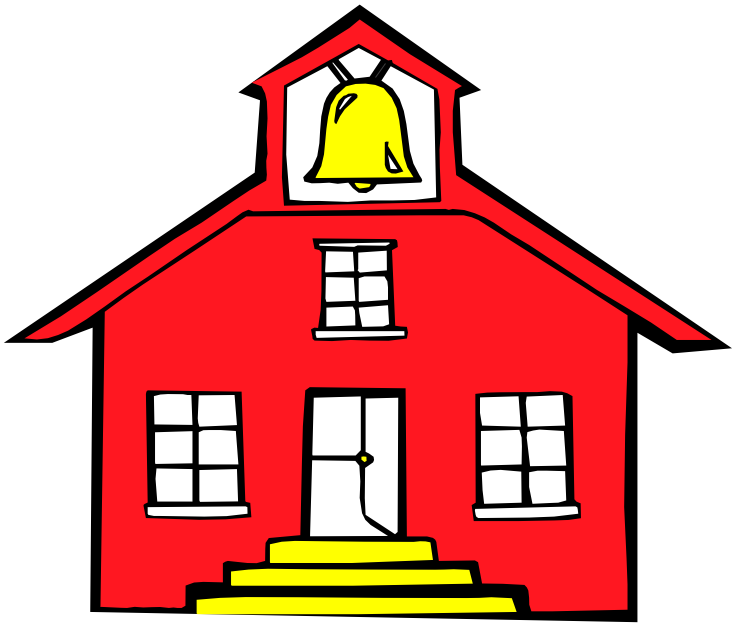
NEBRASKA

Work Based Learning Manual

PART VII

SCHOOL SITE CAREER PREPARATION GUIDE



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The Nebraska Work Based Learning (WBL) Manual was developed by the Nebraska Department of Education through funding provided by the Carl D. Perkins Vocational and Applied Technology Education Act, Grant #V048A1002700 and the School-to-Work Opportunities Act, Grant #9724441 with the State of Nebraska. It is the policy of Nebraska Departments of Education and Economic Development not to discriminate on the basis of sex, disability, race, color, religion, marital status, age or national or ethnic origin in its education programs, admissions policies, employment or other agency-administered programs.

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Original Publication 6/98
Updated 10/01

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Work Based Learning
SCHOOL SITE CAREER PREPARATION GUIDE

Executive Summary

Activities that integrate academic skills learned in the classroom with skills learned on the job provide the bridge for transitioning from school to work and/or postsecondary education. This *Guide* answers such questions as "How do career and technical student organization activities help students in their career decision making?" and "What are the steps involved in establishing a school based enterprise?"

By integrating job instruction and career exploration with a program of study based on high academics and skill standards, the following school site career preparation activities provide the bridge for transitioning from school to work and/or postsecondary education. Formal definitions, step-by-step checklists, and sample forms for each option are provided in this *Guide*.

School Site Career Preparation Options	
Applied Academics Courses	Applied academics courses are similar in content to traditional college prep but use real-life examples and emphasize contextual learning. Course content is rigorous and challenging. They are offered in the following subject areas: mathematics, English, biology, physics, and social studies.
Career Academies	Career academies are schools-within-schools in which groups of students take several classes together each year with the same group of teachers. Each academy focus on a career theme such as business and finance, electronics, etc.
Entrepreneurship Projects/Classes	Entrepreneurship experiences assist students in developing the competencies needed to own and manage enterprises.
School Based Enterprises	SBE's encompass activities in which students produce goods or services for sale or use by the school or communities. Teachers and students learn to develop, operate, and sustain a real business.
Tech Prep Programs/ Articulation	Tech Prep combines a strong secondary and postsecondary education to prepare students for mid-level technology careers for the twenty-first century and articulates seamless educational pathways for the pursue of postsecondary education options.
CTSO Projects/ Competitions	Career and Technical Student Organizations provide educational opportunities directly linked to the curriculum for vocational and applied technology education students so they may develop personally and professionally in preparation for career and life.
CTE Programs	Career and Technical Education programs are competency-based occupational education programs that address the emerging technologies and future employment opportunities in business and industry.
Workplace Readiness Courses	Problem solving, teamwork, self management and the other SCANS foundations and competencies needed to succeed in the changing workplace are the focus of these courses.

A. APPLIED ACADEMICS COURSES

Overview

Applied academics courses are similar in content to traditional college prep courses but use real-life examples and emphasize contextual learning. The course content is rigorous and challenging. Applied academics courses are offered in the following subject areas: mathematics, English, biology, physics, and social studies.

Schools districts should certify and ensure that the applied academic courses they offer are equivalent to pre-college (college prep) courses in rigor, content, and standards. With applied academic courses equivalent to pre-college courses in rigor, content, and standards, the districts need to reevaluate policies on weighted courses and assign the same weight to the applied academic courses as to the college prep courses. Any inequity in course weighting will result in the applied academic courses being viewed less rigorous and demanding.

Providing quality professional development for teachers, raising of elementary and middle school standards in the areas of mathematics, communication, and science, and providing systems of extra help are critical requirements in maintaining high standards for applied academics courses. School districts should ensure that each teacher teaching an applied academic course has completed appropriate training in applied methodology before teaching the applied academic course. Each teacher should be certified in the appropriate academic field to teach the applied academic course.

Research Related to Applied Learning

Recent studies have focused attention on the competencies or student outcomes that need to be achieved by all students if they are to be equipped to function successfully in jobs and life experiences. Emerging findings related to the learning process include the following:

- Most people learn best in an experiential manner involving personal participation, physical or hands-on activities, and opportunities for personal discovery.

- Learning is greatly enhanced when concepts are presented in a context involving relationships that are familiar to the student. The human brain vigorously seeks meaning and integration of new ideas into the entire spectrum of its prior knowledge. Student recognition of the need for new information and its incorporation into his/her existing store of knowledge provides strong motivation for learning. Without it, the process is very limited and difficult.

- Most people relate better to concrete, tangible examples and experiences than to abstract, conceptual models.

- Most people are extroverted learners who do best through interpersonal communication, group experience, sharing, mutual support, team processes, and positive reinforcement.

- Rote memorization is an inefficient and ineffective learning strategy.

- Transfer of learning from one situation to another is not consistently predictable; this ability is in itself a skill to be learned.

Howard Gardener, *Frames of Mind: The Theory of Multiple Intelligences*, 1983 and *Multiple Intelligences: The Theory in Practice*, New York: Basic Books 1993; and David A. Kola, *Experiential Learning: Experience as the Source of Learning and Development*, New Jersey: Prentice-Hall, 1984.

Since 1985, more than 23,000 classroom doors in all 50 states have been opened to more than 650,000 students enrolled in applied academic classes. But these are not the watered-down, low-level courses many people have come to associate with the word *applied*. These are not *dummy* classes. Today's applied academic courses and curricula are simply academic courses and curricula with contextual teaching and learning methods built in; they team respectable academic content with a new system of instruction. The result? *It's not easy, it's just easy to learn.*

Dan Hull, *Opening Minds, Opening Doors: The Rebirth of American Education*, CORD Communications, Waco, TX, 1993.

Nebraska Applied Academics Courses
CURRICULUM GUIDE

Seamless educational pathways for Nebraska youth are enhanced by articulation agreements between and among secondary schools and postsecondary institutions. Two major articulation steps were taken in 1996: (1) an academic transfer agreement was signed creating a smoother transition between Nebraska's two- and four-year postsecondary institutions, and (2) the Nebraska Department of Education revised *Rule 10 Regulations and Procedures for the Accreditation of Schools* to provide more flexibility for secondary schools in designing a curriculum that better meets the needs of students. As a result, many Nebraska high schools now offer integrated courses as well as a variety of applied academics courses—academic courses that emphasize contextual teaching and learning methodology.

A crucial next step to creating seamless educational pathways was the acceptance of applied academics courses as admissions requirement core-course equivalents by many Nebraska postsecondary institutions. The *Nebraska Applied Academics Courses Curriculum Guide*, developed by the Nebraska Articulation Task Force with the input and approval of the Nebraska Department of Education curriculum and instruction consultants, provides a step in that direction.

The Academic Requirements Committee of the National Collegiate Athletic Association (NCAA) in 1996 approved the Center for Occupational Research and Development (CORD) applied academics courses as meeting the initial-eligibility requirements for student athletes. Each course in the *Guide* meets or exceeds the requirements of the applied academics courses developed by CORD. The NCAA recently removed further barriers for applied academics courses by allowing high school principals to determine whether or not courses at their school met initial-eligibility requirements.

PURPOSE

The *Guide* has a two-fold purpose:

(1) To assist Nebraska secondary schools in developing applied academics courses that reflect the rigor of their *traditional* academic course counterparts.

(2) To assist Nebraska four-year postsecondary schools in their evaluation of applied academics courses as admission requirements core-course equivalents.

USE OF THE GUIDE

The *Guide* contains one-page descriptions for twelve applied academic courses offered by many Nebraska secondary schools. Use of the *Guide* will greatly facilitate articulation between Nebraska secondary and postsecondary institutions when:

- Secondary schools seeking approval of their applied academic courses as postsecondary core-course equivalents for admission use the descriptions in the *Guide* to design applied academic courses with similar content and academic rigor.

- Nebraska postsecondary institutions use the *Guide* as a basis for granting or denying admission requirements core-course equivalency to applied academics courses submitted for approval by secondary schools.

- Postsecondary institutions use the course descriptions in the *Guide* as the baseline from which to start their curriculum offerings at the postsecondary level.

APPLIED ACADEMICS COURSES AS CORE-COURSE EQUIVALENTS

The *Guide* includes one-page descriptions for each of the applied academic courses listed below. Their approval status as admission requirements core-course equivalents by Nebraska four-year postsecondary institutions is provided in the next table. Secondary schools seeking approval of their applied academic courses as postsecondary core-course equivalents should provide the college/university with course descriptions that indicate similar content and academic rigor.

Category	*Units	COLLEGE/UNIVERSITY ADMISSION Core-course Requirements	SECONDARY APPLIED ACADEMICS Core-course Equivalents
English	4 units	All units must include intensive reading and writing experiences. Innovative interdisciplinary courses and courses in speech and journalism may be substituted if they include substantial amounts of reading and writing.	Applied Communication
Mathematics	3-4 units	Algebra I, Algebra II and Geometry.	Applied Mathematics I and II (Algebra I) Applied Mathematics III (Geometry)
Social Studies	3 units	One unit drawn from American and/or World History; one additional unit drawn from History, American Government and/or Geography; and a third unit drawn from any Social Science Discipline.	Applied Economics Applied Psychology Entrepreneurship Marketing I
Natural Sciences	3 units	At least two units selected from Biology, Chemistry, Physics and Earth Sciences. One of the above units must include laboratory instruction.	Applications in Biology/Chemistry BSAA - Animal Science BSAA - Plant Science ChemCom Principles of Technology

*A unit is a Carnegie Unit, comprising high school study for a period of one year.

APPLIED ACADEMICS COURSES APPROVAL STATUS

In the fall of 1996, all Nebraska four-year postsecondary educational institutions were asked to review twelve applied academics courses for admission requirements core course equivalency. The results were published in the *Applied Academics Course Curriculum Guide* in June 1997. The *Guide* has been widely distributed and well received by Nebraska secondary schools and two-year and four-year postsecondary institutions. Use of the *Guide* is facilitating articulation between Nebraska secondary and postsecondary institutions by providing :

- ♦ secondary schools with a framework for developing applied academics courses that reflect the rigor of their traditional academic course counterparts.
- ♦ postsecondary institutions with a basis for granting or denying admission requirements core-course equivalency to applied academics courses submitted for approval by secondary schools.
- ♦ postsecondary institutions with a baseline from which to start their curriculum offerings at the postsecondary level.

For more information or to obtain copies of the *Guide*, please write or call the Tech Prep Director, Nebraska Department of Education, 301 Centennial Mall South, Lincoln NE 68509-4987, 402-471-0948.

SECONDARY SCHOOL USE OF THE *GUIDE*

Acceptance of a high school's applied academics course(s) as core course equivalents for admission at postsecondary institutions is not automatic. Secondary schools must make application to each postsecondary institution at which they wish to have their applied course(s) accepted as core course equivalents for admission. A sample memo for making this request and the process for obtaining core course equivalency for admission at the University of Nebraska is provided below.

Applied courses that have been accepted as core course equivalents for admission should be promoted as such to students, parents, and counselors. One way to do this is via the description of the course in the high school's course catalogue. Sample high school course catalogue description for the applied courses in the *Guide* are provided on pages VII - 7-9.

Secondary schools seeking help in designing rigorous applied academics course should contact the Nebraska Department of Education Curriculum Consultants listed on page VII - 11.

Sample Memo

(High School Stationery)

Request to a Postsecondary Institution
For Core-course Equivalency for Admission
For an Applied Academics Course Taught by the Secondary School

To: Admissions Director, Postsecondary Institution
From: Principal (or Curriculum Specialist or Counselor)
Re: Core-Course Equivalency for Admission for (Name of Applied Academics Course)
Date:

Please review the enclosed course syllabus for (name of applied academics course) for consideration as a course-course equivalent for admission at your institutions. The course has been designed with the academic rigor of it's traditional academic counterpart and meets or exceeds the expectations of the course described in the ***Applied Academics Course Curriculum Guide*** distributed by the Nebraska Department of Education.

If you need further information or clarification regarding the content or methodology utilized in this course, please contact me. I look forward to your favorable response.

Enclosure *(NOTE: The high school applied course syllabus enclosed should not exceed 3-5 pages.)*

High School Process for Obtaining Core Course Equivalencies at the University of Nebraska
http://www.unl.edu/nuhusker/nucore.html

1. Compare your applied academics courses to the descriptions provided in the Nebraska Applied Academics Courses Guide to determine if they provide an equivalent level of academic preparation and rigor.
2. If you determine that they are of equivalent rigor, check the University of Nebraska website to determine whether or not your applied course(s) has already have received their approval as a core course equivalent for admission.
3. If your applied course has not received approval as a core course equivalent for admission, follow the process prescribed on the website.

SAMPLE
Applied Academics Course Descriptions
for High School Course Catalogues

Applied Communication — College Core-course Equivalent: ½ - 1 Unit English

(also called Technical Writing or Business Communication)

Applied Communication teaches communication, language arts, and English skills as they apply to the workplace. The course focuses on reading, writing, listening, speaking, problem-solving, visual, and nonverbal skills and may be taught as a one- or two-semester course. The following topics are covered in this comprehensive Applied Communication course to fulfill the requirements of ½ to one unit of English for college admission: workplace writing, workplace communications, reading for information, reading, information in the workplace, decision making, problem solving, negotiating to resolve conflict, communicating in teams, self-management, learning to learn, and employment communications.

