist, tool and die maker, production specialist, general contractor, airline maintenance mechanic, operating engineer, finish carpenter, residential electrician, locomotive engineer. automotive diagnostic technician, diesel mechanic, and trucking owner/operator.

Classroom Instruction Implications

ITACs can be found in resource documents and used to facilitate the process of integration—teachers working together across program areas and subject matter disciplines to create holistic instructional delivery with a work-focused context. ITACs can be used to develop integrated, work-focused projects and other learning activities.

Using these competencies when planning learning experiences helps focus integration on learning objectives identified by business and industry as being important to workplace success and fosters student development of these workplace competencies. These competencies also provide a framework for assessing student development of essential knowledge and skills over time. The core competencies are useful in documenting progress as part of an Individualized Career Plan or Career Passport. Activities of vocational student organizations also can foster competency attainment.

Project-based learning is a teaching method that engages students in projects that allow them to demonstrate their knowledge and skills. Projects are complex tasks that require students to plan, organize, or create a product or event. By working on projects, students have the opportunity to function just as they would in a high-performance workplace. The project serves as a framework for all other learning experiences. For teachers, project-based learning means making connections to traditional subject areas and weaving projects into existing courses through collaboration with other disciplines. For example, a team of social studies, language arts, and family and consumer sciences teachers serving 9th-grade students might design the following project:

> Working with a small group, use reference materials to create a slide presentation that correlates the histories of local businesses and industries to historical events in the United States.

Learning experiences for this project may include lessons on practicing teamwork, understanding history, developing slide presentations, and using reference materials. The project may coordinate with a worksite learning experience, such as job shadowing. Students can interview employers about the history of local businesses and industries. Field trips can be planned to local business and industry sites. Such a project introduces some rigorous academic content in history and provides opportunities for practice and assessment of several core competencies.

Connections of Career Pathways to Other Education Initiatives

In an era of higher expectations of students, demands for program flexibility, requirements for increased accountability, and the changing needs of the workforce, the models presented in this guide have considered the following:

- Current Vocational Programs
- Career Clusters
- *Ohio's Future at Work: Beyond 2000*
- Minimum Graduation Requirements (Senate Bill 55)
- Tech Prep
- High Schools That Work
- School-To-Work
- Career Development
- Early Implementors

Career pathways link initiatives into a comprehensive approach that makes sense to parents, students, educators, and others.

Consideration of these initiatives and the examination of best practices throughout the nation have resulted in the initial framework for pathways models.

What works in Columbus may not work in Plain City. What works in an urban district may not work in a joint vocational school district. What works for an agricultural education program may not work for an Automotive Service Excellence (ASE) program. What works in a high school of 1,500 may not work in a high school of 400. What works for the health services cluster may not work for the arts and communications cluster. The intent is to develop career pathways models and funding structures to accommodate the diverse situations in Ohio.

Current Vocational Programs

Vocational education programs are currently organized into six program areas:

Agricultural Education

Business Education

Health Occupations Education

Family and Consumer Sciences Education

Marketing Education

Trade and Industrial Education

Each vocational education program area has been organized into specific instructional areas. For example, Health Occupations Education programs are composed of courses such as dental assisting, medical laboratory assisting, and surgical technology. The Ohio Department of Education's website for Career-Technical and Adult Education provides current information for programs, course requirements, and funding information.

Career Clusters

A career cluster is a grouping of occupations from one or more industries that share common skill requirements. Career clusters provide a means of organizing academic and vocational programs. Students may be introduced to careers by cluster in the elementary grades, explore careers by cluster in the middle grades, and learn specific occupational skills in high school and beyond. The six broad career clusters identified in Ohio's June 1995 application for School-To-Work implementation federal funding and in the vocational education section of the proposed school standards are

Arts and Communications

Health Services

Business and Management

Human Resources/ Services

Environmental and Agricultural Systems

Industrial and Engineering Systems

Career clusters offer a systemic approach to integrating academic and vocational education by identifying related courses, providing teachers a common focus, enabling students to think about their career choices and high school courses through a contextual application, and linking with postsecondary programs in related career areas.

Ohio's Future at Work: Beyond 2000

The strategic plan for career-technical and adult education calls for broadening the traditional vocational education mission to include career-focused education opportunities and flexible career pathways. Specifically, the plan calls for developing models for organizing schools focused on career clusters, establishing innovative delivery structures, teaching specific occupational skills as well as broader career cluster concepts, and integrating academic and occupational competencies.

Career pathways connections to:

Current Vocational Programs

Career Clusters

Ohio's Future at Work: Beyond 2000

Minimum Graduation Requirements (Senate Bill 55)

Tech Prep

High Schools That Work

School-To-Work

Career Development

Early Implementors

Minimum Graduation Requirements (Senate Bill 55)

Amended Senate Bill 55, effective November 21, 1997, increases from 18 to 21 the total number of units required for graduation after September 15, 2001. It specifies additional units in English, math, science, social studies, and one (or two half units) of business/technology, fine arts, and/or foreign language. Two units of science will be required after September 15, 2002, increasing to three units after September 15, 2003.

The legislation allows a student below the 9th grade to earn high school credit toward the minimum graduation requirements. It also allows units earned in English, language arts, math, science, and social studies that are delivered through integrated academic and technical instruction to be counted toward graduation requirements.

Tech Prep

Tech Prep, a national education reform initiative, originated as part of the Carl D. Perkins Vocational and Applied Technology Education Act of 1990. Ohio's program, a partnership among business, industry, labor, high school, and higher education, is a primary strategy for systemic educational change in Ohio that prepares students for occupations of the future. Under the leadership of the Ohio Department of Education, Division of Career-Technical and Adult Education and the Ohio Board of Regents, the Tech Prep strategic plan includes providing a seamless education path; expanding Tech Prep enrollment; ensuring that teaching and learning reflects an applied, inquiry-based, problem-solving approach; and maximizing the opportunities afforded by all relevant initiatives, resources, and participating partners.

High Schools That Work

The Southern Regional Education Board's (SREB) High Schools That Work initiative is the nation's largest and fastest-growing effort to combine challenging academic courses and modern vocational studies to raise the achievement of high school students. The SREB-State Vocational Education Consortium, a partnership of states, school systems, and school sites, established the initiative in 1987.

High Schools That Work has grown from 28 pilot sites in 13 states to its current size of over 700 sites in 21 states (Alabama, Arkansas, Delaware, Florida, Georgia, Hawaii, Indiana, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Mississippi, North Carolina, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia and West Virginia). Ohio is now in the process of implementing several High Schools That Work sites in southwestern Ohio.

School-To-Work

The School-To-Work initiative in Ohio uses existing structures to meet wide-ranging student and employer needs. Programs and services are delivered through an integrated network that includes career-technical education and Tech Prep consortia. The system strives to meet the challenge of assuring improved, high-quality education and training opportunities for all learners. Whether the goal is immediate entry into the workforce after high school or the pursuit of higher education as a prelude to employment, all students can benefit from the integration of school-based and work-based learning experiences. Through partnerships of parents, educators, employers, labor leaders, and community members, the result of School-To-Work makes education more meaningful and relevant and supports flexible choices for realizing personal, career, and education goals.

Career Development

Ohio has the largest career development program in the nation, annually serving 1.8 million students. Since the 1960s and as guided by Ohio's Career Development Blueprint, the program has focused on classroom integration strategies for career awareness, exploration, and preparation of K-12 students. Program initiatives emphasize career information and assessment, the Individual Career Plan (grades 8 through 12), and Career Passports earned upon graduation.