Applied Mathematics I and II — College Core-course Equivalent: 1 Unit Algebra I

Applied Mathematics I and II teaches algebra concepts in contextual, occupational settings. Arithmetic, algebra, probability, estimation, statistical process control, and problem-solving are presented in an integrated fashion within the curriculum. Innovative lab activities with a business and industry focus on measurement and computation, help students develop critical thinking skills. Workplace-related video programs and practical problem-solving activities are integral parts of the course. Applied Mathematics I (also called Pre-Algebra) and Applied Mathematics II are one-year courses that together are designed to fulfill the requirements of one unit of Algebra I for college admission.

Applied Mathematics III — Core-course Equivalent: 1 Unit Geometry

Applied Mathematics III teaches geometry concepts in contextual, occupational settings. It is a competency-based curriculum that emphasizes problem solving, decision making, and hands-on learning. The National Council of Teachers of Mathematics (NCTM) emphasizes that students should "routinely engage in constructing, symbolizing, applying, and generalizing mathematical ideas." The hands-on laboratory activities and the career- related problems in each unit give students many opportunities to practice this emphasis. Workplace-related video programs help motivate the students to study the math concepts introduced. Applied Mathematics III is a one-year course that is designed to fulfill the requirements of one unit of Geometry for college admission.

Applied Economics — Core-course Equivalent: ½ - 1 Unit Social Studies

(also called Personal Finance or Consumer Economics)

Applied Economics is a one-semester or full-year course that provides a sound foundation in the principles and concepts of economics, especially those affecting the free market and workplace. It is designed to describe the basic characteristics of the American economic system, demonstrate how fundamental economic concepts such as markets operate in the American system, develop the students' understanding of the economic principles that influence business decisions, help students grasp the economic roles governments play in a market economy, provide hands-on experiences in the operation of a business, and provide opportunities for students to interact with representatives of the business community. The following concepts will be presented in an Applied Economics class to fulfill the requirements of ½ to one unit of Social Studies for college admission: producing, exchanging, consuming, saving, and investing.

Applied Psychology — Core-course Equivalent: ½ Unit Social Studies

Applied Psychology is an applied social science course that uses the theoretical principles of psychology with the practical application of examples relevant to students. Students will learn how behavior relates to an individual's sense of control and thinking to contribute more positively to society. The following concepts will be presented in a one-semester Applied Psychology course to fulfill the requirements of ½ unit of Social Studies for college admission: introduction to the study of behavior, life span (developmental psychology), personality, behaving with others (social psychology), and physiological aspects of behavior.

Marketing I — Core-course Equivalent: 1 Unit Social Studies

(also called Fundamentals of Marketing, Beginning Marketing, Introduction to Marketing, and Marketing 1 & 2 - first year of a two- year program)

Marketing I is a one-year course that provides a sound foundation in the principles and concepts of economics, the fundamentals of marketing, and the free market as well as other economic systems. All of the 21 basic economic concepts defined by the National Council on Economic Education are covered in addition to introductory knowledge of the fields of marketing, management and entrepreneurship. The following foundations and functions are presented to fulfill the requirements of one unit of Social Studies for college admission: economic, marketing and business, and human resources foundations and functions of marketing.

Entrepreneurship — Core-course Equivalent: ½ - 1 Unit Social Studies

(also called Small Business Management and Entrepreneurship or Marketing II)

This Entrepreneurship course explores the fundamental principles of starting and operating a small business venture. It focuses on the marketing and management principles necessary to start and operate an independent small business, franchise or other entrepreneurial venture. Cooperative marketing internships, simulations, and/or shadowing experiences may be used to enhance course instruction. The following topics are included to fulfill the requirements of ½ to one unit of Social Studies for college admission: exploration of entrepreneurship, nature of small business, business opportunities, global markets, business plans, assistance for entrepreneurs, types of ownership, marketing analysis, location, pricing, financing the business, legal issues, business management, human resources management, promotion, selling, record keeping, financial analysis, credit, risk management, and operations.

Applications in Biology/Chemistry — Core-course Equivalent: 1-3 Units Natural Sciences

Applications in Biology/Chemistry (ABC) is an interdisciplinary lab science course that teaches science in context through issues and topics surrounding work, home, society, and the environment. The course includes the scientific fundamentals of biology and chemistry and provides a foundation for careers in industrial technology, agriculture and agribusiness, health occupations, and family and consumer sciences. Depending on how the course is designed, it may be equivalent to one unit of Natural Science for college admission as follows:

Biology Focus:	Plant Growth & Reproduction, Continuity of Life, Animal Life Processed, Microorganisms.
Chemistry Focus:	Air and Other Gases, Water, Nutrition.
Agriculture Focus:	(1) Animal Science Continuity of Life, Animal Life Processes, Microorganisms, Nutrition. (2) Plant Science Plant Growth & Reproduction, Continuity of Life, Water, Community of Life, Waste & Waste Management. (3) Environmental Microorganisms, Water, Community Life, Natural Resources, Waste & Waste Management Studies.
Health Focus:	Microorganisms, Nutrition, and Disease and Wellness.
Science Focus:	Community of Life, Natural Resources, and Waste & Waste Management.

BSAA - Animal Science **Core-course Equivalent: ½ Unit Natural Sciences (Biology)**
(BSAA = Biological Science Applications in Agriculture)

BSAA - Animal Science is a one-semester course designed to reinforce and extend understanding of science by associating scientific principles and concepts with relevant applications in agriculture. Students will examine major phases of animal agriculture and specific biological science concepts that govern management decisions in the animal industry. This course will deepen students' understanding of science as content and as a process through the use of numerous laboratory exercises and experiments. Students can also establish a Supervised Agricultural Experience Program and participate in agricultural science activities of the FFA. The following topics will be included to fulfill the requirements for ½ unit of Natural Science for college admission: scientific investigation method, animal genetics, growth and development of animals, animal reproduction, aquaculture, and processing animal products. One year of biology is recommended as a prerequisite to enrollment.

BSAA - Plant Science **Core-course Equivalent: ½ Unit Natural Sciences (Biology)**
(BSAA = Biological Science Applications in Agriculture)

BSAA - Plant Science is a one-semester course designed to reinforce and extend understanding of science by associating scientific principles and concepts with relevant applications in agriculture. Students will examine major phases of plant growth and management in agriculture and specific biological science concepts that govern management decisions. This course will deepen students' understanding of science as content and as a process through the use of numerous laboratory exercises and experiments. Students can also establish a Supervised Agricultural Experience Program and participate in agricultural science activities of the FFA. The following topics will be included to fulfill the requirements for ½ unit of Natural Science for college admission: agriculture and the environment, managing inputs for plant growth, initiating plant growth, managing plant growth, reproduction in plants, and handling, storing and processing plant products. One year of biology is recommended as a prerequisite to enrollment.

ChemCom **Core-course Equivalent: l Unit Natural Sciences (Chemistry)**

ChemCom (Chemistry in the Community) is a one-year, laboratory-based chemistry course designed for students planning to attend colleges and universities. The course contains less mathematical manipulations but more organic chemistry, nuclear chemistry, industrial chemistry and biochemistry than a conventional chemistry course. Problem-solving and decision-making skills, which require student participation and cooperation for success, are emphasized. Forty percent or more of the classroom activities revolve around the laboratory. The following topics will be included to fulfill the requirements for one unit of Natural Science for college admission: physical and chemical properties, formula and equation writing, elements and compounds, nomenclature, stoichiometry, mole concept, energy relationships, atomic structure, chemical bonding, shape of molecules, solids, liquids, gases, reaction rate/kinetics, acids, bases, and pH, oxidation/reduction, disassociation, solutions and solubility, periodicity, gas laws, scale and order of magnitude, metric measurements, equilibrium, synthesis, and analysis.

Principles of Technology **Core-course Equivalent: 1 Unit Natural Sciences (Physics)**

Principles of Technology is a two-year applied physics course designed for students who learn more effectively with a hands-on approach as opposed to the traditional abstract, mathematical approach. It is designed to present the discipline of physics in the context of how it is practically experienced in the world and how it is used in technology. The course covers 14 basic technical principles with emphasis placed on how the principals unify an understanding of the mechanical, fluid, electrical, and thermal systems found in modern technical equipment. The following topics will be included to fulfill the requirements for one unit of Natural Science for college admission: force, work, rate, resistance, energy, power, force transformers, momentum, waves and vibrations, energy convertors, transducers, radiation, optical systems, and time constants.

Nebraska Department of Education
TECHNICAL ASSISTANCE

To obtain curriculum materials, resource information or technical assistance for developing applied academics courses that meet or exceed the courses described in the *Guide*, please contact the following Nebraska Department of Education staff.

Category	**Secondary Applied Academics Core-course Equivalents**	**Nebraska Department of Education Curriculum Consultants**
English	Applied Communication	Bonnie Sibert 402-471-4818 bsibert@nde.state.ne.us Kim Larson 402-471-4336 klarson@nde.state.ne.us
Mathematics	Applied Mathematics I and II (Algebra I) Applied Mathematics III (Geometry)	Deborah Romanek 402-471-2503 dromanek@nde.state.ne.us
Social Studies	Applied Economics Applied Psychology	Larry Starr 402-471-2449 lstarr@nde.state.ne.us
	Entrepreneurship Marketing I	Gregg Christensen 402-471-4803 glc@nde.state.ne.us
Natural Sciences	Applications in Biology/Chemistry ChemCom Principles of Technology	Jim Woodland 402-471-4329 woodland@nde.state.ne.us
	BSAA - Animal Science BSAA - Plant Science	Craig Frederick 402-471-2451 frederic@nde.state.ne.us

APPLIED MATHEMATICS

Description. One essential part of Tech Prep at Kearney High School is CORD's *Applied Mathematics*. Kearney High School has integrated much of the *Applied Mathematics* curriculum, concepts and approaches to teaching mathematics throughout its entire mathematics curriculum. The latest in technological equipment such as the Texas Instruments Calculator-Based Laboratory™ (CBL™) System, graphing calculators, and computers are used to help show students how relevant mathematics is in the workplace by looking for connections to other areas of mathematics and real-world applications. Skills are taught by teaching problem solving through hands-on, activity-centered approaches. All of the mathematics courses at Kearney High School use approaches similar to those mentioned below.

Examples of how *Applied Mathematics* concepts have been integrated into the curriculum include introducing slope and linear equations by collecting data from activities that compare the weight and volume of various amounts of water. That data is then used to develop a relationship between weight and volume which happens to be linear in nature. A linear relationship between two variables is discussed and slope is introduced. Measuring the grade of a hill, the height of the water tower, or the pitch of a house roof makes it possible to give students hands-on experience working with the right triangle relationships. Activities involving pendulums, the inverse square law, and the Pythagorean Theorem are useful to show how roots and powers are used. These activities require students to measure (distance, length, time, etc.), collect data, and develop equations which involve powers and roots.

Being exposed to mathematics is not enough in today's world of work. Students must also be able to apply the mathematics they learn. Doing activities like the ones described above will help give students a working knowledge of mathematics. The classroom experiences demonstrate that students are more excited about mathematics when it is applied. They see meaning in what they are learning, and it improves retention.

Program Areas. Mathematics
Grade Level. 9 - 12th Grades
Contact. Tom Shield, Kearney High School, 3610 6th Avenue, Kearney, NE 68847, (308) 237-6100.

B. CAREER ACADEMIES

Overview

Career Academies are organized as "schools-within-schools" in which groups of students (usually 30 to 60 per grade in grades 9 through 12 or 10 through 12) take several classes together each year with the same group of teachers. The goal of the school-within-a-school is to promote more constructive relationships between and among teachers and students and thereby to increase students' engagement and success in high school. Each Academy focuses on a career theme, such as business and finance, electronics, or health occupations, to provide opportunities for teachers and students to integrate academic and occupation-related classes in an effort to enhance their relevance to the real world while preserving academic rigor. Academies also forge partnerships with local employers from a particular field to help plan and guide the program, and to serve as a source of adult mentors and work internships for the students.

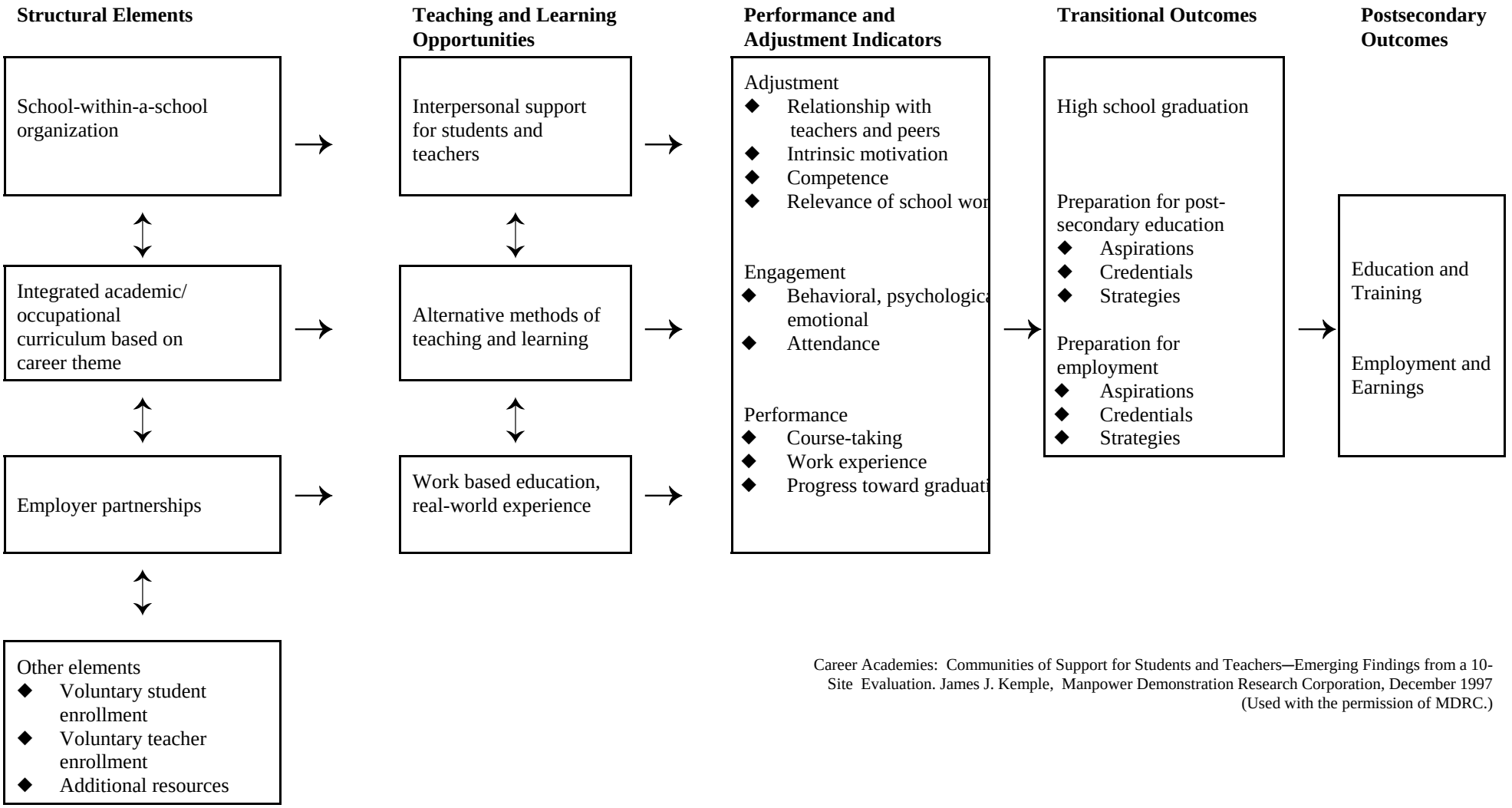
While Career Academies have existed for over 25 years, the approach has gained greater prominence recently as states and school districts have increased their efforts to restructure high schools. This restructuring is aimed at supporting students academically while providing them with marketable skills, work based learning experiences, and smoother transitions to postsecondary education and productive employment. Interest in Career Academies was further accelerated with the passage of the federal School-to-Work Opportunities Act in 1994. The Act provided federal funding and support for states and localities to take a systemic approach to helping schools forge stronger partnerships with their communities and with local employers, and to create opportunities for students to begin making connections between schooling and their career aspirations. The core components of the Career Academy approach reflect many of the cornerstones of the new legislation and its objectives as well as many key dimensions of other reform efforts to improve high schools. While there are no reliable data on the total number of Career Academy programs nationally, current estimates suggest that Career Academies have been established in at least 600 to 700 high schools.

In response to today's changing global economy, the national school-to-work (or school-to career) movement has ushered in a variety of approaches to restructuring high schools in the United States. At stake is an attempt to support students academically while providing them with marketable skills and clearer pathways to a productive life beyond high school. Career Academies, which are among the best established and most promising of these approaches, embrace the key principles of the school-to-work movement by integrating academic and career and technical instruction, providing work based learning opportunities for students, and preparing students for postsecondary education, employment, or a combination of both. The Academies also reflect key principles of broader school reform initiatives by reconfiguring high schools into smaller, more personalized schools (the "school-within-a-school"), providing teachers with more control over their work through decentralized management, and developing interdisciplinary curricula.

The Career Academy approach was first developed in the late 1960s in Philadelphia as a strategy to prevent students from dropping out of high school and to help them prepare to enter the work force after graduation. By the mid-1990s, over 500 Career Academies had been established across the country through a variety of national, state, and school district initiatives. The goals of many Career Academies have also expanded to include improving *all* students' engagement (that is, active and interested involvement) and performance in school and preparing them for postsecondary education as well as a career. That is, today's Career Academies embrace a broad cross-section of high school students—not just those believed to be at risk of dropping out of high school.

Career Academies: Communities of Support for Students and Teachers—Emerging Findings from a 10- site Evaluation. James J. Kemple, Manpower Demonstration Research Corporation, December 1997
(Used with the permission of MDRC.)

Career Academies Evaluation
Simplified Model of the Career Academy Approach



Career Academies: Communities of Support for Students and Teachers—Emerging Findings from a 10-Site Evaluation. James J. Kemple, Manpower Demonstration Research Corporation, December 1997 (Used with the permission of MDRC.)

Creating and Sustaining High Student Expectations/Outcomes

Excerpts from Career Academies Presentation, December 5, 1997, Omaha, Grace Sammon, President, GMS Partners, Inc., and co-founder, the National Career Academy Coalition (NCAC), Silver Spring, MD, Phone 301-649-6354, E-mail: gms@gmspartnersinc.org

Academy Mission	◆ Improve student performance and graduation rates ◆ Raise students' ambition about learning and careers ◆ Provide students with a solid academic and technical foundation ◆ Satisfy the local demand for a skilled workforce
Academy Structures-The Solution	◆ School-within-a-school: Family atmosphere - a team of teachers and students ◆ Recruits students who enter by choice ◆ Focuses on career theme ◆ Student work based experiences ◆ Employer representation on advisory boards ◆ Parent involvement ◆ Mixture of funding sources
The Academies Structures Vary	◆ Students and teachers who enter by choice ◆ Two-three- or four year high school program combining academics and field experience in a career cluster area. ◆ Block of shared time from 1-2 periods/day to full cohort model
Academy Characteristics	◆ A mission, set of values, attributes that describe the Academy completers ◆ Learning activities for basic competencies presented cooperative by teams of instructors ◆ Diverse learning activities: experiential, collaborative, cooperative - with a theme ◆ Appropriate experiences on college campuses, businesses, and government ◆ Regular out-visits related to theme ◆ Structured activities that develop success oriented, positive self-image and good citizenship ◆ College credit course during high school ◆ Training for employability, related to issues and skills ◆ Placement for college, scholarship, and job assistance ◆ A well organized advisory group ◆ Intensive staff development
Academy Needs	◆ True partnerships ◆ Teacher training and designated staff ◆ A cohort schedule that allows students, teachers and partners the flexibility and building of a family atmosphere. ◆ IPAs - Executives on Loan ◆ Expertise and materials ◆ Resources and funding ◆ Something to give back to business
Student Needs Beyond the Classroom	◆ Role models - mentors ◆ Assistance with negotiating public systems ◆ Personal development ◆ Personal issues: health, housing, insurance, family demands

Creating and Sustaining High Student Expectations/Outcomes

Excerpts from Career Academies Presentation, December 5, 1997, Omaha, Grace Sammon, President, GMS Partners, Inc., and co-founder, the National Career Academy Coalition (NCAC), Silver Spring, MD, Phone 301-649-6354, E-mail: gms@gmspartnersinc.com

Techniques for Successful Academies	◆ Clear, focused leadership ◆ Collaboration with school administration, "System" and stake holders-supports the structure ◆ On-going dialogue about mutual goals and stakes ◆ On-going evaluation ◆ Flexibility
Business & Government and Community Resources	◆ Solve an important problem of the high school by providing links to the "outside" world ◆ Provide an opportunity to put academics in a practical context ◆ Serve on Advisory Boards that: -deal with short term concerns and long term vision -assist with recruitment -help acquire equipment, resources, funds -help with recognition and scholarships
Curriculum Requirements	◆ Student centered ◆ Thematic; with appropriate use of technology ◆ Delivered by a teaching cohort and business partners ◆ Solidly grounded in both academic and real-world experiential learning ◆ Sensitive to authentic assessment
Employability Programs	◆ Appropriate introduction through in and out-visits ◆ Increasingly demanding interactions and accountability ◆ Tie to school-learning ◆ Teacher buy-in ◆ Brief-cases, INSIGHTS, Metro MANIA SHADOWS, MENTORS (Examples of a 4-year skill development model)
Student Employability Programs	◆ Developing workplace skills ◆ Building links to the community ◆ Providing real-world learning ◆ Becoming a professional
The Why of Employability Skills	◆ Definition: skills students develop to seek *and maintain* employment and postsecondary experiences ◆ Enhances the curriculum in ways "class" cannot ◆ Builds self esteem ◆ Provides substantive links to partners ◆ Serves as a model for school-to-work ◆ By student report: the 1st or 2nd most important part of academy ◆ Increased interest in this aspect of the academy by government and business -children stay in school -become involved with a caring community of adults -gain marketable skills -are less likely to be involved in gangs, violence, teen pregnancy, and crime -real economic and social "pay off' for the programs ◆ Result: national strategy and policy

Creating and Sustaining High Student Expectations/Outcomes

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The When	◆ The longer the exposure, the greater the personal/professional development ◆ The longer the exposure, the greater the commitment and involvement of partners ◆ The earlier, the more developed an appreciation for work ◆ Our backward design.....
Monitoring and Evaluation	◆ Some studies point to a 90% failure rate for school/business partnerships -constant follow-up -true partnership -honest assessment -timeliness ◆ Meetings! Meetings! Meetings! -at work site, with parents as a teaching team ◆ Evaluation: formal and not
Evaluation and Monitoring	Criteria ◆ school-within-school ◆ integrate academic and technical ◆ partnership with employers Purpose ◆ are the outcomes real and how are the results produced Types ◆ Informal: teachers/parents/student ◆ Partner evaluation
Performance Outcomes	Students ◆ stay in school and graduate ◆ are leaders and athletes have the knowledge, skills and abilities to secure college acceptance, scholarships and employment ◆ increased attendance ◆ raised GPAs, attaining of Carnegie units and college entrance
Building, Monitoring & Sustaining Academies	Determine where to start and what resources are available ◆ career theme ◆ teacher interest ◆ partner support ◆ parents/guardians as resources ◆ decide perks and ramifications for students ◆ begin small ◆ include all stakeholders in process: Students, Parents,/Guardians, and School Administration, Teachers, Partners ◆ Accountability ◆ Flexible funding ◆ Student report ◆ Adherence to center of mission ◆ Students return as alumni partners ◆ Communication with partners ◆ Flexibility

Creating and Sustaining High Student Expectations/Outcomes Excerpts from Career Academies Presentation, December 5, 1997, Omaha, Grace Sammon, President, GMS Partners, Inc., and co-founder, the National Career Academy Coalition (NCAC), Silver Spring, MD, Phone 301-649-6354, E-mail: gms@gmspartnersinc.com	
National Career Academy Coalition: building a network of support nationally	◆ A 501(c)(3) specifically designed to create and support a national network of existing and emerging academies at the high school level ◆ Attracts and identifies resources ◆ Reaches out to the private and public sector to promote their involvement with the academy model
"Partnering" With a National Coalition	◆ Networking for ideas: Program enhancements, Curriculum sharing ◆ Linking business partners with their counterparts in other cities ◆ Local and national visibility ◆ Advancing the mission of academies ◆ Federal agencies involved nationwide ◆ Ties to counterparts in state and local government ◆ Grants and supports ◆ Creating academy networks of like career areas

Nebraska Success Stories

ACADEMY OF FINANCE

Description. The Academy of Finance is designed to provide a two-year program in finance for juniors and seniors. It involves businesses, schools, parents and students working together for the ultimate benefit of young adults, the financial services industry and the community.

Students complete course work in Economics and the World of Finance, Banking and Credit, International Finance and Principles of Finance, Accounting, and Computer Information Management along with other electives and other required courses for graduation/college credit. Between junior and senior years, students participate in paid summer internships at sponsoring firms all day for six weeks.

Omaha North High School, Northwest High School and South High School offer this program.

Program Areas. Business Education, Marketing Education, Social Sciences
Grade Levels. 11 - 12th Grades
Contact. Omaha Public Schools, 3215 Cuming Street, Omaha NE 68131, (402) 557-2615.

C. ENTREPRENEURSHIP PROJECTS/CLASSES

Overview

Entrepreneurship experiences assist students in developing the competencies needed to own and manage enterprises. Students must maintain complete and accurate records. Entrepreneurship experiences could include farms, businesses, homes, schools or community facilities. At the site, students manage materials to produce a product or service.

The student plans, implements, operates and assumes the financial risk in a business that includes production and distribution of goods and/or services. An entrepreneurship experience provides students with the opportunity to develop the necessary skills and competencies to become established in their own business or to gain employment.

Setting Up Quality Entrepreneurship Experiences

Student Responsi-bilities	◆ maintaining complete and accurate records ◆ managing daily operations ◆ making business decisions ◆ an experience of sufficient duration to complete at least one business cycle ◆ an experience comprehensive in nature that shows growth in quality and quantity ◆ incorporating improvement activities that increase the efficiency of the business ◆ expanding the experience as additional skills are learned
Student Decisions	Prior to selecting an entrepreneurship experience, students should identify career goals and answer the following questions. ◆ What are my career goals? ◆ Do I want to continue my entrepreneurship experience after high school? ◆ How will I use the profits of the experience; to refinance and enlarge the operation, to start or add to a college fund, and/or to pay off debt? ◆ Is this experience a vocation or a hobby? ◆ What types of facilities and equipment are needed? ◆ What are the time requirements? ◆ Do I have the time to invest? ◆ What type of records should be kept? ◆ How much profit is needed?
Accounting Procedure Questions	School-based enterprises are to be planned learning experiences with varied and expansive learning opportunities provided throughout the process. Although the business is to run on a profit, it is important to recognize that learning opportunities are more important in the School-to-Work system than profit. Accurate, up-to-date accounting is key to the success of the enterprise. The following questions and answers guide the accounting procedures for the school-based enterprise. Consult your business administrator concerning Generally Accepted Accounting Principles (GAAP) accounts. **If a school-based enterprise has its start-up cost supplied by the district, what accounting procedures must be used?** *Answer School-based enterprises are run based on a fundamental premise that the enterprise will break even. If there are profits, the money returns to the dedicated fund account. Money to be reimbursed for start-up costs may be transferred to the general account through a board resolution only.* **If a school-based enterprise receives start-up funds from a business or local education funds, what accounting procedures must be used?** *Answer: The business has the right to designate what the money is used for within the enterprise. The business has the right to ensure all donated funds and/or equipment remain solely as a part of the program. All accounting of money should be recorded in the special revenue accounts under the GAAP system.* **If a school business enterprise receives its start-up costs through a federal or state grant fund, what accounting procedures must be put in place?** *Answer: All accounting must be in the special revenue category. Profits are to be utilized in one of the following ways:* ◆ *use money for replacement of equipment, supplies and materials for the future enterprise.* ◆ *use money to provide enrichment learning opportunities tied to the career major.* **If you want to roll profits forward from the enterprise, what accounting procedure should be used?** *Answer: Use the enterprise fund account to record income, expenses and retained earnings. No more than three months operating cost should be held in the account.*

Entrepreneurship Course Content

Entrepreneurship courses explore the fundamental principles of starting and operating a small business venture. Course content focuses on the marketing and management principles necessary to start and operate an independent small business, franchise or other entrepreneurial venture. Cooperative marketing internships, simulations, and/or shadowing experiences may be used to enhance course instruction. A comprehensive entrepreneurship course should include the following topics to fulfill the requirements of ½ to one unit of Social Studies.