Early Implementors

Through the guidance and resources of Venture Capital, School-To-Work, Tech Prep, vocational education, career development, and others, as well as the vision and tenacity of local leadership, a number of career cluster and pathway "early implementors" are operating programs. For example, business and marketing programs have expanded to three-year designs; industrial and engineering system foundation courses at the 9th and 10th grades are being piloted; districts have formed

Career pathways connections to:

Current Vocational Programs

Career Clusters

Ohio's Future at Work: Beyond 2000

Minimum Graduation Requirements (Senate Bill 55)

Tech Prep

High Schools That Work

School-To-Work

Career Development

Early Implementors

academies and schools within schools; Tech Prep consortia have strengthened curriculum and professional capacity; School-To-Work and Venture Capital have provided seed money to promote career-based programming; and family and consumer science programs have developed mentor components. The goal of this guide is to nurture, expand, and institutionalize these kinds of innovations.

Requirements for Delivery Models

Career pathways models are guided by the following:

1. All career pathways models must meet graduation requirements—current requirements and as mandated in Senate Bill 55. All students must master the basic skills necessary to pass proficiency tests and graduate from high school.

2. All academic and elective courses may have a three-fold goal:

    a. opportunity for career-focused context,

    b. preparation for postsecondary education, and

    c. requirement for graduation.

3. All career pathways curriculum model must incorporate core, cluster foundation, and specialization competencies (See Curricula Criteria and Classroom Instruction Implications sections of this guide).

4. All career pathway models (as organized by cluster) must include intensive specialized vocational programs and, where offered, Tech Prep programs. The models may include career cluster foundation courses or experiences and capstone opportunities.

5. Career pathways program materials for school personnel, students, and parents must include an outline of the coursework that prepares the students to enter into the workforce and continue their education. The Individual Career Plan (ICP) process is key to connecting career pathways opportunities with student career and educational goals.
The ICP and career pathways structures will help students, parents, and others to see the relationship of education to the world of work and to make relevant course selections.

6. All career pathways models must adhere to current education standards. Vocational education standard 3301-61-03, Criteria for Job-Training Programs (effective April 1, 1989) mandates that each school district shall provide, through an approved plan for vocational education, a minimum of 12 different vocational education job training offerings and 20 classes of vocational education under Chapter 3317 of the Revised Code. Under specific circumstances, 3301-61-06 provides alternatives for contractual agreements and 3301-61-09 provides an exemption process.

   In principle, the State Board of Education has approved new standards for Ohio's schools including a modification in 3301-61-03 to include cluster-based programs of at least 12 offerings and the deletion of the 20 class requirement. However, the revision process has not been concluded; therefore, the current standard prevails. An intensive specialized vocational program of at least 450 hours equates to one job-training program offering as specified in vocational education standard 3301-61-03.

7. Courses of study should include a scope and sequence outlining the major units of instruction and competencies addressed. This provides a resource for curriculum mapping and shows the integration of academic and vocational courses, the relationship of school to careers, and the opportunities for business- and industry-based credentials and further education. The competencies within the student's Career Passport are based on the competencies within the major units of instruction.

Tenets of Career Pathways

Industry breadth and depth. Pathways must encompass an entire industry or cluster area. For example, the environmental and agricultural systems cluster encompasses an entire industry, whereas horticulture is one possible area of specialization within this cluster.

Not limited to a specific population. The pathway must be inclusive and be able to serve many groups, including all academic tracks, gifted as well as special needs students, both genders, and diverse cultures. For example, the hospitality and tourism cluster should provide career opportunities for both special needs and gifted students.

Career options at entry, technical, and professional levels. Pathways must prepare students for multiple levels within industries and not just prepare students for a specific job within a pathway. For example, the industrial and engineering systems cluster should provide opportunities for students to progress from entry-level manufacturing jobs to skilled trades workers to professionals within the industry.

Alternative delivery options and academic and vocational integration. Pathways must go beyond the traditional college prep vs. vocational track. Alternative delivery options that integrate high level academics and vocational education include career academies, magnet schools, Tech Prep, High Schools That Work, and foundation and capstone experiences or courses.

Delivery Options

The very nature of career pathways requires alternative delivery options for students. Each of the options listed in this section has the dual mission of preparing students for careers and postsecondary education. All of these models emphasize core, cluster, and specialization competencies.

Career Academies

Commonly organized as schools-within-schools, career academies integrate academic and vocational competencies by career clusters. Academy students often choose to pursue a major, such as accounting within the business and management cluster or nursing within the health services cluster. Articulation agreements and strong business partnerships provide students with multiple options for continuing their academic and professional education. Academic and vocational teachers collaborate to provide integrated, contextualized instruction for a core group of students within the cluster.

Career Magnet High Schools

These schools, also known as urban magnets or occupational theme high schools, align all coursework around a specific industry or career cluster within a school for grades 9 -12. Career magnet schools typically offer highly specialized, state-of-the-art courses that are academically rigorous and technically challenging. These schools employ faculty directly from industry who develop intensive business/industry linkages that strengthen curriculum and provide rich field experiences for the students. Magnets require extensive collaboration between vocational and academic instructors so that all learning is relevant to the occupational area studied. Magnets usually have entrance requirements; students must meet or exceed attendance and performance standards and typically must successfully interview or audition for acceptance into the school.

High Schools That Work

High Schools That Work is a reform initiative that has two major goals: to raise the mathematics, science, communication, problem-solving and technical achievement of students: and to blend the essential content of traditional college-preparatory studies with quality vocational and technical studies by creating conditions that support school leaders, teachers, and counselors in carrying out key practices. Member schools implement ten key practices for changing what is expected of students, what they are taught, and how they are taught.

Career pathways delivery options:

Career Academies

Career Magnet High Schools

High Schools That Work

Tech Prep

Career Cluster Foundation Course

Career Cluster Capstone Course

Specialized Vocational Programs

Career pathways delivery options:

Career Academies

Career Magnet High Schools

High Schools That Work

Tech Prep

Career Cluster Foundation Course

Career Cluster Capstone Course

Specialized Vocational Programs

The ten key practices are

- high expectations;
- challenging vocational studies;
- academic studies that teach the essential concepts from the college preparatory curriculum;
- a program of study consisting of an upgraded academic core and a career major;
- work-based learning;
- teaming of academic and vocational teachers;
- students actively engaged;
- guidance involving student and parents;
- a system of extra help for students to complete an accelerated program that includes high-level academic and technical content; and
- using student assessment and program evaluation data.

SREB provides member states and sites with staff development, technical assistance, communications and publications, and assessment services. The annual High Schools That Work Summer Staff Development Conference is a focal point for year-round professional development.

Tech Prep

The Tech Prep model prepares students from grades 9 through 14 for both careers and post-secondary education. These programs emphasize careers that require at least an associate degree, demand high levels of math and science, and offer high wages. Tech Prep programs can be delivered within an existing high school, at a vocational school, or at a community college.

Career Cluster Foundation Course

A career cluster foundation course is a semester- or year-long course (or structured experience for credit) within a career cluster that provides core and cluster competencies as well as information on professional, technical, and entry-level career pathway possibilities within the career cluster.

Foundation courses are generally offered at the 9th- or 10th- grade level and can be a solid starting point for intensive specialized vocational and academic coursework at the 11th- and 12th- grade level.