Entrepreneurship Core-course Equivalent: ½ - 1 Unit Social Studies **(also called Small Business Management and Entrepreneurship or Marketing II)**	
Exploration of Entrepreneurship	Covers entrepreneurship as a career option and personal goal, and exploration of entrepreneurial potential.
Nature of Small Business	Emphasizes the importance of small business, factors contributing to success, and the role of the entrepreneur in the American and world economies.
Business Opportunities	Focuses on identification of business opportunities and evaluation of business options.
Global Markets	Investigate the role and potential of international trade and opportunities of global markets.
Business Plans	Covers the steps for preparing a business plan and the process of developing a targeted plan.
Assistance for Entrepreneurs	Includes technical assistance options, assistance commonly needed, and the process for obtaining assistance.
Types of Ownership	Analyzes sole proprietorships, partnerships, and corporations, criteria for selection of a form of ownership, and evaluation of advantages and disadvantages of each form.
Marketing Analysis	Investigates the process of marketing analysis and its use in developing a business plan.
Location	Identifying the factors for site selection, determining appropriate locations, and choosing the best option.
Pricing	Analyzes pricing in the marketing mix, pricing strategies, and establishment of a pricing strategy.
Financing the Business	Examines the personal risks involved in financing a business, factors in obtaining financing, information needed for financing, and financing strategies
Legal Issues	Identification of legal issues, legal responsibilities of the entrepreneur, and legal assistance necessary.
Business Management	Outlines the role of management in a successful business, specific management techniques for small business, and management strategies.
Human Resources Management	Defines human resource management, techniques used, and human resource/management policies.
Promotion	Emphasizes the role of promotion, options in small business promotional planning, and creating an effective promotional plan for a business.
Selling	Includes analysis of the selling process appropriate selling strategies for various businesses.
Recordkeeping	Explains the importance of effective recordkeeping, types of financial data obtained from business records, and designing a recordkeeping system.
Financial Analysis	Focuses on the importance of financial analysis, the process used in financial analysis, and procedures for analysis and control.
Credit	Includes the advantages and disadvantages of customer credit in small business, management of customer credit, and determining credit policies/procedures.
Risk Management	Explains the risks faced by entrepreneurs and includes risk management strategies.
Operations	Focuses on operations issues in a business venture, operational policies and procedures, and the determination of operational and logistical strategies for a business.

Junior Achievement Project/Classes

Junior Achievement is a nonprofit economic education organization that operates in communities across the nation and in more than 100 countries worldwide. It has programs at each grade level, K-12, designed to provide a fundamental understanding of the American free enterprise system.

Junior Achievement's purpose is to educate and inspire young people to value free enterprise, business, and economics to improve the quality of their lives.

Its Elementary School Program teaches students knowledge and skills they will need to become productive workers and effective citizens. The Middle Grades Programs teach personal economic skills, national and global economics, and the value of staying ins school to leading rewarding lives. High School Programs provide opportunities for students to understand and apply fundamental economic concepts, business principles, and workplace competencies.

At the heart of Junior Achievement programs are the thousands of classroom volunteers, from many parts of the community and different walks of life, who deliver its programs in school classrooms.

Junior Achievement programs are rigorously and continuously evaluated by outside researchers. The findings indicate that they are having a positive and significant impact on student learning.

ELEMENTARY SCHOOL PROGRAM

In Junior Achievement's Elementary School Program, kindergarten through sixth-grade, children learn concepts and skills at each grade that build on those taught in preceding grades. In the primary grades, program themes emphasize family, neighborhood, community, and city economics. In the upper elementary grades, program themes expand to explore regional, national, and world economies.

This sequential approach is designed to show students how the market system works, its relationship to democratic values, and their responsibilities in this system. Students learn how and why people assume roles as citizens, consumers, workers, and employers.

Each grade-level theme includes a variety of activities to help young students develop appropriate decision-making and workplace skills. The concepts and skills taught are particularly relevant to their social studies classes and can be integrated with the general school curriculum.

Elementary School Program Themes

- *Ourselves:* Students are introduced to basic personal economic issues and the roles individuals assume as workers, consumers, and family members.
- *Our Families*: Students learn about the role of their families in the local economy, the jobs they have, and their economic needs and wants.
- *Our Community*: Activities demonstrate the responsibilities and opportunities that citizens have in their economic community.
- *Our City*: Students conduct business operations, make city planning decisions, and examine economic development issues.
- *Our Region*: Students learn about state economies, the economic resources of regions, and the decisions businesses must make.
- *Our Nation*: Students carry out activities for operating a business in the U.S. economy, including management, marketing, production, and an annual stockholders meeting.
- *Our World*: Students examine world economic resources, learn about economic systems, and engage in global trade using international currencies.

MIDDLE GRADES PROGRAMS

Junior Achievement offers four programs for middle and junior high schools nationwide. With each program, a business volunteer, in cooperation with the teacher, leads activities and discussions related to economic and business topics.

The programs teach students business and economic concepts, help them prepare for productive careers, and provide experiences in personal economics management. All of the programs are appropriate for grades seven through nine. However, because of the curriculum requirements of most school districts, *Personal Economics* tends to be taught at seventh grade, *Enterprise in Action* at eighth grade, and *The International Marketplace* in ninth grades.

The *Economics of Staying in School (ESIS)*, as its name implies, is designed to help students explore the impact of dropping out of school. This program may be taught as a separate curriculum or integrated with any of the other three programs.

All of the Middle Grades Programs supplement the general school social studies curriculum.

Personal Economics: Focuses on career exploration and personal money management.

Students

- assess personal skills and interest
- explore career options
- learn job-hunting skills
- develop personal budgets and examine family financial management issues

Enterprise in Action: Explores the U.S. economic system and the role of business.

Students

- learn about organizing and operating a business enterprise
- explore how markets work
- examine the role of government in the economy
- study the social responsibilities of business

The International Marketplace: Connects students through trade to people and cultures around the world.

Students

- examine the resources of countries and how they affect cultures and economic ways of life
- study the benefits of the barriers to international trade
- learn to convert currencies
- analyze international economic issues

The Economics of Staying in School: Demonstrates the benefits of staying in school through six engaging activities.

Students

- discover the relationships among education, career options, and earnings
- explore the financial costs and opportunity costs of an education
- prepare monthly household budgets
- assess personal skills and aptitudes
- define success and identify goals that would enable them to achieve it.

HIGH SCHOOL PROGRAMS

Junior Achievement's High School Programs include:

- Economics: (formerly Applied Economics) and Junior Achievement's only full-semester program
- JA Connections: a new three-component curriculum designed for school-to-career programs
- The Original Company Program: recently reconfigured for school classrooms and clubs
- GLOBE: a unique global economics program developed by Junior Achievement's International affiliate

These programs can be offered in a variety of sequences at grades nine through 12, with the exception of the Economics course, which is designed for grades 10 through 12. Local business consultants are the key to the high school programs. As experienced managers and executives trained by Junior Achievement, they bring practical business ideas and economic insights to the school classroom.

Economics: The Economics curriculum is a one-semester course that includes:

- Text: A 16-chapter book explaining microeconomic, macroeconomic, and international economic principles. It is illustrated with graphs and charts and features biographies of major economic philosophers, stories by innovative entrepreneurs, and enrichment reading.
- **Study Guide**: A student workbook with readings and exercises that reinforce concepts and foster critical-thinking skills.
- **Guide for Teacher and Consultants**: A student workbook with readings and exercises that reinforce concepts and foster critical-thinking skills.
- **Evaluation Materials**: Testing products that include pre- and post-tests, a computer-based test generator, and a 100-question final exam.
- **Computer Based Simulations**: Microeconomic and macroeconomic activities.

JA Connections: contains three components that help students acquire the knowledge, skills, and personal characteristics to develop productive careers and contribute to their community and larger society. Each component can be used separately supplement the school curriculum, grades nine through 12, or the three can be employed together as the curriculum for a separate high school course.

- **Success Skills**: With the component, students
  - -learn about the workplace environment
  - -use interpersonal skills to build rapport and influence others
  - -develop questioning and listening skills
  - -learn teamwork competencies
  - -assess their own workplace effectiveness using video
  - -develop a personal skills portfolio, including resume and formal job application
- **Workplace Internships**: This component provides on-the-job experience for students, who work with a sponsor to apply the skills studied earlier to the workplace.
- **Leadership JA**: In this component, students learn the characteristics and values of effective leadership and apply these ideas to economic issues and community work. Students
  - -examine the roles, relationships, and core values of leaders
  - -identify examples of leadership in the economic development of a community
  - -apply leadership principles to service learning

Company Program: By organizing and operating an actual business enterprise in school, students learn how businesses function and learn about the economic system. Students

- -sell stock to raise capital
- -elect officers
- -develop a business plan
- -manage daily company operations
- -pay a dividend to stockholders
- -liquidate their company
- -develop leadership skills they can apply as business people and citizens in their community

The Company Program can serve as a model for extracurricular clubs and organizations in school.

Globe: Students in a U.S. classroom set up an import/export company with their counterparts from another

nation and conduct business. The class
-operates a joint-venture partnership and multinational company
-trades in a foreign currency, uses exchange rates, examines trade restrictions, and practices business ethics
-works with students from another country and learns about their customs and culture

Junior Achievement Inc., National Headquarters, 45 Clubhouse Drive, Colorado Springs, CO 80906, http:\\www.ja.org 1-800-THENEWJA.

Nebraska Success Stories

GREENHOUSE MANAGEMENT

Description. Students from Schuyler Central High School enrolled in Greenhouse Management Class to get a hands-on learning experience in unit cost analysis. Students manage various crops from propagation to marketing. Each student must run a cost per unit and break-even accounting system for a major and minor crop. This type of accounting helps the students market their crop. The greenhouse crops are sold for various city and community projects as well as to local retailers.

The class also spent time building a greenhouse for one of the class members. They worked one day in a commercial greenhouse learning mass transplanting.

Program Areas. Agriculture Education
Grade Level. 9 - 12th Grades
Contact. Tom Wheeldon, Schuyler Central High School, 401 Adams, Schuyler, NE 68661, (402) 352-2421.

"MAKE IT YOUR BUSINESS" INTEGRATION PROJECT

Description. To give the Friend students a realistic picture of business, the eighth grade Family and Consumer Sciences and Industrial Technology students form manufacturing companies. Students apply and interview for various jobs within their companies. By being involved in a small scale business, students learn about management, employee responsibilities, communication and production while learning skills in these curriculum areas. The companies in Family and Consumer Sciences manufacture small fabric bunnies while Industrial Technology produce wooden banks.

During the unit, the Mathematics and English classroom teachers become involved, and they integrate various aspects of the project into their curriculum. After two to three weeks of production, the finished products are purchased by students at an auction. The students are able to use simulated money earned as a company employee.

Program Areas. English, Family and Consumer Sciences, Industrial Technology, Mathematics
Grade Level. 8th Grade
Contact. Margo Muhlbach, Friend Public School, Box 67, Friend, NE 68359, (402) 947-2781.

D. SCHOOL BASED ENTERPRISE

Overview

School-based enterprises assist students in developing the competencies needed to own and manage enterprises. Students in school-based enterprises must maintain complete and accurate records. Students work in the school-based enterprise site on a weekly basis and help establish work schedules to operate the enterprise.

In some school-based enterprise experiences, the school district owns the materials and other required inputs and the students keep financial records to determine returns on investments. The students plan, implement, operate and evaluate the operation of the business, including the production and distribution of goods and/or services. Other school-based enterprises involve public and private partnerships. In such partnerships, the private business provides the equipment and materials necessary to establish and operate the business while the district provides staff for instructional and supervision purposes. A school-based enterprise provides an opportunity for students to develop the necessary skills and competencies to establish their own businesses or to gain employment.

The suggestions given for *Setting Up Quality Entrepreneurship Experiences* in *Part C: Entrepreneurship Project/Class* in this manual would be invaluable in starting a School Based Enterprise.

Student Responsibilities

In developing a quality, comprehensive school-based enterprise, students are responsible for:

- ordering and purchasing the materials or other inputs required for the business;
- maintaining complete and accurate records;
- managing daily operations;
- making business decisions;
- an experience comprehensive in nature that shows growth in quality and quantity;
- incorporating improvement activities that increase the efficiency of the business;
- expanding the experience as additional skills are learned.

Nebraska Success Stories

IOTA INC. - THE WAVE OF THE FUTURE

Description. Maxwell Public School has formed IOTA, Inc., a program designed to educate rural students into the community rather than out of it. Students are developing the skills necessary to own, operate, and manage their own businesses.

In 1992 the school was the recipient of a Crossroads Education Grant from Apple Computer, Inc. A complete lab, including Macintosh computers, a CD-ROM, modem, scanner, several printers and software, was provided. In fulfillment of the grant, students began providing services for farmers, ranchers, businesses, and organizations as they learned to use the word processor, databases, spreadsheets, accounting, desktop publishing, and computer-aided design.

The computer services offered by the school run the gamut from accounting, advertising, designing of tickets and programs to forms for medical offices and tax receipts for service stations. Students in the business department act as consultants and advisors, training small business owners to develop and maintain their own accounting procedures.

Beginning in 1993, an entrepreneur class was offered to advanced business students. Students in this class contract with other classes to study the management and ownership of a business of their choice. The 1995-96 school year brought about an exciting development with a student applying for and receiving a loan to start her own business enterprise. What started out four years ago as a small lab with eight Macintosh computers has grown into three dedicated labs.

Maxwell School was featured on the cover of the October 1995 issue of *Electronic Learning*. Entrepreneurship projects have won district, state, and national competitions; and students have been asked to participate in technology showcases

at the State Capitol. The students' enterprise has been a boost for the technology program, bringing in awards from The Knights of AK-SAR-BEN, US West, and the Peter Kiewit Foundation.

Program Areas. Fine Arts, Business Education, Family and Consumer Sciences, Industrial Technology, Journalism
Grade Level. 9 - 12th Grades
Contact. Kathy Brosius, Maxwell Public Schools, Box 188, Maxwell, NE 69123, (308) 582-4585.

YOGURT/ICE CREAM SCHOOL-BASED ENTERPRISE

Description. Harvard Public School District has developed a school-based enterprise using a rented yogurt/ice cream machine. The enterprise is integrated into the regular curriculum of the school district's advanced accounting class, consumer science classes and applied communication classes. The student council has been invested with business corporation responsibilities and coordinates the interactions between all the classes.

The enterprise specializes in only frozen yogurt/ice cream products at this time and sells them at school activities and community functions. Business has been outstanding to date.

The students are responsible for making the frozen products, advertising, selling, maintaining an inventory and recording all business transactions.

Program Areas. Business Education, English, Technology
Grade Level. 11 - 12th Grades
Contact. Larry Turnquist, Harvard Public School, Box 100, Harvard, NE 68944, (402) 772-2171.

E. TECH PREP PROGRAMS/ARTICULATION

Overview

Tech Prep combines a strong secondary and postsecondary education to prepare students for mid-level technology careers for the twenty-first century. The purpose of Tech Prep is to make the United States more competitive in the world economy by developing more fully the academic and occupational skills of all segments of the student population. After completing a strong academic and technical program, Tech Prep students are well prepared to enter full-time employment or pursue postsecondary educational options.

Tech Prep is NOT: (1) just preparation for a technical college; (2) just a series of applied academic courses; (3) renamed vocational education; or (4) merely a program affecting a small group of students. **Tech Prep IS** a catalyst for reform that transcends barriers that have traditionally prevented the majority of today's high school students from reaching their full potential. As a strategy for systemic reform at the secondary level, Tech Prep encompasses the components listed on the next page.

Nebraska Tech Prep *CAREERS* Goals

1. **COMMITMENT OF LEADERS**. To secure a long-term commitment for Tech Prep education from leaders in business, industry, government and education, thereby enriching collaborative partnerships.

2 **ARTICULATION AGREEMENTS**. To establish horizontal and vertical articulation between and among all levels of educational institutions.

3. **RELEVANCY OF INSTRUCTION**. To evaluate courses and programs (academic and vocational) on an on-going basis to determine appropriateness and relevancy of content and methodology.

4. **EDUCATE STAFF**. To provide inservice for teachers and counselors regarding the changes taking place in the world and how Tech Prep education addresses those changes.

5. **ENRICH CAREER GUIDANCE**. To improve and strengthen career guidance skills for all school personnel.

6. **RESOURCEFUL MARKETING**. To develop a statewide marketing plan which communicates the vision, scope and implementation of Tech Prep education to students, parents, teachers, administrators, business/industry leaders, policy makers, and the community.

7. **SYSTEMATIC REVIEW AND REVISION**. To establish a procedure for annually monitoring the effectiveness of Tech Prep education and providing feedback regarding achievement of established goals.

Tech Prep Components	
Applied Academic Courses	A foundation in applied academic courses in science, mathematics, and communication. These courses are similar in content to traditional college prep courses but use real-life examples and emphasize contextual learning. The course content is rigorous and challenging.
Articulation	Articulation is the process that links two (or more) educational systems within a community to help students make a smooth transition from one level to another without experiencing delays, duplication of courses, or loss of credit. Articulation is a continuous process in which educational programs are reviewed and revised to provide curricula that will prepare students to participate in postsecondary options and to meet the needs of business and industry.
Assessment	Ongoing and continuous assessment of Tech Prep programs is necessary to stay abreast of curricular and program changes as technology mandates changes in the workplace.
Business/Industry Involvement	Business and industry representatives serve on boards and committees to provide direction for programs, to identify competencies, and to assist in curriculum decisions. They help to ensure that high school programs prepare students for current and future employment opportunities.
Career Guidance	Career guidance is provided to all students to assist them in mapping out a course of study to prepare them for future career options. This guidance plan is usually preceded by a middle school career exploration program. Each student's individual career plan is updated at least yearly to reflect current educational and career plans and involves parents in the development and revision.
Competency Based Instruction	Academic and occupational courses are taught using competencies based on job market requirements. These competencies are identified and developed in collaboration with business and industry representatives who serve on school district and state curriculum committees.
Entrepreneurship Education	Students learn the principles of the free enterprise system and how to begin their own businesses.
Integration	Academic and occupational education are combined to provide an activity-based curriculum that motivates students to learn and provides them with an understanding of real world situations. Academic and occupational teachers collaborate and coordinate instruction to provide the connection between academic and occupational education.
Occupational Speciality	Tech Prep students complete an occupational program in one of several technical program areas to ensure that students graduate from high school with marketable skills.
Parental Involvement	Successful completion of Tech Prep requires the full involvement of parents. Parental involvement is critical, especially when students participate in career guidance and choose a work based learning opportunity. Students and their families should meet often with school officials to ensure an optimum educational opportunity is achieved.
Work Based Learning Options	Work Based Learning initiatives such as youth apprenticeship, mentoring, cooperative education, shadowing, internship, and service learning provide work based learning opportunities. These options help bridge the gap between what students are learning in school and what they need to know to be successful in the workplace.
Staff Development	Teachers, guidance counselors, and administrators are provided with relevant and continuous staff development to gain knowledge and acquire skills to improve the teaching/learning experience.

Nebraska Success Stories

MACHINE TOOL TECHNOLOGY 2 + 2 PROGRAM

Description. Students from Columbus High School and surrounding schools are eligible to participate in an articulated program in machine tool technology with the Platte Campus at Central Community College. Students earn credits for a high school diploma as well as up to 12 credit hours that is equivalent to the certificate level at Platte. When students enroll at Platte, the hours are transferred tuition free to Platte. This allows the student advance placement in the machine tool program.

The course runs two periods a day for a year or the equivalent of 20 credit hours at Columbus High School. A feature of the program beginning in the second semester is the shadowing program called Values in Partnership. Students spend one day of the week in local industry rather than going to class for that day. Students see first hand how class theory and lab experiences relate to the world of work. Local industries provide mentors for the students that share their work experiences, background training requirements and other aspects of the job with the student one-on-one.

Program Areas. Industrial Technology
Grade Levels. 11 - 12th Grades
Contact. Tracy Dodson and Steve Woodside, Columbus High School, 2200 26th St., Columbus, NE 68601, 402-563-7050.

TECH PREP EXPERIENCE

Description. Centura's first commitment to Tech Prep was to select an advisory committee from the community to give the program support and direction. Centura then began to in-service school staff, visit other schools with Tech Prep programs, attend workshops, and gather materials. All of this was made available to Centura High School through their articulation agreement with Central Community College.

Since then Centura has integrated Applied Mathematics, Applied Communications, Applied Economics, Workplace Readiness, and Principles of Technology into the curriculum. They have also worked on more drawing boards or curriculum pathways for the students to follow and to reach their career goals.

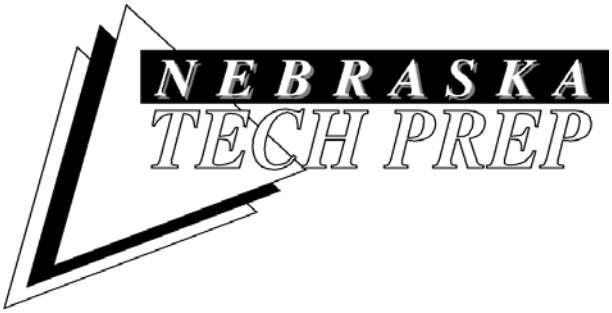
Other new ideas that have been introduced with the Tech Prep initiative are a teacher/adviser program called "Learning a Living" and implementing a student career academic handbook (a Student Career Folder and Planner).

Centura High School believes the Tech Prep experience will allow the school to meet the district goal: Every student will have a career objective and career plan upon graduation.

Program Areas. Careers/Guidance
Grade Level. 7 - 12th Grades
Contact. David Karr, Centura Public Schools, Box 430, Cairo, NE 68824, (308) 485-4780.

Nebraska Articulation Guide

The following *Nebraska Articulation Guide* was created to provide schools with a streamline articulation process for creating seamless educational pathways that help students transition from school to work and/or postsecondary education.



NEBRASKA

ARTICULATION

GUIDE

Secondary/Postsecondary Education Partnering Through Tech Prep Articulation Agreements

TABLE OF CONTENTS

The Win-Win Benefits of Articulation

The benefits of articulation are wide-ranging. Some are immediate and obvious; others are subtle or take time to develop. Here are some of the most important:

Benefits to Students

- Articulation **saves students time and money** by eliminating the need to repeat skills training in college that was mastered in a high school program.
- Articulation **creates clear career training paths** and motivates high school students to consider college education as a viable personal option.
- Articulation **reduces student frustration and improves college retention** by allowing students to enroll in more advanced technical courses rather than making them sit through introductory courses whose content they have already mastered.

Benefits to Educators

- Articulation creates a visible college-stream option for vocational graduates—a potent recruiting tool for occupational programs.
- Articulation motivates high school students to perform well, since students usually must have good grades to qualify the credit made possible through the articulation agreements.
- Articulation can increase both the number and quality of secondary students who enroll in college technical programs and who later go on for a bachelor's degree or other higher-education.
- Articulation improves relationships among faculty and administrators across educational levels by helping them appreciate both the quality and the concerns of each other's programs.

Benefits to the Community

- Articulation helps create a more comprehensive education delivery system, with clearer, easier transition across levels for students.
- Articulation offers incentives for youth to go to college, thus increasing the potential tax base and overall quality of life in the community.
- Articulation helps turn out more and better-trained technicians and managers for local employers—a strong drawing card for attracting or retaining business/industry in the community.

Tech Prep Articulation

Tech Prep articulation provides a coordinated sequence of courses at both secondary and postsecondary education levels to help prepare students for careers involving technical skill and knowledge requirements. An articulated program of study for Tech Prep focuses on applied and integrated instruction in mathematics, science, and communications and is designed to provide technical preparation leading to an associate degree at a community college with options to continue onto four-year baccalaureate degree. A Tech Prep course of study may enhance a student's work based learning transition.

Articulation is one of four foundational components of Tech Prep. Other components include:

- Student career awareness
- Career exploration and development
- Applied and integrated curriculum and instruction
- Partnering with business, industry, and government in the design and implementation processes.

What Is an Articulation Agreement?

An articulation agreement establishes a curriculum and educational pathway for students so they may easily make their transition from secondary schools to higher education. It is an effective way to encourage high school students to plan and continue their education. Through the Tech Prep articulation process, program linkages between area high schools and the community college are formed to help students make a smooth transition from one level to another without experiencing delays or duplication of courses.

What Is the High School's Role in Tech Prep Articulation Agreements?

Each school must decide if they wish to participate. The high school must offer appropriate courses, content for articulation, and the official documentation of their course objectives or exit competencies. Secondary school administration and faculty must consult and evaluate course competencies jointly with the community college faculty and administrators. Tech Prep staff development funds are generally available to compensate educators involved in the articulation process.

How Does the Student Select Courses To Utilize an Articulation Agreement?

Students work with their high school counselor, teachers, and parents to plan an appropriate course of study. High school counselors and faculty may be in contact with the community college faculty advisors for helpful information to provide their students while planning. Tech Prep educational pathway drawing board (course sequences) are provided to help students lay out a feasible four-year course plan including graduation requirements, recommended courses for preparation for certain career clusters or technical programs, and high school courses eligible for advanced placement or advanced standing the community college.

What Is Advanced Placement And Advanced Standing?

At the community college, advanced placement means that a student may be exempt from enrolling in an articulated course because of successful completion of the parallel course at the high school level. The student will receive credit for the college course on the college transcript. No tuition or fee payment is required. The advanced placement credit hours will be counted toward graduation, but will not be counted in the student's grade point average.

Advanced standing at the community college means that a student must still enroll in the college's course qualifying for advanced standing. Because the student has met one or more of the community college's course competencies in the parallel high school program, the student will experience one or more of the following:

- The student will be taught more advanced skills and problem solving leading to successful performance on certification tests.
- The student may test out of a portion of the course resulting in a partial tuition waiver.
- The student may waive a section or multiple sections of a course.
- The student may receive partial or total waiver of required work experience.
- The student may serve as a teaching assistant to the instructor, developing supervisory skills.

How Do Students Obtain Advanced Placement/Advanced Standing?

In order for students to obtain advanced placement or advanced standing a student should:

- Successfully complete the secondary Tech Prep course sequence and earn a high school diploma.
- Earn a grade of B or higher in the qualifying high school course(s) or a grade of 90% on the course competency test(s) where such texts exist.
- Be accepted into a program of study at the community college within one year of graduation from high school or as soon as space is available where an entrance waiting list exists.
- Complete community college Application for Credit by Waiver form.

Steps in the Articulation Process

In order to implement a Tech Prep program, articulation is necessary between high schools and the community college within the consortium. Nebraska Tech Prep has committed to an "advanced skills" approach, in which both academic and vocational course work are articulated. By considering all courses rather than focusing only on technical offerings, it is believed that a smoother transition for the student will occur between high school and college.

The articulation process is a time and cost intensive procedure. It usually requires that academic and vocational faculty from each institution meet several times in person to discuss course offerings, determine outcomes and competencies, and establish "drawing boards" of course sequences from grades 9 through 14. The following steps have used successfully in the articulation process.

Step 1 Secure Commitment of Leaders

Identify the educational institutions to be involved in the articulation. Obtain the commitment of their leaders to participate and ask them to identify key person(s) in their organization to serve on the articulation committee.

Step 2 Create an Articulation Committee

The articulation committee should include secondary and postsecondary administrators/ teachers/counselors from each participating institution as well as community/business/industry representatives. They should plan to meet at least monthly for six to twelve months.

Step 3 Determine Programs to be Articulated

Area high schools should determine which vocational programs or occupational clusters they want to articulate with the community college. Various career or occupational clusters have been utilized by high schools in Nebraska. Four common career cluster titles have been widely adopted (with occasional variation): Business/Information Management, Health/Human Services, Engineering/Industrial Technology, and Arts/Sciences or Humanities. Programs offered by the community college that match high school vocational program offerings are usually selected. An Intent to Articulate Agreement (see Appendix A) is signed by representatives of the high school and community college and initiates the high school's membership in the community college Tech Prep Consortium

When making program selection decisions, it is recommended that school administrators, local Tech Prep coordinators, and leadership teams obtain the advice of their local Tech Prep advisory committees as they look at the vocational programs offered in their system to determine present strengths. Generally, the first programs articulated with the community college are those programs and courses that are currently in place within the high schools..

Step 4 Draft Four Year High School Educational Course Sequences (Begin design of Drawing Boards)

After programs "to be articulated," are determined, preliminary educational pathway course sequences called "drawing boards" can be drafted . Appendix B shows an example of a completed Tech Prep drawing board. The intended use of the drawing boards is to help students with course recommendations for their four-year plan of study in high school. The drawing boards will include the academic and vocational courses that will lead to a barrier-less transition into the community college. Courses should provide students with the skills they will need to succeed in gaining and maintaining employment after high school graduation if they choose this route.

When developing a Tech Prep drawing board, local graduation requirements must first be considered. This includes the number of years of math, science, social studies, communications, and other disciplines that are required. Consideration is also given to the course sequence recommended in a related vocational/technical program. Do these courses build on previous skills and /or do they provide a broad exploration of the area? It is hoped that career exploration experiences will be possible for students during their freshman and sophomore years. Before the eleventh grade, students can decide if they wish to focus their vocational studies in an articulated program area.

In regard to academic requirements, the goal of a Tech Prep program is to build students' academic skills, especially beyond what is usually found in a general education track. The program's target population, the middle 50 percent of the student body, are frequently unsuccessful in upper level courses taught in a traditional college prep manner. Applied academic courses are a successful solution to this concern and should be considered in developing the drawing board course sequence. Examples of applied academics curriculum include: Principles of Technology, Applied Mathematics I - III, Applied Biology/Chemistry, Applied Communications and Communications 2000. The Center for Occupational Research and Development (CORD), the Agency for Instructional Technology (AIT), and Southwestern Publishing have developed many applied curriculum materials.

Course titles should be sequenced for each discipline and for each year of high school attendance. Vocational instructors may be called upon to recommend academic requirements, based on their understanding of the skill needs of the vocational program.

In summary, graduation requirements are determined first. Next, academic courses through the four-year sequence are determined on the basis of ability and learning styles within the target student population and on the program being articulated. Finally, vocational courses are selected for each year of high school that will provide career exploration opportunities and will build on the skills necessary for the program being articulated. High school exit courses recommended on an articulated Tech Prep educational pathway should help a student enter the community college program prepared and without academic deficiencies.