Examples

- A year-long foundation course in Business Management can include core and cluster competencies in business and marketing fundamentals, economics, and information processing.
- A summer foundation experience in Industrial Engineering can include core and cluster competencies in manufacturing processes, blueprint reading, and CADD, and it can provide an overview of career opportunities within the field.
- For many clusters, the Family and Consumer Sciences Life Planning course and the Business and Management cluster foundation course can be an appropriate broad beginning experience.

Career Cluster Capstone Course

A career cluster capstone course is a structured experience that provides students the opportunity to tie together vocational and academic coursework in a way that is meaningful, experiential, and connected to the student's chosen career pathway. Generally offered at the 12th grade, a capstone experience could be a structured mentorship, senior project, or summer academy geared to the student's career interests and yielding a portfolio.

Career pathways delivery options:

Career Academies

Career Magnet High Schools

High Schools That Work

Tech Prep

Career Cluster Foundation Course

Career Cluster Capstone Course

Specialized Vocational Programs

Examples

- Senior projects: students choose projects of interest within their career pathways that cross academic and technical areas. Teachers work with the students across disciplines in a team concept. Senior projects typically involve extensive research, mentoring, and a student presentation of the project to peers and faculty.

- Summer academy for aspiring health care professionals: an academy experience between the junior and senior year that connects college-level math, science, and technical skills in health careers in partnership with area hospitals and medical/nursing schools.

Specialized Vocational Programs

Intensive specialized vocational programs include major units of instruction as determined by the industry-verified competency lists (Occupational Competency Analysis Profiles, Tech Prep Competency Profiles, Integrated Technical Academic Competencies), licensure or skill standards requirements, program design expectations, and school design and delivery. **An intensive specialized vocational program can be no less than 450 clock hours over the specified period of time determined by the design and delivery expectations.** A one-year, 150-minute laboratory is typically 450 hours. The 450 hour minimum requirement does not include the career cluster foundation course hours.

Competencies within intensive specialized vocational programs are identified and organized by major units of instruction. This organization supports student access to the program components according to career objectives. Program competencies are typically concentrated at the 11th and 12th grade but according to the specialization, delivery may extend to the 9th or 10th grade.

Funding

The demand for adequate and equitable funding, flexible vocational program designs incorporating career clusters and pathways, and greater accountability of resources created an opportunity for new programming and procedures. Using a weighted Average Daily Membership (ADM) approach for vocational programs, FY00 funding has been standardized for both comprehensive and joint vocational school districts. Upon program approval via a VE-26 form, funding is available for courses that are part of a coherent career pathway that leads to a career passport upon completion of the student's secondary school experience. Refer to the Ohio Department of Education, Division of Career-Technical and Adult Education website for EMIS information and program area leadership for technical assistance.

Sample Career Pathway Model

Wayne County Schools Career Center (WCSCC) has created a Business and Management Technology Academy. The Academy bases grades and credits on competency attainment rather than hours in class, integrates academic instruction into the technical courses and offers classes at a variety of times.

To promote the Academy's program, they have created and 8 1/2" x 14", 8-panel, full-color brochure. Below is a summary of the panels.

- A title panel states the name of the Academy and shows a student and teacher at a computer.

- Two panels entitled 'Tell me more about it...', describe who can enroll (secondary and adult students), what they learn and the experiences they will have, where the school is located, when classes are offered, and how students make an Individual Academy Plan.
  It states that grades and credits are determined by the number of skills and the level at which they are mastered.

  These panels also address two questions:

  'Can I go to college?', and

  'What about business courses I have already taken?'.

- A panel identifies the professional staff positions for the Academy and gives contact information.

- A panel poses 4 questions: 'Do you want...'

  'A new, exciting INNOVATIVE, and INDIVIDUALIZED method of learning?',

  'Instruction that accommodates your own pace, learning style and time schedule?',

  'To get out of the classroom and into the workplace sooner?', and

  'To learn the latest technologies for the workplace?',

  The panel also lists the nine majors of the Academy.

- Shown on the next page of this guide, three panels entitled 'Choose one of these Academy Careers!', identify entry-, technical-, and professional-level positions related to the nine majors.

For more information regarding the WCSCC Business and Technology Academy, contact Larry Hickman, WCSCC, 518 West Prospect Street, Smithville, OH 44677, (330) 669-2134.

Choose one of these Academy Careers

Career Pathways	Accounting	Administration and Management	Administrative Support	Banking and Finance	Computer Information Systems	Distribution and Warehousing	Marketing	Retail and Wholesale	Hospitality and Tourism
College & Lifelong Learning — Professional Level	Accountant Appraiser Auditor Budget Analyst Certified Public Accountant (CPA) Credit Analyst Cost Accountant Comptroller Risk Analyst Senior Underwriter	Administrator Accountant Business Executive Certified Public Accountant (CPA) Computer Network Engineer Entrepreneur Financial Manager Marketing Analyst Office Manager Personnel Manager Product Manager Programmer Software Engineer Supervisor	Administrative Assistant Court Reporter Designer Executive Assistant International Secretary International Webpage Designer Legal Secretary Medical Secretary Office Manager Paralegal Executive Secretary	Accountant Auditor Branch Manager Collections Officer Financial Counselor Human Resources Officer Lending Officer Marketing Specialist Regulations Officer Securities Clerk Stockbroker Trust Officer Teller Trainer/Coordinator	Computer Analyst Programmer Software Engineer System Engineer	Broker Distribution Manager Production Manager Plant Superintendent Traffic Manager Warehouse Manager	Advertising Executive Business Executive Business Manager Food Manager Hotel and Motel Manager Marketing Director Marketing Researcher Personnel Manager Production Manager Public Administrator Public Relations Specialist Real Estate Manager Restaurant Manager Small Business Operator Stock Broker Visual Merchandising Manager	Business Manager Personnel Manager Marketing Manager Merchandise Manager Operations Manager Senior Visual Display Coordinator Small Business Operator	Attractions Management Lodging Managemt. Owner Travel Bureau Executive Travel Agency
WCSCC Business Academy — Technical Level	Associate Accountant Cost Estimator Purchasing Agent Tax Preparer Collector Claim Adjuster and Examiner Junior Underwriter	Business Manager Computer Analyst Computer Coordinator Local Area Network Manager Administrative Assistant Computer Operator Management Information Systems Operator Public Relations Clerk Small Business Operator	Insurance Clerk Library Assistant Medical Records Technician Office Machine Operator Secretary Switchboard Operator Word Processor	Brokerage Clerk Lending Clerk/ Associate New Accounts Clerk Public Relations Clerk Senior Teller Trainer Vault Teller	Hardware/Software Specialist Local Area Network Manager Management Information System Specialist Network Technician Network Manager Application Support Computer Coordinator Computer Technician Data Processing Manager	Agent Computer Operator Data Processing Manager Lift Operator Production Operator Sales Manager Shipping/Receiving Transportation Stock Supervisor Supply Manager Traffic Clerk	Automobile Sales Buyer Claims Adjuster Claims Examiner Collector Customer Service Representative Insurance Sales Purchasing Agent Real Estate Sales Sales Manager Sales Representative Shipping/Receiving Telemarketing	Buyer Assistant Customer Service Representative Data Entry Operator Department Manager Office Manager Shipping/Receiving Sales Representative Visual Display Coordinator	Destination Marketing Lodging Marketing Meeting Planner Special Attractions Marketing Tour Operator Transportation Coordinator Travel Agent Tour Escort Tour Sales Tour Guide
WCSCC Business Academy — Entry Level	Audit Clerk Account Clerk Account Payable Clerk Account Receivable Clerk Bank Teller Billing Clerk Bookkeeper Brokerage Clerk Cashier Payroll Clerk	Billing Clerk Clerk File Clerk Office Clerk Payroll Clerk Personnel Clerk Receptionist Secretary	Bookkeeper Personnel Clerk Account Clerk Customer Service Representative Data Entry Clerk File Clerk Proof Operator Receptionist Secretary Switchboard Operator Teller	Clerk Credit Clerk Data Entry Operator File Clerk General Office Clerk Inventory Clerk Office Clerk Personnel Clerk Proofreader Receptionist Records Clerk Telephone Operator Typist	Computer Operator Computer Peripheral Operator Data Entry Clerk	Billing Clerk Clerk Data Entry Operator Delivery General Office Clerk Inventory Clerk Receiving Clerk Sales Person Stock Handler	Cashier Counter Clerk Delivery Display Assistant Hotel Desk Clerk Rental Clerk Sales Clerk	Cashier Display Assistant Gift Wrap/Lay-away Office Clerk Sales Clerk Stock Handler	Account Clerk Host/Hostess Lodging Clerk Office Clerk Receptionist Room Attendant Steward Travel Clerk Waiter/Waitress

Careers requiring some additional training and competencies beyond the completion level of the Academy

Careers obtainable through Academy training and completion of designated competencies

Checklist for Planning and Implementing Pathways

Planning team/collaboration

_____ The career pathways planning team includes representation from academic and vocational educators, administrators, career development, STW, Tech Prep, postsecondary institutions, business and industry, curriculum specialists, and parents.

_____ The career pathways planning team collaborates on the design, planning and implementation of career pathways.

_____ The career pathways planning team sets goals, objectives, timelines, and evaluation strategies for career pathways implementation.

Needs assessment/gap analysis

_____ The planning team assesses the current status of career development options within the district, including academic and vocational coursework, articulation agreements, local labor market information, student placement and enrollment data, etc.

_____ The planning team compares the current status of local options with goals for the future.

_____ Based on the gap between the present status and the future goals, the planning team develops a needs assessment that identifies the changes that will need to occur to implement career pathways.

Curriculum development and integration

_____ Core, cluster, and specialization competencies are woven throughout the pathway in a coherent, logical sequence.

_____ The curriculum for the foundation experiences or courses provides an overview of the career cluster as well as core and cluster competencies.

_____ The curriculum map identifies a coherent sequence of secondary and postsecondary academic and occupational courses from grades 9 through 16.

_____ Business and industry have validated the district's curriculum maps.

_____ Curriculum is tied to skill standards (when applicable); programs are certified and students have the opportunity to become credentialed within their areas of specialization.

_____ The curriculum map outlines the path to entry-level, technical, and professional employment, as well as paths to two-year technical and four-year university coursework.

_____ Curriculum maps are available for use by students, parents, counselors, teachers, and business and industry.

_____ Vertical and horizontal integration exists across disciplines and between grade levels.

_____ Academic and vocational teachers share a common planning time to coordinate instruction.

_____ Curriculum focuses on problem-based learning that is situated in real-world contexts.

Delivery options

_____ Delivery options for career pathways are explored (foundation courses, career academies, magnet schools, career clusters, HSTW, capstone opportunities) within the context of the local district's needs.

_____ The planning team identifies the most appropriate delivery options for the pathways within the district, given the factors of resources, facilities, funding, and local needs.

_____ An implementation plan is developed for the delivery options selected and includes a budget, timeline, action strategies, and evaluation components.

Professional development (PD)

_____ Faculty are provided PD on the philosophy, goals, and implications of career pathways.

_____ Both academic and vocational teachers participate in curriculum mapping teams, externships, and common planning time.

_____ Faculty are provided PD on curriculum models and integration, alternative and authentic assessment.

skill standards, and articulation agreements.

Articulation agreements

_____ Articulation agreements are developed for both two-year and four-year colleges within pathways.

_____ Articulation agreements list the postsecondary competencies to be achieved in each articulated high school course.

_____ Articulation agreements list the specific postsecondary courses for which credit will be awarded.

_____ Articulation agreements include procedures for documenting and awarding student credit at the postsecondary level.

Marketing

_____ The school communicates its philosophy of career pathways to all stakeholders (parents, students, faculty, administrators, business and industry, labor, and postsecondary schools).

_____ The school provides information about career pathways to students and parents in a variety of forms (pamphlets, videos, orientations, parent-teacher meetings).

_____ Career pathways materials include information on entry-, technical-, and professional-level career options within pathways and postsecondary options.

Career Development

_____ Career exploration is ongoing and systematic, taking place in more than one grade level.

_____ All students have multiple opportunities to explore career pathways in a variety of ways (interest and aptitude assessment, career fairs, field trips, guest speakers, job shadowing).

_____ All students, including special populations, college-prep students, both genders, and diverse cultures, are informed of career pathways opportunities prior to the 9th grade.

_____ Career pathways provide students with strong experience in and understanding of all aspects of the industries they are planning to enter.

_____ Students' individual career plans identify a coherent sequence of courses within a pathway that lead to postsecondary coursework and/or employment.

Career Pathways Implementation Rubric – Student Considerations

1– Beginning Pathway	2– Emerging Pathway	3– Operational Pathway	4– Fully Developed Pathway
STUDENTS' PATHWAY FORMATION Students may be encouraged to select from required and elective classes that fall into a "category" identified by the career pathway selected. Courses are not aligned by career cluster and students have a traditional high school schedule from which to choose.	**STUDENTS' PATHWAY FORMATION** In core academics, students experience some attempts to connect learning to the career area selected in their pathway. Connections are made by relating examples of knowledge application, doing projects with career "themes," etc.	**STUDENTS' PATHWAY FORMATION** Students experience integrated learning activities between classes. They recognize that their teachers have collaborated to design projects that require related work in several classes. Students experience the inter-relatedness of subject areas because they are tied together by a career theme.	**STUDENTS' PATHWAY FORMATION** Interdisciplinary collaboration has advanced to such a degree that students no longer identify the subject area of their courses as in a traditional structure (i.e. English, Math, etc.). Knowledge and skills being learned and applied blend many different disciplines. Students experience the school as a learning and activity center where work is relevant and connected to the community and a career path.
CAREER DEVELOPMENT Students engage in one or two career exploration efforts early in their high school years, such as having a career day or visiting the vocational school. There is little connection between those exploration activities and course selection, classroom learning, or possible work-based learning opportunities. Students complete an Individual Career Plan (ICP), but that plan may bear no resemblance to the students' actual course of study during high school.	**CAREER DEVELOPMENT** Students are involved in a series of career exploration and self-awareness activities from kindergarten to the 8th grade. However, after the students develop their ICPs, little effort is made to help students align their high school course of study with their chosen pathway. The ICPs are not revisited on a regular basis to assess how the students' interests may have changed or how the students' course choices align with their career choices.	**CAREER DEVELOPMENT** Students are engaged in a thorough career development process that extends from kindergarten to the 12th grade, ranging from career exploration curricular activities, interest inventories and self assessments to computerized and internet searches that include information about skills, postsecondary options, entry points, etc. Career development activities are ongoing and lessons and reflections are recorded in a career portfolio. Career development activities are linked to formal career path selection and identification of course sequence.	**CAREER DEVELOPMENT** Students have been active participants in a coordinated career awareness and exploration process that began in kindergarten. The career development process is ongoing and integrated into classroom and work-based learning experiences. There is a clear alignment between the students' career choices, the ICP, the courses taken in high school, and the career passport. Understanding of the career development process is internalized so that students can continue to fashion their careers throughout their working lives.
SERVING ALL STUDENTS Career pathways being developed are for "some students," for example, those students who are judged as not being able to handle the academic rigor of college prep classes. Current vocational enrollments are filled with students who are "at-risk" and are not expected to continue their education.	**SERVING ALL STUDENTS** Enrollment in career pathway classes is "open to all students," indicating equal access. However, the students that are encouraged to take advantage of career pathways are not representative of the entire student body. Career clusters may have gender-segregated enrollments; ethnic minorities may not be equitably represented in all cluster areas.	**SERVING ALL STUDENTS** A range of students are involved in career pathways, including special ed., English language learners, gifted and talented, at-risk, and all others. Both males and females and ethnic minorities are represented in all cluster areas. Instruction is appropriate for all students and there is a clear sense that all learning within the career pathways is challenging and relevant.	**SERVING ALL STUDENTS** Every student in the school is actively engaged in a career pathway. Instructional strategies and support systems make the experience highly valuable for all students regardless of their individual strengths or challenges.