Step 5 Determine Exit Objective/Competencies for High School Courses

As the four-year high school recommended course sequence is determined, the final (junior or senior level) courses offered in each subject area should be considered. Objectives and/or intended competencies taught in each of these top-level courses should be outlined by the instructors of these courses. For example, if the final math course in the four-year sequence is Applied Math II, then the objectives, and/or competencies of that course would be determined and recorded. Generally, each high school course in the sequence is developmental, with final courses building on the skills, knowledge, and attitudes previously learned.

The articulation committee should meet with teachers and curriculum specialists for the courses/programs designated for articulation to review and analyze course information. A Course Fact Sheet (see Appendix C) should be used for recording current course information at both the secondary and postsecondary level. A comparison of these course fact sheets must then be done to determine where articulation is feasible and/or to assess how the course(s) must be modified to make articulation possible.

Step 6 Compare High School Course Objective/Competencies with Community College Entry Level Competency Expectations

The objectives and/or competencies determined for each of the final courses recommended on the high school course sequences are shared with the community college representatives involved in the articulation effort. Dialogue between program administrators or instructors at the community college and high school faculty regarding high school exit competencies and community college entrance competency expectations should lead to the final determination and approval of the recommended high school Tech Prep course sequences.

In some cases, recommended courses listed on the Tech Prep educational pathway drawing boards may be specially designated as: 1) advanced placement, 2) advanced standing, or 3) pre-admission course. In order to receive such designation, specific high school course information would be provided and approved by the appropriate community college program officials. Step 7 is an optional step in the program articulation process which may lead to specific course articulation agreements.

Step 7 (Optional) Determine Possibility for Specific Course Articulation Agreements

As specific course are reviewed and compared to make appropriate decisions in the program articulation process (see Steps 5 & 6 above), it may become apparent that significant replication exists between some exit level high school courses and a few entry level college courses. Specific course competency matches are generally more prevalent in skills-based or technical subjects.

The Course Competencies Review Worksheet (see Appendix D) is used as the official documentation for specific course articulation. Individual high school course objectives, and/or competencies are examined by community college faculty instructing in the same discipline. The Course Fact Sheet for Articulation Review (see Appendix C) provides an excellent format for analyzing these courses. College instructors will determine whether the high school course or series of courses may qualify to be designated as advance placement (full credit by waiver) or advance standing. In some instances, specific high school courses may be designated as pre-admission courses for some community college program entrance placement purposes.

A Course Articulation Agreement (see Appendix E) will be signed by administrative representatives at the high school and the community college detailing information relating to agreed upon advance placement or advance standing arrangements. High school and college courses that have been articulated as advance placement or standing may be noted on the educational pathways. Students may apply for Credit by Waiver or Examination for these courses when they apply for admission to the college (see Appendix F).

Step 8 Add the Postsecondary Program Course Sequence

The two-year community college program course sequence (course titles) is added to the required and recommended four-year high school courses noted on the educational pathway drawing board. The drawing board will now show a 4 + 2 year suggested course sequence or program of study (4 years of high school plus 2 years for an associate degree at the community college). The community college Tech Prep Office maintains a data base of the Tech Prep drawing boards. The drawing boards can be typed and printed by the Tech Prep office or they may be prepared in-house by the individual member high schools. Regardless of the method of preparation, program and/or course changes must be kept up to date on the drawing boards.

Step 9 Finalize Program Articulation Agreement

Completed Tech Prep educational pathway drawing boards should be reviewed and by community college program chairs or division deans who will initial and date the back of each one they approve. The drawing boards then become part of the Program Articulation Agreement (see Appendix G) which must be signed by designated administrators at each institution. Secondary and post secondary participants in the agreement will get a final copy for their records. Original initialed drawing boards and program articulation agreements will be stored in the community college Tech Prep office. The State Department of Education will receive a copy o Program Articulation Agreements and corresponding drawing boards as long as Federal Tech Prep funds are administered there.

Step 10 Review and Update to Keep Agreements Current

Educational pathway drawing boards and/or program articulation agreements should be reviewed for necessary changes at least every two years. The partnering institutions in Tech Prep should be informed when courses, course sequences or program requirements are revised at either the secondary or post-secondary level. Program and/or course articulation agreements should be revised as needed.

Appendix A
NEBRASKA TECH PREP
INTENT TO ARTICULATE AGREEMENT*

STATEMENT OF INTENT. The intent of this Agreement is to provide a means for increasing the probability that students will acquire the necessary knowledge/skills in the Secondary Program to successfully complete the Postsecondary Program **and/or** attain related employment. This Agreement initiates a planned process for linking educational programs at the secondary and postsecondary levels to help students make a smooth transition from one level or program to another without experiencing delays or duplication of learning. Program content will be based on input from practitioners in the field.

ELIGIBILITY. All students are eligible for participation at the secondary level. To participate at the postsecondary level, students must (1) successfully complete the Secondary Program, (2) enroll in the articulated Postsecondary Program within the specified time frame and (3) make application for credit and/or advanced placement as agreed upon and stated in the sequence of courses to be created prior to signing the actual Tech Prep Program Articulation Agreement.

GENERAL TERMS OF AGREEMENT

COLLABORATION. The two education systems will meet to create articulated sequence of courses and to establish advanced placement and/or advance standing criteria.

SEQUENCE. This will be a six year program, encompassing four years of secondary education and the first two years of postsecondary education (grades 9-14).

PROFESSIONAL DEVELOPMENT. Monetary support for participation in Tech Prep related activities will be provided to faculty/staff based on availability of grant funds.

CURRICULUM AREAS TO ARTICULATE. The following career pathways and/or career and technical program areas will be the focus of articulation in this Agreement. Funds may be restricted if career and technical programs do not meet Nebraska Department of Education base components or have a program improvement plan on file.

Meets Base Components . . . Y/N **Improvement Plan on File . . . Y/N** **Not Applicable . . . . . .N/A**	**Secondary Program(s)**	**Postsecondary Programs(s)**	**(may be undeclared)**
_____	_____ Agriculture	_____	_____
_____	_____Business	_____	_____
_____	_____Coop/Diversified Occupations	_____	_____
_____	_____Family Consumer Science	_____	_____
_____	_____Health/Human Services	_____	_____
_____	_____Industrial Technology	_____	_____
_____	_____Marketing	_____	_____
_____	_____Trades/Industry	_____	_____
_____	_____Other_____	_____	_____

TIME FRAME. The proposed time line for completion of these articulated sequence of courses is one year from the date of this intent agreement.

SEQUENCE OF COURSES. We understand that prior to signing the actual **Tech Prep Program Articulate Agreement**, a sequence of courses must be developed which shows the specific courses at **_____ High School** and **_____ Community College** which will lead to an Associate Degree or two-year certificate.

SIGNATURES

_____ _____

Community College Designated Representative Date | School District Designated Representative Date

_____ _____

Postsecondary Institution | Secondary Institution

* For more detailed information regarding the articulation process, please obtain a copy of the *Nebraska Articulation Guide* by contacting your local Tech Prep Consortium Coordinator or the Tech Prep Director, Nebraska Department of Education, 402-471-0948.

Appendix B: **Sample Articulated Sequence of Courses (Drawing Board)**

TECH PREP ASSOCIATE DEGREE PROGRAM
BUILDING CONSTRUCTION DRAWING BOARD

HIGH SCHOOL				COMMUNITY COLLEGE	
Grade 9	**Grade 10**	**Grade 11**	**Grade 12**	**1st Year**	**2nd Year**
Required English 9 Geography Physical Science Speech/PE Beginning Woods	**Required** English 10 World History Biology	**Required** English 11 American History Building Construction	**Required** English 12 Government/Psychology Building Construction	BLD111 Residential Const 1 BLD113 Construction Drafting BLD115 Const. Materials & Practices BLD121 Const. Equipment & Techniques BLD123 Const. Blueprint Reading & Sketching BLD125 Applied Math BLD126 Computer Spreadsheet & Estimating BLD127 Bricklaying & Masonry Techniques (Opt) SUMMER SEMESTER (Optional) BLD155 Summer Internship	BLD231 Building Structures & Cabinetmaking BLD233 Construction Codes & Standards BLD235 Construction Welding BLD236 Supporting Trades BLD 241 Residential Const.II BLD 243 Commercial Planning & Design BLD 245 Business Management
Required Algebra I or General Math I	**Required** Algebra I or General Math I Algebra II or General Math II or Advanced Math	**Required** Algebra I or General Math I Algebra II or General Math II or Advanced Math..	**Required** Algebra I or General Math. I Algebra II or General Math. II or Advanced Math.		
Recommended Fine Arts	**Recommended** Fine Arts	**Recommended** Fine Arts Electricity I Welding AutoCad Drafting Adv Cabinetry Job Readiness	**Recommended** Fine Arts Electricity I Welding AutoCad Drafting Adv Cabinetry Job Readiness Auto Mechanics		
ADDITIONAL INFORMATION: Diplomas are based on the general requirements that a student must attend school for eight semesters or receive special permission from the Board of Education to complete course requirements in less than eight semesters. HONORS DIPLOMA - at least 215 total credits or more with a CPA of at least 89% and completion of additional science and math. courses and all requirements for regular diploma. REGULAR DIPLOMA - Successful completion 200 credits including 4 years of English and Social Studies, and two years of science and math. Dual credit options and/or advanced placement should be described here.				ADDITIONAL INFORMATION: Additional course work required for Associated of Applied Science degree consists of one course from each of the following groups: Written Communications, Oral Communications., Social Science. Natural Science and Mathematics for a total of 12 credit hours. Departmental App. Math. fulfills Science and Math. requirement. 2.00 GPA average or better required in major course of study.	

Approved by Tech Prep Coordinators:_____ Approved by Community College Program Chair/Division Dean_____ Date_____

Appendix C

COURSE FACT SHEET FOR ARTICULATION REVIEW

Instructions: The course fact sheet provides key information about courses for articulation purposes. One page is the recommended length. Two pages maximum. The fact sheet is to be completed by faculty and/or curriculum specialists at the initiating institution.

Fact sheet should be dated.

I General Course Information. Identifies school and course title along with other descriptive information about the course.

II. Prerequisite Competencies. Describe the key skills the student should posses upon entering this course. What should they know and be able to do in order to succeed in this course?

III Materials/Methodology. List texts, other reference materials, teaching/learning methods/technologies utilized. Examples: small group work, lab experiments, demonstrations, case study, computer assisted instruction, interactive video, virtual reality, and lecture.

IV. Course Content. Course concepts/topics listed sequentially. Could also include purpose of course, primary student focus, etc.

V. Course Objectives/Exit Competencies. Write measurable statements of what students should know and be able to do at the end of this course.

Examples:

Demonstrate the use of various problem solving strategies given specific data.
Given an anatomical model, identify and label the structures.
Interpret, explain, summarize oral or written communications.
Define vocabulary terms.
Apply a concept to a real life situation.
Demonstrate the procedure for dissecting a laboratory specimen.

VI. Performance Assessment. Describe how students will be assessed to determine whether or not they have met the exit competencies listed in Part V. Describe both developmental assessment methods and learning outcome assessment. E.g., quizzes, written exams, skill performance, writing, portfolios, group projects, oral presentations, workbooks, lab participation, attendance, etc.

COURSE FACT SHEET FOR ARTICULATION REVIEW

Date _____

I. GENERAL COURSE INFORMATION

School _____ Course # _____ Course Title _____
Teacher Name _____ Semester Hours _____ Quarter Hours_____
Course Purpose/Major Goal(s) _____
Textbook(s) Used _____
Supplemental Resources _____
Prerequisite Course(s)_____
Recommended Grade Level(s) 9 10 11 12 13 14 15 16

II. PREREQUISITE COMPETENCIES

III. MATERIALS/METHODOLOGY

IV. COURSE CONTENT

V. COURSE OBJECTIVES/EXIT COMPETENCIES

VI. PERFORMANCE ASSESSMENT

Appendix D

COURSE COMPETENCIES REVIEW WORKSHEET

_____ _____

High School Community College

Course(s) to be reviewed for articulation:

_____ _____

_____ _____

_____ _____

Dates of Meetings for Review _____ _____ _____ _____

COMMITTEE EVALUATION

A. Total number of competencies listed for ____ HS course(s): _____

B. Total number of competencies listed for CC course: _____

C. Number of equal competencies found: _____

D. As a result of the committee's evaluation, do you recommend adjustments, deletions, additions to course content at either the high school or community college ?

Explain:

E. Does the committee recommend this course as a prerequisite for _____ program at the Community College? **YES / NO**

F. Does the committee recommend advanced placement? **YES / NO**
Explain and justify your recommendation.

G. Does the committee recommend advanced standing? **YES / NO**
Explain and justify your recommendation.

H. If advanced placement is recommended, how do you verify it (grade average, proficiency and/or performance test, teacher recommendation or any combination?) Explain reasons:

COMPETENCY LISTING	
COMMUNITY COLLEGE	**HIGH SCHOOL**
(Attach CC course information or use this space to list competencies.)	(Attach high school course competencies, use the Course Fact Sheet for Articulation Review as a guide in preparing course information , or use this space to list competencies.)

Community College	**CURRICULUM MATERIALS AVAILABLE**	**High School**
	Course Competency Listings	
	Competency Tests	
	Performance Tests	
	Textbooks	

APPROVAL:
Each instructor involved in the review process must sign this form:

Name_____ Title_____ Phone # _____

Name_____ Title_____ Phone # _____

Name_____ Title_____ Phone # _____

Name_____ Title_____ Phone # _____

Name_____ Title_____ Phone #_____

SAMPLE

Appendix E

COURSE ARTICULATION AGREEMENT

Secondary School_____

Postsecondary Institution_____

This Letter of Agreement is enacted to facilitate the transfer of credits from **High School** to **Community College**. It enables students to apply high school courses that are equivalent to college courses toward the college's graduation requirements in diploma and/or Associate of Applied Science Degrees.

A. **ARTICULATED COURSES AND CREDITS.** The Advanced Placement/ Advanced Standing Chart on the back of this agreement outlines the secondary courses subject to this agreement and the related college courses. As indicated, the secondary courses identified as advanced placement may be used as a substitute for specific college courses within the postsecondary program curriculum. Through either advanced placement or advanced standing status, students would have an opportunity for shortening the time required to complete the postsecondary program or to take additional courses recommended by their advisor for program enrichment.

B. **TRANSFER OF CREDIT.** Students wishing to have secondary credits transcribed by the college must complete the college's application process. In addition, the student must complete the college's "Application for Credit by Waiver or Examination" form and attach an official high school transcript.

C. **ANNUAL REVIEW.** Instructional representatives and administration from secondary and postsecondary participants will review this process, curricula, courses, and agreements by March 1 of each year. The "Curriculum Review Worksheet" should be the document reviewed. It is the official working document used in the Tech Prep project to identify advanced placement or advanced standing course matches between Southeast Community College and Tech Prep consortium schools.