Career Pathways Implementation Rubric – Student Considerations (continued)

1– Beginning Pathway	2– Emerging Pathway	3– Operational Pathway	4– Fully Developed Pathway
WORK-BASED LEARNING OPPORTUNITIES There are little or no work-based learning opportunities for students. Part-time jobs are listed on a job board. Some vocational programs offer work experience (co-op) components.	WORK-BASED LEARNING OPPORTUNITIES Students enrolled in career pathway courses take some field trips to worksites and may have the opportunity to do a job shadow. There is little or no connection between the work-based learning experience and classroom learning, except in vocational programs.	WORK-BASED LEARNING OPPORTUNITIES Students may participate in a number of work-based learning experiences during their high school years including job shadowing, worksite visits, service learning, school-based enterprises, and internships. Classroom teachers are aware of students' work-based learning opportunities and encourage students to share and reflect upon them to connect to school-based learning.	WORK-BASED LEARNING OPPORTUNITIES Students enjoy a sequence of coordinated work-based learning experiences that are well-integrated with classroom learning. For students, both work-based and school-based learning seem to be a natural extension of one another, intimately linked by content, skills, assessment, and standards.

Career Pathways Implementation Rubric – Teaching and Learning Considerations

1– Beginning Pathway	2– Emerging Pathway	3– Operational Pathway	4– Fully Developed Pathway
CURRICULUM INTEGRATION Classes exist in vocational and academic areas that may be sequenced to simulate a pathway experience for students. Vocational classes focus on skills needed for particular career areas. Academic classes focus on theory and knowledge with little attempt to apply it to career-related experiences. There is little or no communication or collaboration between and among teachers of these classes. Curriculum mapping is not used.	**CURRICULUM INTEGRATION** Vocational classes emphasize applied academics; however, these academics are not rigorous enough to prepare students for college-level courses. Academic classes occasionally cite real-life and career applications of material being learned. There is some coordination between teachers of the vocational and academic classes that fall into the given career cluster, but no common planning time to support it. Curriculum mapping may be used to align courses and pathways designs.	**CURRICULUM INTEGRATION** Through collaboration between teachers, there begins to be a true blending and integration of vocational and academic learning, such that students are striving to meet the same high academic and performance standards for all classes, whether considered vocational or academic. Curriculum is mapped along career pathways. All classes emphasize the importance of gaining knowledge and developing skills. Teachers within specific clusters have common planning time.	**CURRICULUM INTEGRATION** There exists no separation between academic and vocational classes. All classes have fully integrated curricula, so that classes cannot even be identified as vocational or academic. All classes provide students with high level academic preparation expected by the post-secondary education system and necessary skill development sought by employers. All academic and vocational teachers have common planning time and have a clear understanding of integration.
INSTRUCTIONAL STRATEGIES Instruction is mostly traditional with teachers as the source of knowledge, delivering lectures. The primary resource is the textbook. Students sit in rows and mostly work independently and are evaluated individually. Assessment is predominantly by paper and pencil exam.	**INSTRUCTIONAL STRATEGIES** Instructional methodology varies somewhat, providing students with some opportunities to master knowledge and learn skills through a range of activities. Several resources are used in addition to the textbook. Students sometimes work in teams. Assessment is sometimes a group task that relies on teamwork.	**INSTRUCTIONAL STRATEGIES** Learning is student-centered. Most student work is project-based, working with classmates as team members. Many resources are available and accessible, both inside and outside the classroom. Assessment is performance-based and authentic.	**INSTRUCTIONAL STRATEGIES** A great deal of learning takes place within a work-based context, with students working in teams on real community problems with real-world impact. Resources are only limited by students' creativity. The teacher serves as facilitator. Assessment is based on performance using industry standards.
PROFESSIONAL DEVELOPMENT Professional development is limited to specific inservice days throughout the school year. These inservices may or may not be related to the development of career pathways. Vocational and academic teachers have few opportunities to update their knowledge of the workplace in a real-world setting. Schools do not have the resources to send teachers to inservices or externships outside of the district.	**PROFESSIONAL DEVELOPMENT** Key administrators and faculty recognize the need to provide professional development for staff in areas such as curriculum integration, pathways formation, workforce needs, school reform, and collaboration, but only selected groups of teachers and administrators are allowed to attend these inservices. Professional development opportunities are limited to inservice training and are rarely connected with ongoing inquiry, collaboration among teachers, or reflection.	**PROFESSIONAL DEVELOPMENT** Teachers working within career clusters develop teaching and learning goals and base their professional development strategies on gaps identified between what exists and what could be. Professional development is rarely a one-time, "one-size-fits-all" event, but is a combination of inquiry, collaboration, externships, and assessment.	**PROFESSIONAL DEVELOPMENT** Professional development becomes a system-wide, sustained activity for all staff. Through collaboration and creativity, all staff are afforded the opportunity to assess their professional development needs and obtain the assistance necessary. Clear ties exist between professional development activities and career pathways, with each informing and shaping the other.

Career Pathways Implementation Rubric – Teaching and Learning Considerations (continued)

1– Beginning Pathway	2– Emerging Pathway	3– Operational Pathway	4– Fully Developed Pathway
ADOPTION OF STANDARDS The individual teacher determines the standards for students in his/her class. Students have a sense of those standards, but they have not been clearly stated and modeled. Parents and community members are not informed of standards.	**ADOPTION OF STANDARDS** School-wide standards, based on national academic and industry-based skill standards, are emerging through a collaborative effort of the staff. The setting of benchmarks is anticipated. Teachers are not certain how these standards and benchmarks might affect their instruction, student learning, or assessment. Parents and community members are aware of the standards development process.	**ADOPTION OF STANDARDS** High academic and technical standards are in place for all students. The school is developing necessary support systems to help all students meet the standards. Teachers are beginning to understand how these standards must drive curriculum and assessment. For example, rubrics are being developed against which to score student work. Parents and community members have the opportunity to give input as the staff develop standards.	**ADOPTION OF STANDARDS** All students are expected to meet the high content and performance standards collaboratively developed by educators, parents, and community members. Both school and community support systems are in place to assist all students in meeting the standards. The standards drive the work of teachers. Their curriculum and assessment measures are continuously revised based on their review and evaluation of student achievement.
ALL ASPECTS OF THE INDUSTRY Curriculum and skill development in pathway classes focus primarily on skills needed for entry-level jobs or the skills that the vocational teacher has historically taught within the pathway, such as carpentry in the industrial and engineering cluster, or secretarial science in the business and management cluster.	**ALL ASPECTS OF THE INDUSTRY** Through classroom speakers, videos, and other means, students are exposed to a handful of jobs within the career pathway. Students understand that there are a number of different points of entry based on previous training and experience as well as levels of entry within each industry.	**ALL ASPECTS OF THE INDUSTRY** In many of their classes, students are exposed to the wide range of career options within the pathway focus industry(ies). For example, in social studies class, students study the history, labor issues, politics, legal issues, etc. of the field. In other classes, as well as in work-based learning experiences, students learn about how philosophical issues, current trends, and technology affects the industry.	**ALL ASPECTS OF THE INDUSTRY** By engaging in a rich array of work-based and school-based learning experiences, students gain first-hand knowledge of all aspects of the pathway focus industry(ies). They clearly understand the skills, knowledge base, and training needed for the variety of job areas within the industry and closely related industries. Students have an accessible collection of resources that they can continue to consult to learn of new developments in the industry, emerging jobs, and employment trends.

Career Pathways Implementation Rubric – District Level Considerations

1– Beginning Pathway	2– Emerging Pathway	3– Operational Pathway	4– Fully Developed Pathway
PATHWAY SYSTEM DESIGN Divisions between college-prep, vocational, and general track courses still exist. Some school faculty are aware of the career pathways concept and labor market projections but most staff in the district are not. Decisions to create pathways are based on current programs, enrollment needs and funding patterns, not on specific labor market data or industry needs. Student enrollment, retention, graduation, and placement data are not scrutinized within the context of career pathways.	**PATHWAY SYSTEM DESIGN** A gap analysis is conducted to identify disparities between what is currently offered and what is desired. Labor market data, industry trends, and business and industry needs are reviewed to determine possible pathways designs. Academic and vocational courses are examined district-wide to identify gaps in course offerings. Student enrollment, retention, graduation, and placement data are analyzed to determine how students are being served. Tentative plans are made to develop one or two pathway designs within clusters.	**PATHWAY SYSTEM DESIGN** The general track is eliminated and the distinctions between college-prep and vocational instruction begin to blur. Pathways designs exist for several areas. All students are held to high expectations. Interdisciplinary teams, including both academic and vocational teachers, work with industry and labor market data to develop pathways within clusters. Standards documents, higher education partners and industry partners help inform curricular decisions. Articulation agreements are developed for selected pathways.	**PATHWAY SYSTEM DESIGN** A comprehensive, manageable pathway system is designed to ensure coverage of all major career fields. Standards are used to align curricula with industry and postsecondary education requirements ensuring that students have various options after high school. Articulation agreements exist in all industry areas with many postsecondary institutions and apprenticeships. Pathways are designed creatively so that all learners can participate, learning is exciting and rewarding, and learners are prepared for both higher education and careers.
LEARNING ORGANIZATION Traditional disciplines and instructional methods drive the school structure, culture, norms, and procedures. Teachers are assigned to academic and vocational disciplines, not to career clusters. Teachers practice in isolation, rarely collaborating or talking with other colleagues about their practice. Career pathways are limited to vocational programs at the junior and senior years, with little or no connection to other disciplines.	**LEARNING ORGANIZATION** The school staff begins to challenge some of the institutional barriers that limit the development of career pathways such as the bell schedule, departmental divisions, tracking, professional development strategies, and resource allocation. Teachers begin to work together across disciplines to develop pathways. One academy or magnet school within a career pathway may be in the planning stages.	**LEARNING ORGANIZATION** The school staff, in collaboration with community partners, have worked to make major changes in the school's systems and structures to allow the development of career pathways for all students to be supported. Changes may include collaborative decision-making structures, block scheduling, staff collaboration time, ongoing program evaluation, professional development, etc. Several foundation courses or academies within career clusters begin to be implemented.	**LEARNING ORGANIZATION** Remnants of the traditional high school culture are difficult to find. Teachers belong to career clusters, not academic or vocational disciplines. There is a culture of collaboration, inquiry, reflection, and continuous improvement that is driven by informed decision making and high standards for all students and adults. Career academies, magnets, and clusters are pervasive throughout the district.
EXTERNAL COLLABORATION Partnerships with the community revolve around donations to the school and are often arranged by individual teachers for isolated events. Little effort is made to communicate with parents beyond what is required.	**EXTERNAL COLLABORATION** Partnerships with parents, community groups, and business are sustained over a period of time and revolve around extracurricular programs such as recognition ceremonies and fundraisers. Other partnerships support annual events like career fairs and field trips.	**EXTERNAL COLLABORATION** Partnerships are mutually-beneficial, somewhat extensive and formalized, focusing on teaching and learning activities and including activities such as job shadowing, internships, and mentoring. Partnerships are evaluated annually and adjusted or expanded to better meet mutual needs.	**EXTERNAL COLLABORATION** Partners are active participants in all aspects of the school, including professional development, curriculum development, setting standards, and decision-making. The school partners with support providers to continually evaluate progress in its reform effort and improve student performance.

Career Pathways Implementation Rubric – District Level Considerations (continued)

1– Beginning Pathway	2– Emerging Pathway	3– Operational Pathway	4– Fully Developed Pathway
INTERNAL COLLABORATION Initiatives such as Tech Prep, School-to-Work, Career Pathways, Career Development, and school reform efforts exist in isolation. Key faculty may serve on multiple advisory committees; however, little actual collaboration exists. Turf issues regarding funding and student enrollments are prevalent.	**INTERNAL COLLABORATION** Paternerships between reform initiatives are developed along specific projects or grants; these partnerships are temporary and disintegrate after the completion of the project. Due to a lack of communication, duplication of effort frequently occurs.	**INTERNAL COLLABORATION** Real partnerships exist between two or more initiatives; key stakeholders actively work together to improve curriculum and develop pathways. Turf issues are minimized and partners work in concert to achieve mutually agreed-upon outcomes.	**INTERNAL COLLABORATION** All reform initiatives work together in implementing a seamless system for all students. Although the initiatives maintain their own identities and focus, the partners understand, support, and advocate for one another. There are no turf issues and no duplication of effort.
PERFORMANCE MEASURES The district has developed a vision and mission statement for career pathways implementation; however, it has not tied this vision/mission to specific performance measures. While performance data are collected for state reporting requirements, these data are not evaluated for their usefulness in assessing career pathways implementation. Many staff, especially teachers, are not aware of state performance measures or how their district performs with regard to those measures.	**PERFORMANCE MEASURES** The district's vision and mission statements play a key role in the identification of relevant performance measures. The district begins to evaluate the extent to which career pathways implementation assists or detracts from known performance measures. Statewide performance measures are used to evaluate program performance; however, gaps may exist between the data collected and the data needed to effectively evaluate the district's performance. Many of the staff are aware of the performance measures but may not understand how their own program areas support those measures.	**PERFORMANCE MEASURES** The district's vision and mission becomes the central focus in the development of performance measures and the collection of supporting data. Performance measures are clearly defined and all of the district's staff work to meet those measures. However, the data used to evaluate the district's performance may be reported only intermittently; consequently, the staff may not be informed in a timely fashion of changes they need to make in their programming.	**PERFORMANCE MEASURES** The district's vision and mission is constantly considered in the development of performance measures and the collection of relevant supporting data. The supporting data are collected frequently and are used to evaluate program-level and district-level performance and to design and improve career-focused education. In the process of evaluating its performance, the district creates additional local performance measures to augment state-level required measures; these measures drive the continuous improvement process. All staff are actively engaged in performance analysis and see direct benefits to their own areas.