D. **STUDENT AND PARENT INFORMATION.** The secondary and postsecondary institutions participating in this agreement will provide copies of catalogs, curricula, application materials, and this articulation agreement to students and parents and will assist them with education planning and enrollment. The secondary participants will identify students who are participating in advanced placement or advanced standing courses and will assist them with program planning and transition.

E. **SIGNATURES OF APPROVAL.**

_____ _____

College Administrator Date

_____ _____

Program Chair Date

_____ _____

High School Administrator Date

Course Articulation Agreement and Evaluation

Name of Program_____

Secondary School_____

Postsecondary Institution_____

Advanced Placement/Advanced Standing Chart

High School	Community College	
Tech Prep Courses	**Advanced Placement Courses**	**Advanced Standing Courses**

To obtain Advanced Placement or Advanced Standing at **Community College**, a high school student should:

1. Successfully complete the secondary Tech Prep program and earn a high school diploma.
2. Earn a grade of B or higher in the qualifying high school course(s) or a grade of 90% on the course competency test(s) where competency tests exist.
3. Be accepted in a program of study at CC within one (1) year of graduation from high school or as soon as space is available where a waiting list of 1 year exists.
4. Complete an CC Application for Credit by Waiver form.

Exceptions to these guidelines can be made with CC administrative approval.

Advanced Placement at CC in the program identified above means a student is exempt from enrolling in the identified course(s) at CC because of successful completion of the parallel course at the high school level. The student will receive credit for the college course on the college transcript. No tuition or fee payment will be required. The advanced placement credit hours will be counted toward graduation, but will not be counted in the college grade point average.

Advanced Standing in programs at CC means a student must enroll in the course qualifying for advanced standing. Because the student has met one or more of the CC course competencies in the parallel high school program, the student will experience one or more of the following:

- The student will be taught more advanced skills and problem solving leading to successful performance on certification tests.
- The student may test out of a portion of the course resulting in a partial tuition waiver.
- Waive a section or multiple sections of a course.
- Partial or total waiver of required work experience.
- Serve as a teaching assistant to the instructor, developing supervisory skills.

Appendix F

APPLICATION FOR CREDIT BY WAIVER OR EXAMINATION

Name _____ Social Security # _____ Date _____

Current Address _____

Last High School Attended _____ Graduation Date _____

Declared Program of Study _____

GENERAL INFORMATION:

The College believes that persons should have an opportunity to receive credit for demonstrated competencies which are similar to the competencies required in courses and programs offered by the College. The two methods available to gain advanced standing are by waiver or by examination. Advanced Standing may be awarded by each department of the College, but cannot exceed ⅓ of the total credit hours required for a program award. Test fees are nonrefundable.

REQUIREMENTS:

1. All applicants must have completed an application for admission to the College.

2. All applicants for credit by examination must obtain permission from the department responsible for teaching the course; have recorded the appropriate course numbers, title, and credits on the form; and pay the campus cashier 50% of the current total tuition rate prior to taking the examination.

3. All applicants for credit by waiver must provide supportive documentation such as competency reports, proficiency certificates, or training records. Evaluation of applicants for credit by waiver is the responsibility of the department responsible for teaching the course.

PROCEDURES:

1. Requests for credit by waiver prior to admission should be submitted to the Admissions Office. Current students must contact their advisor for approval in obtaining evaluations and department certification and submit application to the campus Registrar.

2. Requests for credit by examination must first be submitted to the student's advisor for approval and to the department responsible for teaching the course for processing.

3. Certification of credit granted by waiver or examination must be signed by the Department Chairperson for teaching the courses.

4. The Registrar records credit by waiver or examination on the student's transcript of grades and returns copies to the student and the student's advisor.

To be complete by the student's advisor		DO NOT WRITE HERE (To be completed by department responsible for teaching the course)					
Course Number	Course Title	Credit Hours	METHODS		Test Fees	RESULTS	
			Waiver	Exam		Credit Granted	Credit Not Granted
				Total		Receipt #	

Advisor's Signature _____ Cashier _____

Student's Signature _____ Date _____

CERTIFICATION (To be Completed by the Department responsible for teaching the course) _____

Department Chairperson

Entered on the transcript on _____

Date Registrar

Copies Original to Student Record Canary to Registrar Pink to Advisor Goldenrod to Student

Appendix G
NEBRASKA TECH PREP
PROGRAM* ARTICULATION AGREEMENT

STATEMENT OF ARTICULATION. This Agreement articulates a planned process for linking educational programs at the secondary and postsecondary levels to help students make a smooth transition from one level or program to another without experiencing delays or duplication of learning. It formally solidifies specific responsibilities, roles, programs, and courses between participating institutions.

GENERAL TERMS OF AGREEMENT

- **COLLABORATION**. Individuals representing secondary, post-secondary education, and business/industry (when appropriate) participated in the development of this sequence of courses.
- **SEQUENCE**. This will be a six-year program, encompassing four years of secondary education and the first two years of postsecondary education (grades 9-14).
- **PROFESSIONAL DEVELOPMENT**. Monetary support for participation in Tech Prep related activities will be provided to faculty/staff based on availability of grant funds.
- **CURRICULUM AREAS TO BE ARTICULATED**. The following career pathways and/or career and technical education programs are delineated in this Agreement. Funds may be restricted if career and technical programs do not meet Nebraska Department of Education base components or have a program improvement plan on file. The Curriculum Drawing Board* shows the articulated secondary-postsecondary sequence of courses agreed upon in this document. It is designed to increase the probability that students will acquire the necessary knowledge/skills in the Secondary Program to successfully complete the Postsecondary Program **and/or** attain related employment.

Meets Base Components Improvement Plan on File	**Secondary Program**	**Postsecondary Programs(s)**
____ YES	_____	_____
____ NO	_____	_____
____ Plan on File	_____	_____
____ N/A	_____	_____

ELIGIBILITY. All students are eligible for participation at the secondary level. To participate at the postsecondary level, students must (1) successfully complete the Secondary Program, (2) enroll in the articulated Postsecondary Program within the specified time frame and (3) make application for credit and/or advanced placement as agreed upon and stated in the sequence of courses attached to this Agreement.

TIME FRAME. This Agreement shall remain in effect until such time as it is revised or revoked.

TECH PREP ASSOCIATE DEGREE/TWO-YEAR CERTIFICATE. We understand that this **Tech Prep Program Agreement** which includes the attached articulated sequence of courses between _____ _____ **High School** and _____ **Community College** has been designed to lead an Associate Degree or two-year certificate.

SIGNATURES

_____ _____ _____ _____
Community College Designated Representative Date School District Designated Representative Date

_____ _____
Postsecondary Institution Secondary Institution

*For more detailed information regarding the articulation process, please obtain a copy of the *Nebraska Articulation Guide* by contacting your local Tech Prep Consortium Coordinator or the Tech Prep Director, Nebraska Department of Education, 402-471-0948.

* The Curriculum Drawing Board must be attached.

F. CAREER AND TECHNICAL STUDENT ORGANIZATION (CTSO) PROJECTS/COMPETITION

Overview

Career and technical student organizations are a basic component of Career and Technical Education (CTE) programs that support and enhance related school site and work site learning. Over 20,000 students in Nebraska's middle, secondary and postsecondary schools receive direct benefits from participating in CTSOs. These organizations provide linkages to business and industry through the development of mutually beneficial partnerships.

Career and technical student organizations are formally chartered local chapters affiliated with state and national associations that are recognized by the U.S. Department of Education and the Nebraska Department of Education. The following chartered career and technical student organizations are active in Nebraska.

Nebraska CTSOs	
DECA	an association of marketing students
FBLA	an association of business students
FCCLA	an association of family and consumer sciences students (formerly FHA)
FFA	an association of agriculture students
HOSA	an association of health occupations students
SkillsUSA-VICA	an association of industrial technology students

For more information on Career and Technical Student Organizations, call 402-471-2295, Nebraska Department of Education, PO Box 94987, Lincoln NE 68509-4987.

Nebraska CTSO Mission Statement

The mission of the Nebraska Career and Technical Student Organizations is to provide educational opportunities directly linked to the curriculum for CTE and applied technology education students so they may develop personally and professionally in preparation for career and life.

CTSOs and the SCANS Workplace Competencies

The SCANS (Secretary's Commission on Achieving Necessary Skills) Competencies were written in 1993 and have received a great deal of attention as the skills necessary to transition from school to a career and/or postsecondary education. A complete description of the SCANS Competencies and Foundation Skills can be found in this guide, *Section H- Workplace Readiness Courses*. The following table provides a brief look at how CTSOs teach and reinforce development of these foundational skills and competencies.

CTSOs Reinforce SCANS Workplace Competencies by . . .		
THE FOUNDATIONS	**Basic Skills**	♦ Building on the basic skills and literacies needed for productive careers and family life through curriculum-related activities and state and nationally sponsored competency-based competitive events.
	Thinking Skills	♦ Enhancing personal skill development through student-centered leadership, scholarly pursuit, critical thinking, problem solving and creativity. ♦ Motivating students to learn by reinforcing classroom instruction based on real-life applications. ♦ Developing decision making, creative thinking, and problem solving skills through individual, team and chapter activities.
	Personal Qualities	♦ Providing economic empowerment through development of a positive work ethic. ♦ Developing desirable work habits and attitudes, including an appreciation for the value of work. ♦ Motivating students to achieve excellence in the pursuit of personal and career goals by recognizing their achievement. ♦ Enhancing student self-esteem and self-confidence.
COMPETENCIES **Effective workers can productively use . . . .**	**Resources**	♦ Educating for responsible management of resources including the balance of work and family roles and the development of healthy lifestyles. ♦ Building knowledge and skills for balancing work, family, and community responsibilities. ♦ Development of meaningful business partnerships.
	Interpersonal Skills	♦ Promoting human resource development through personal growth, team building, cooperation, competition and partnerships. ♦ Practicing citizenship through community involvement and the democratic process. ♦ Building appreciation of equity and diversity for success in a global society.
	Information	♦ Promoting occupational skill development through experiential learning and occupational preparation. ♦ Enhancing employability through career exploration, occupational skill development and partnerships with business/industry. ♦ Acquiring the knowledge and skills that allow students to successfully maintain and progress in a career.
	System	♦ Developing life-long learning by encouraging members to effectively process and apply new information.
	Technology	♦ Providing technical skills needed to succeed in the high tech business world.

"Teaching the SCAN Competencies," The Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor, 1993

The Role of the CTSOs in School-to-Work

There are several opportunities for Career and Technical Student Organizations to perform a significant role in the development and implementation of various components of the School-to-Work Opportunities Acts (STWOA). It is critical that advisors become knowledgeable about the legislation and then seek out and actively participate in the state and local activities regarding school-to-work. The following paragraphs outline the areas where CTSO advisors should become actively involved with the School-to-Work Opportunities Act.

State and Local School-to-Work Networks. At the state and local level, collaborative partnerships are mandated by the legislation to ensure that a broad composite of all entities who are stakeholders in a school-to-work system can provide guidance and input. The legislation includes Career and Technical Student Organizations on school-to-work networks at both the state and local levels. Representation in these partnerships can ensure CTSOs an active role in the design, development and implementation of statewide school-to-work systems and local school-to-work programs.

School Site Learning

Career Awareness/Exploration. There are several elements under the School-Based Learning component that CTSOs can become involved with in the implementation of a school-to-work program. Significant attention is given to the importance of career guidance activities under STWOA. Every student that is part of a school-to-work program is required to participate in a career awareness or career exploration and counseling program no later than the seventh grade. Local CTSO chapters can assist in this activity by exposing students to a wide variety of occupational clusters. In the initial stages, this may be in the form of business/industry representatives speaking and interacting with middle school students at the school site. The intermediate stage would involve industry tours and job shadowing activities. Ultimately, students would choose a work based learning experience in the form of an internship or mentor activity. All of these activities can be easily facilitated by the CTSOs because of their existing relationships with business/industry and labor.

Career Majors. Every student who participates in a school-to-work program will be required to select a "career major" by at least the eleventh grade. One of the subcomponents of a career major is that the career major must prepare the student for employment in a broad occupational cluster or industrial sector. Each CTSO discipline is in itself an occupational cluster, thus making the CTSOs a viable delivery vehicle for assisting students to prepare in a broad occupational cluster. CTSOs will need to work closely with the school-to-work program designers so that as occupational clusters are established within the programs, they are closely aligned with the available Career and Technical Student Organizations in the region.

Work Site Learning

Prospective Employers. One of the biggest questions yet to be answered is: what will be the level of participation by employers? Clearly, the CTSOs and their students have been tremendous ambassadors to the business/industry/labor environment for years. The local CTSO advisor and his or her students can play an active role in contacting and recruiting potential employers to become involved with developing local partnerships.

Workplace Competencies. Another element of the Work based Learning component is that students receive instruction in workplace competencies. Employers today increasingly emphasize that academic and technical skills are not the only skills needed by students in order to enter the workplace. Today's high-performance workplace requires a diversity of general skills, such as teamwork, problem solving, positive work attitudes, employability, and participatory skills, as well as critical thinking. These competencies make up the core of the educational programs upon which Career and Technical Student Organizations are founded. Career and Technical Student Organization Program administrators must work to infuse these competencies into school-to-work programs, both from the standpoint that they are required in order to meet the legislative provisions of the law and for the benefit of the students participating in the school-to-work program.

School Based Enterprises/Cooperative Programs. In most regions, local business and industry will probably lack the capacity to provide work site learning for every student. Again, the CTSOs can play an integral role is providing quality paid and nonpaid work experiences through school-based entrepreneurial and cooperative programs.

Especially in rural areas, when even fewer opportunities will exist for work site learning, the CTSOs can provide guidance and development strategies for initiating or expanding operating school-based enterprises.

All Aspects of the Industry. The national CTSO offices provided leadership at the national level in underscoring for Congress the important role that Career and Technical Student Organizations have provided for years in the delivery of career and technical education. Due to this effort, the legislation contains language providing that students participating in school-to-work programs must receive instruction in "all aspects of an industry." The term "all aspects of an industry" has been defined as providing the students with all of the characteristics of the industry or industry sector that the student is preparing to enter—including planning, management, finances, technical and production skills, and the underlying principles of technology, labor and community issues related to that particular industry or industrial sector. This means that the instruction students receive related to their chosen career major should provide them with more than just the specific technical skills related to that industry. Incorporated into the School-Based and Work based Learning components should be units of instruction that, for example, teach the student the financial implications for the industry for which he or she is preparing.

The philosophy behind this practice is that, in order for a student to become a good employee, he or she can significantly benefit from knowing more than just the technical skills of the occupation. The student must also learn all accompanying skills and knowledge. Clearly, the various Career and Technical Student Organizations for years have provided extended learning competencies related to a variety of vocational areas. Their contribution has been even more valuable because the instruction the CTSOs provided is broad enough to ensure that the student understands and can competently navigate the area beyond the prerequisite academic and technical skills. It is this kind of well-rounded employee who can integrate a variety of skills and competencies that will be demanded by the high performance workplace of tomorrow.