Adapted and used with permission from Roman Stearns, School-to-Career Coordinator, Alameda County Office of Education, California. Special thanks to Jim Sorenson, Career Pathways Specialist, Pioneer Career and Technology Center, and Dee Sturgill, Business and Marketing Supervisor, Ohio Department of Education. Modified by Sheila Thompson, Career Pathways Design Consultant, Ohio Department of Education, 1998.

Career Pathways Implementation Rubric
Assessment Component

Student Considerations

Critical Pieces	Beginning Pathway	Emerging Pathway	Operational Pathway	Fully Developed Pathway
Students' Pathway Formation				
Career Development				
Serving All Students				
Work-based Learning Opportunities				

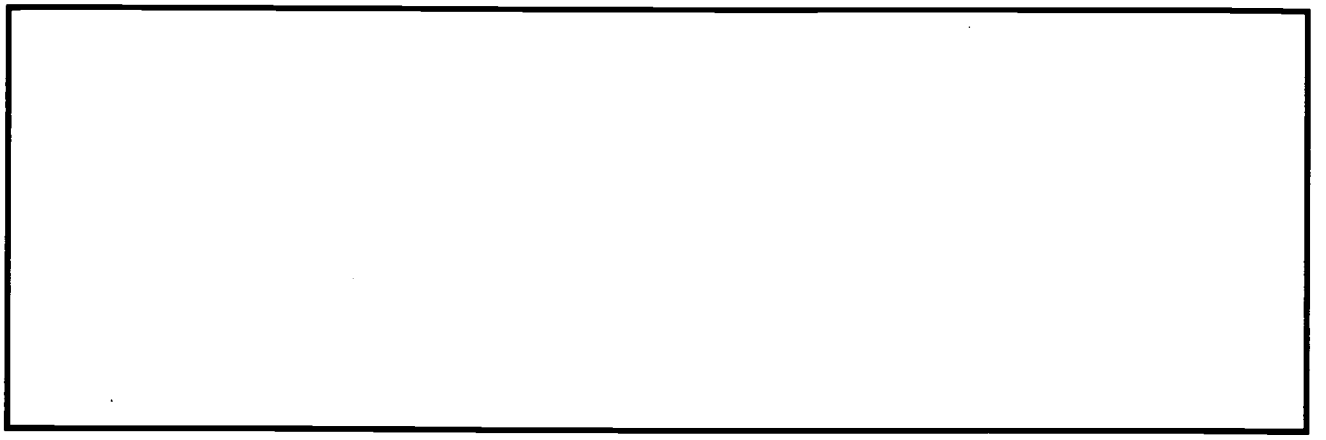
Teaching and Learning Considerations

Critical Pieces	Beginning Pathway	Emerging Pathway	Operational Pathway	Fully Developed Pathway
Curriculum Integration				
Instructional Strategies				
Professional Development				
Adoption of Standards				
All aspects of the industry				

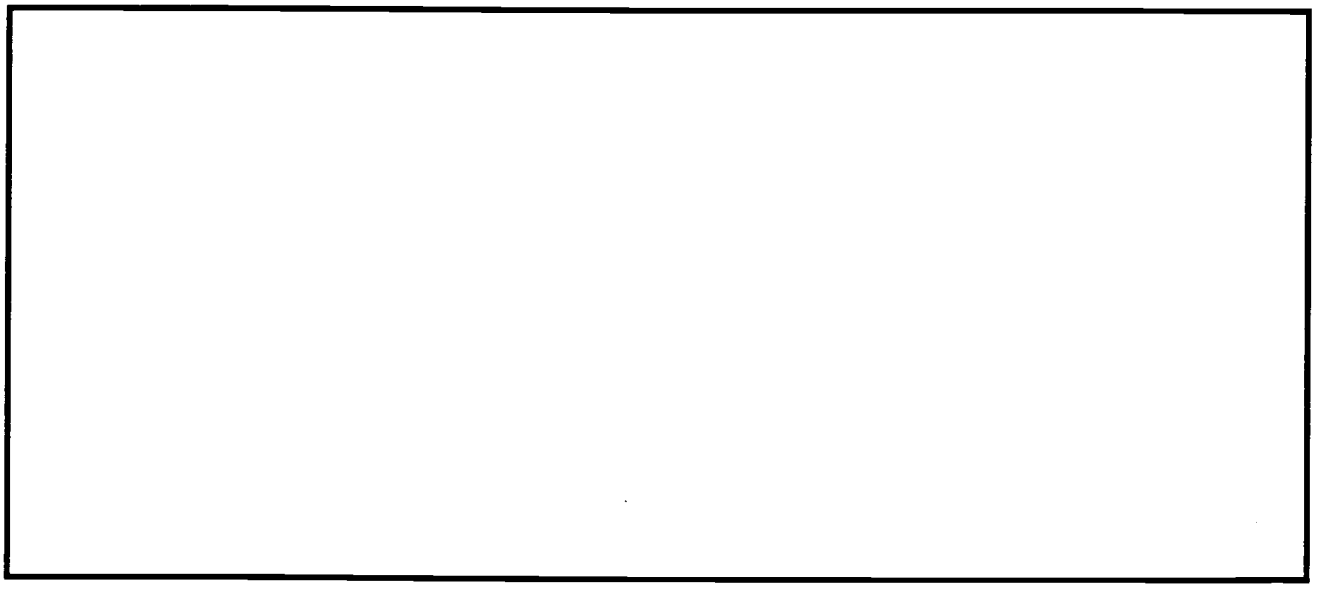
District Level Considerations

Critical Pieces	Beginning Pathway	Emerging Pathway	Operational Pathway	Fully Developed Pathway
Pathway System Design				
Learning Organization				
External Collaboration				
Internal Collaboration				
Performance Measures				

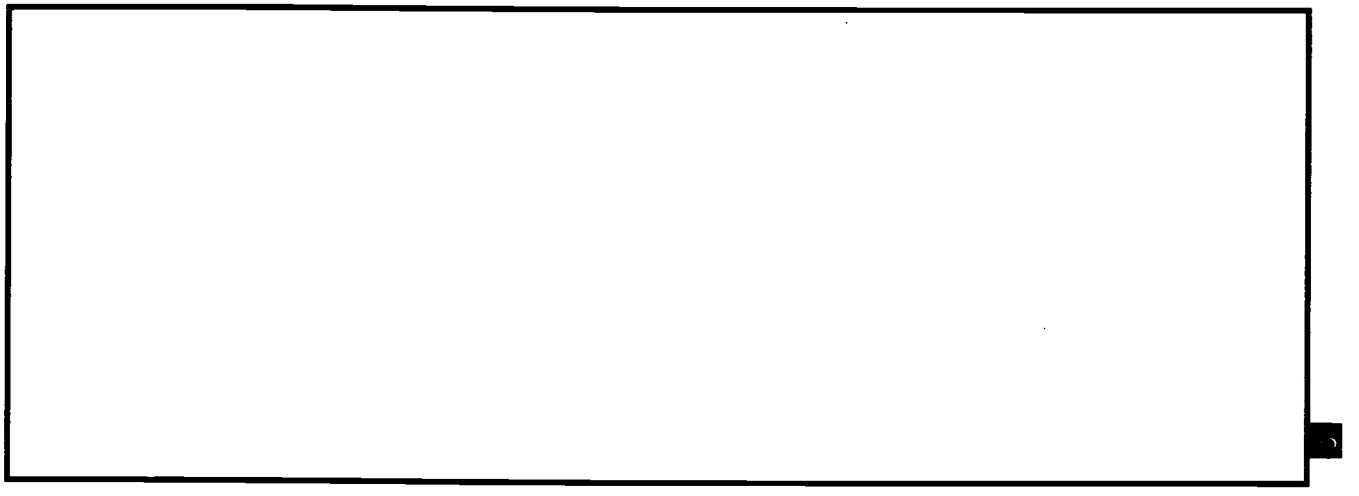
Student Considerations – Evidence



Teaching and Learning Considerations – Evidence



District Level Considerations – Evidence



Career Pathways Development Template

_____ **Cluster** _____ **Major**

Description of this cluster and major:	Work-based learning experiences that support this cluster and major:
Sample career options within this cluster or major: Entry Level:	VSOs and co-curricular activities that support the cluster and major:
Technical Level:	Credentialing opportunities within this cluster and major:
Professional Level:	Postsecondary opportunities and articulation agreements available within this cluster and major:
Academic and technical courses that support this cluster and major:	

Sample Cluster Pathway Model – Strategies

_____ Cluster _____ Major

Current curriculum offerings within the district that support this cluster/major:	Instructional delivery options that could be used to support this pathway (foundation courses, academies, senior projects/capstone courses, evening, weekend or summer classes, etc.):
Courses and educational experiences within the district that can/should be developed to support this pathway (including integrated academic and technical instruction):	Integration strategies that would support this pathway:

Developed in 1999 by the Ohio Department of Education, Division of Career-Technical and Adult Education. Contact Sheila Thompson, Career Pathways Consultant, at (614) 644-6830.

Definitions

Academic skills
Those skills including communications, mathematics, science, and basic literacy proficiencies necessary to achieve career success and to facilitate lifelong learning.

Career clusters
Groupings of occupations from one or more industries that share common skill requirements. Career clusters provide a means of organizing the thousands of career choices for implementation in the school curriculum.

Capstone course
A career cluster capstone course is a structured experience that provides students the opportunity to tie together vocational and academic coursework in a way that is meaningful, experiential, and connected to the student's chosen career pathway. Generally offered at the 12th grade, a capstone experience could be a structured mentorship, senior project, or summer academy geared to the student's career interests and yielding a portfolio.

Career development
The process by which an individual develops an awareness about careers, explores potential careers, chooses and prepares for careers, and makes transitions between careers. Career development also addresses the ways in which schools help students develop awareness about careers, explore possible careers, and prepare for careers.

Career development programs
Each VEPD in Ohio has a career development program funded through state grants. Career coordinators who manage these programs must ensure that career services for K-12 students are offered in all districts in the VEPD. These services include career assessment, staff development, curriculum assistance, career-related instructional materials, current career information, and community linkages—all to provide a range of career activities for students. Career activities for students include the Individual Career Plan and the Career Passport.

Career-focused education
Educational programming in which curriculum content and learning experiences clearly connect to the world of work.

Career specialty
Major area of study selected by a learner based on his or her education and career interests and goals.

Career pathway
A series of academic, technological, and occupational coursework and other educational experiences leading to a career specialty.

Curriculum map
A curriculum plan that outlines the competencies taught in courses or subject matter areas, showing horizontal and vertical integration.

Employability skills
Personal development and leadership abilities essential for increased productivity, economic self-sufficiency, career flexibility, business ownership, and effective management of work and family responsibilities.

Foundation course
A career cluster foundation course is a semester- or year-long course (or structured experience for credit) within a career cluster that provides core and cluster competencies as well as information on professional, technical, and entry-level career pathway possibilities within the career cluster.

Integration
The process of coordinating different curricular areas of study into a unified whole.

Occupational skills
Those skills involving the technical abilities to perform required workplace tasks, including problem solving and critical thinking.

School-To-Work
A systemic approach to workforce preparation that has three basic elements: school-based learning, work-based learning, and connecting activities. Local partnerships, with employers as key members, plan and operate School-To-Work systems.

Tech Prep
A competency-based program of combined secondary and postsecondary education and occupational experience that includes a common core of required proficiency in mathematics, science, communications and technologies designed to lead to an associate degree or two-year postsecondary certificate in specific career fields.

References and Resources

Bailey, T. R. (1995). The integration of work and school: Education and the changing workplace. In W. Norton Grubb (Ed.), Education through occupations in American high schools, Vol. 1. (pp. 26-38). New York: Teachers College Press.

Berryman, S. E., & Bailey, T. R. (1992). The double helix of education and the economy. New York: The Institute on Education and the Economy.

Daggett, W. R. (1996). The challenge to American Schools—Preparing students for the 21st century. New York, New York: International Center for Leadership in Education.

Gray, K. C., & Herr, E. L. (1995). Other ways to win: Creating alternatives for high school graduates. Thousand Oaks, CA: Corwin Press, Inc.

Grubb, W. N. (1995a). A continuum of approaches to curriculum integration. In W. Norton Grubb (Ed.), Education Through Occupations in American High Schools, Vol. 1. (pp. 59-81). New York: Teachers College Press.

——— (1995b). Coherence for all students: High schools with career clusters and majors. In W. Norton Grubb (Ed.), Education through occupations in American high schools, Vol. 1. (pp. 97-113). New York: Teachers College Press.

McGraw-Hill. (1997). New American high schools: Preparing students for college and careers. New York: McGraw Hill.

McPartland, J., Jordan, W., Legters, N., and Balfanz, R. (1997, October). Finding safety in small numbers. Vol.. 55, Number 2. Educational Leadership.

Ohio Department of Education. (1992). Ohio's Career Development Blueprint. Columbus, Ohio: Ohio Department of Education.

Ohio Department of Education. (1996). Implementation guide for Ohio educators to build School-To-Work partnerships. Columbus, Ohio: Ohio Department of Education.

———(1995). Ohio's future at work: Beyond 2000. Columbus, Ohio: Ohio Department of Education, Division of Vocational and Adult Education.

Schlechty, P. C. (1997) Inventing better schools: An action plan for educational reform. San Francisco: Jossey-Bass Publishers.

Ohio School-To-Work. (1995). Building a School-To-Work System in the State of Ohio. Columbus, Ohio: Ohio School-To-Work.

Web Sites

Association for Supervision and Curriculum Development www.ascd.org

Center for Occupational Research & Development www.cord.org

Coalition of Essential Schools www.essentialschools.org

ERIC Clearinghouse ericacve@magnus.acs.ohio-state.edu

Great Oaks Institute of Technology & Career Dev. www.greatoaks.com

High Schools That Work/SREB www.sreb.org/programs/hstw/high/html

National Academy Foundation www.naf-education.org

National Association of Secondary School Principals (NASSP) (New American High Schools)
www.nassp.org

National Center for Research in Vocational Education ncrve.berkeley.edu

New American High Schools
www.artsednet.getty.edu/ArtsEdNet/Advocacy/Workplace/awards.html

Ohio Department of Education, Division of Career-Technical and Adult Education
www.ode.ohio.gov/www/ve/ve.html

For more information and technical assistance contact the
Ohio Department of Education
Division of Career-Technical and Adult Education
65 South Front Street, Columbus, Ohio 43215
614-466-3430 www.ode.ohio.gov

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