Connecting Activities. It cannot be emphasized enough that a well developed set of comprehensive Connecting Activities to serve as the critical linchpin ensuring successful school-to-work programs are of critical importance. Under the Connecting Activities component, there are several opportunities for the CTSOs to assist in the implementation of a school-to-work program.

Each school-to-work program will be required to provide services that match students with employers. As stated earlier, this will probably be an integrated component in that a student, as he or she progresses through the program, will at various intervals come in contact with various representatives of business/industry. The CTSOs long standing relationship with business/industry representatives will provide a natural conduit for these students to access work based learning opportunities. Their previous interaction with each other through regional and state workshops, conferences and contests should make the matching of a student with the appropriate employer an instinctive process.

School-to-work programs, when fully implemented, will clearly blur the lines between educators and employers. To achieve this kind of partnership and collaboration, it will be critical for strong, long-lasting relationships to be forged between educational entities and employers. Most educators do not have much experience in developing these necessary relationships. Again, the CTSOs for years have worked jointly with employers in developing and offering quality programs for their members. Both students and CTSO chapter advisors can become integral players in establishing and maintaining new and existing partnerships between educators and employers.

Nebraska Success Stories

FBLA SCHOOL STORE

Description. The Future Business Leaders of America operate a school store from 8 - 8:25 a.m. each day before classes start. The store carries stationery items including pens, pencils, report covers, and folders; educational items such as daily planners and computer disks; and snack items such as candy and gum.

The students are responsible for stocking the store with merchandise, ordering and paying for merchandise, maintaining an inventory, making deposits, scheduling workers, and keeping accurate records.

Students learn by actually experiencing different types of work, applying various skills, and developing personal skills while operating the school store. They learn the importance of accuracy in operating the cash register, calculator or computer; in determining costs and selling prices; in making deposits; and in other functions. Decision-making is involved in deciding what merchandise to purchase and in what quantity. Dependability and responsibility are developed as the students must be in attendance and perform the job expected of them at the time. Honesty is promoted in the handling of merchandise and money.

The School Store provides a real-life setting for students to learn about supply and demand, competition, and profit and loss. Working in the store has strengthened the confidence of the students in themselves and their abilities, and this experience builds readiness for future employment or even for starting their own business.

Program Areas. Business Education, Career and Technical Student Organizations
Grade Level. 6 - 12th Grades
Contact. Judy Moore, Superior Public Schools, PO Box 288, Superior, NE 68978, (402) 879-3257.

G. CAREER AND TECHNICAL EDUCATION PROGRAMS

Overview

Program Director – Richard Katt
(402) 471-4808
Assistant Director – Dean Folkers
(402) 471-2494

The purpose of career and technical education in Nebraska is to make the State more competitive in the world economy by developing and enhancing the academic and occupational skills of all segments of the population. Nebraska intends to achieve this purpose through the concentration of resources on improving educational programs and services that develop academic and occupational competencies needed to work in a technologically advanced society.

Some of the activities and services available are:

- Technical assistance for career and technical education program improvement
- Professional development opportunities, such as seminars, conferences and workshops
- Education and training for new and emerging occupations
- Upgrading of curriculums
- Interdisciplinary consultation for integrating academic and Career and Technical Education (CTE)
- Equipment acquisition
- Coordination, cooperation and collaboration among programs, agencies, associations, business and industry
- Career guidance and counseling

Materials that are available:

- State Plan for CTE and Applied Technology Education
- Annual Performance Report on CTE and Applied Technology Education
- Models for Curriculum Integration of CTE and Academic Education

The following Career and Technical programs are offered in Nebraska schools. All are available at the secondary level and many at the postsecondary level as well.

Agricultural Education

State Director ─ Craig Frederick
(402) 471-2451

The mission of agricultural education is to provide opportunities for students to prepare themselves for a career or upgrade their skills in agricultural occupations. Nebraska's agricultural industry serves as the backbone of our state's economy, providing employment in both production and agribusiness areas. The broad based industry of agriculture includes the areas of commodity production, marketing and management, horticulture, floriculture, mechanization, processing, sales and service, food science, forestry, natural resources and environmental management.

The courses provide the practical and theoretical knowledge needed for entry level, further education or career advancement in the agricultural industry. The instruction combines classroom learning with laboratory/experiential application.

FFA and the Nebraska Young Farmers Education Association (NYF) chapters provide related leadership training as an integral part of the instructional program. These chapters are found in secondary schools, on postsecondary campuses, and in adult education components of agricultural education programs.

Business Education

State Director — Bonnie Sibert
(402) 471-4818

The primary mission of business education is to provide instruction for and about business. The mission of Business Education in Nebraska is to work cooperatively with the business community to prepare all individuals to live and work as productive citizens in a changing, global society by providing essential business experiences, education and training. The business education curriculum is designed to develop and enhance the following five educational areas: basic skills, life skills, information technology skills, international business knowledge and lifelong learning.

The discipline of business education prepares students to become contributing citizens who are capable of making astute personal economic decisions. Students learn the basics of personal finance, develop techniques for making wise consumer decisions, master economic principles, and learn how businesses operate. In addition, business educators play a prominent role in developing the knowledge, skills, and attitudes necessary for students to succeed in the workforce.

Business Education programs provide initial preparation, retraining, and/or upgrading of individuals leading to employment and advancement in business occupations. Business Education represents a broad and diverse discipline that is included in all types of educational service delivery systems--elementary through secondary schools, one- and two-year schools and colleges, and four-year colleges and universities.

Opportunities are frequently provided both during and outside the regular class time for students to develop interests, skills, and knowledge in selected aspects of business as an integral part of the instructional program. As an example, Future Business Leaders of America (FBLA) and Phi Beta Lambda (PBL) provide additional opportunities to develop leadership, skills, and other qualities needed to better understand the world of work.

Cooperative Education/Diversified Occupations (COOP/DO)

State Director — Carol Jurgens
(402) 471-0948

Bridging the gap between education and work is essential to providing COOP/DO students with the academic and technical training necessary for transitioning from school to work. Cooperative education is a method of instruction that moves the classroom into the "real world of work." It is an instructional plan that combines on-the-job supervised employment and related in-school instruction.

The primary purpose of COOP/DO is to provide an opportunity for interested students to acquire marketable skills and knowledge in an occupation for which they have an aptitude. This program is based on the assumption that classroom instruction provides a basic foundation of theory with limited application. COOP/DO offers career and technical, academic and specialized training that otherwise would not or could not be offered to students while they are in school. The experiential work activities provide students with the opportunity to gain occupational knowledge and basic skills for transitioning from school-to-work.

Family and Consumer Sciences Related Occupations

State Director — Shirley Baum
(402) 471-4813

Instruction in Family and Consumer Sciences Related Occupations is designed to prepare students for employment or upgrade their skills in an occupational area related to family and consumer sciences. This instructional program includes child care and guidance management services; clothing, apparel, and textiles management, production, and services; food production, management, and services; home furnishings and equipment management, production, and services; and institutional home management, and supporting services. Classroom instruction, laboratory experiences and/or appropriate work experiences are essential to the development of the competencies needed by persons preparing for employment or person currently employed in this area.

Health Occupations Education

State Director ─ TBA
(402) 471-4808

The mission of Health Occupations Education is to provide leadership and direction to ensure the preparation of a quality work force to meet the health needs of Nebraska. To fulfill this mission in Nebraska, health occupations education courses are available at the secondary and postsecondary levels and prepare students for a variety of options for meaningful employment. Health occupations programs prepare persons for careers in direct client care, diagnostic care, therapeutic care, health information management, and supportive services.

The health field is changing at an accelerated rate as we approach the 21st century. Programs are responding to these changes by concentrating on courses that are central to all health occupations and building on these core courses as students progress to advance study and greater specialization.

Broad exploration of possible careers at an early age promotes health occupations. Middle school and high school level students can take courses or participate in activities that will ensure students have sufficient knowledge to choose a career pathway. Postsecondary programs are flexible, providing various points of exit, temporary or permanent, at which the student will be able to perform a job. These jobs are vital to society, as well as rewarding financially and professionally.

Students benefit by the involvement of the health industry. Health providers and health care facilities invest in programs and welcome students so they get actual hands on experience which has always been a critical component of health occupations education. Opportunities for developing leadership skills are provided by experiences in student professional organizations, career and technical organizations, and through institution sponsored organizations.

Industrial Technology Education

State Director ─ Tony Glenn
(402) 471-4819

Industrial Technology Education is a generic term that includes Technology Education, Industrial Technology Education and Trade & Industry Education. The curriculum extends from the elementary grades through postsecondary education. The elementary grades through secondary grade nine are served best by Technology Education. Its primary purpose is awareness and exploration of a variety of technological areas.

The primary purpose of Industrial Technology Education at the secondary level is to provide opportunities and experiences to develop an understanding about the technical, occupational, recreational, organizational, social, historical, and cultural aspects of industry and technology. It is a program of study whereby students acquire technological knowledge and skills through creative and problem-solving learning experiences involving such activities as experimenting, planning, designing, constructing, evaluating and using tools, machines, materials, and processes.

The Trade and Industry Education curriculum best serves those students in grades ten through fourteen and has, as its primary purpose, preparation for industry and technical careers by developing basic machine and related academic skills, pride in workmanship, work ethic, and leadership abilities through activities directly related to those found in industry.

Industrial Technology Education at the postsecondary level may include two-year, four-year, and/or special industry training. Industrial Technology Education prepares students to work aggressively on their own or in conjunction with others in the various career fields. It also provides career options in specific fields within Education, Engineering, Management, Technical, and Private Business.

The career and technical student organization, SkillsUSA-VICA, serves as an integral component for leadership development in the Industrial Technology Education curriculum. SkillsUSA-VICA strives to promote personal growth through goal setting, group dynamics, leadership roles, skill development, citizenship, high standards in workmanship, scholarship and technological problem solving.

Marketing Education

State Director ─ Gregg Christensen
(402) 471-4803

Marketing Education is the program of instruction designed to meet the needs of persons interested in careers in marketing, management and entrepreneurship. Marketing education addresses marketing occupations in a wide range of employment environments. Instructional programs in marketing education reach all levels of pre-baccalaureate education and serve enrollees who are either employed, preparing for employment, or planning for advanced education. These programs are models for preparing students for both postsecondary education and future careers.

Marketing Education is a program which is responsive to our expanding global economy in addition to fostering the private enterprise system. Marketing teachers link the program to the community by utilizing a variety of instructional methods (classroom instruction, cooperative marketing internship, and the career and technical student organization─DECA).

Marketing is a field which gives expression to creativity and requires problem-solving, critical thinking, and decision-making to successfully meet the needs of the public. Judgment in carrying out functional marketing tasks is a key to successful job performance. Basic and advanced academic skills are particularly important for employment success and advancement in marketing careers.

The marketing program should have as its primary focus the marketing *functions* and their *applications.* Therefore, the curriculum framework for marketing programs is divided into categories: *Foundation Skills for Marketing and Marketing Functions and Applications*. Foundational Skills include basic skills and understandings (mathematics, communications, human relations); understanding of the business environment, including marketing and management systems; and knowledge of basic economic principles and concepts. Marketing Functions and Applications involve such areas as distribution, financing, management of marketing information, pricing, planning, promotion, purchasing, risk management, selling, management, and entrepreneurship.

Instruction is offered at the secondary, postsecondary, and adult education levels and is structured to meet the requirements for gainful employment and entrepreneurship at specified occupational levels. Marketing occupations are found in such areas of economic activity as retail and wholesale trade, finance, insurance, hospitality and tourism, fashion merchandising, real estate, services and service trades, manufacturing, transportation, utilities, and communications.

Opportunities to develop leadership, social, and civic awareness and increased understanding of the world of work are offered through DECA, an association of marketing students. As an integral part of the instructional program, members engage in activities that extend their interests, skills, and knowledge in selected aspects of marketing. Such organized activities, under appropriate supervision, are referred to as co-curricular activities.

Nebraska Success Stories

MARKETING RESEARCH PROJECT

Description. Students from Bellevue West work directly with businesses and perform market research to better meet the needs of that business's customer base. The data is gathered in several different methods with the survey method being most popular. The raw data is transferred onto the scantron sheets and fed into a computer that provides an in-depth analysis of the data. The student takes the data and from it makes recommendations to better improve business operations. This includes creating a promotional plan to meet the company objectives and improvements. The students submit their 30-50 page proposal for evaluation. A follow-up interview is done, and the students are questioned on their findings and recommendations.

Program Areas. Business Education, Marketing Education
Grade Level. 9 - 12th Grades
Contact. Dave Shillinglaw, Bellevue West High School, 1501 Thurston Avenue, Bellevue, NE 68005, (402) 293-4078.

PLANT PROPAGATION AND AQUACULTURE

Description. To help students realize the strengths of different disciplines and to provide the maximum possible benefit for students are the basic premises by which the agriculture and biological science teachers developed their consortium project. The first phase of the project focused on "Biotechnology through Advanced Plant Propagation Techniques." The teams of biology and agriculture teachers were exposed to tissue culture, budding, and grafting. After the "bonding" of the teams during the first year, the second phase (year 2) of the project focused on the area of aquaculture. Aquaculture is a very old form of agricultural production, but is fast becoming an exciting new industry in the United States.

Aquaculture is the process by which water is used to raise food. Everything from fish to seaweed, lobsters to clams, crawfish to shrimp are being raised on farms throughout the entire school district. One of the goals of the project is to raise fish in the laboratories of the consortium schools. As a part of this project, teachers and guidance counselors have had the chance to see some of the outstanding research activities being conducted at the University of Nebraska-Lincoln College of Agriculture Sciences and Natural Resources.

Program Areas. Agriculture Education, Science
Grade Level. 9 - 12th Grades
Contact. Sue Oppliger, ESU #7, 2657 44th Avenue, Columbus, NE 68601, (402) 564-5753.

H. WORKPLACE READINESS COURSES

Overview

Workplace Readiness courses focus on problem solving, teamwork, self management and the other SCANS foundations and competencies needed to succeed in the changing workplace. Characteristics that employers want in their employees such as good attendance, positive attitude, accountability, dependability, willingness to learn continuously, being a positive member of the work team, and problem-solving ability are emphasized in the courses.

All students, including those heading for a two- or four-year college or going directly to work after high school, will need to learn these generic work skills to maximize their employability.

Workplace Readiness Framework

The framework that follows was developed by the Workplace Readiness Assessment Consortium working under the sponsorship of the Council of Chief State School Officers (CCSSO). The components of the framework reflect the commonality found among the various definitions of work readiness or employability skills available to the group when it began the work of revising the framework in early 1995. The sources used to develop the consensus framework include:

- business and industry expectations.
- national studies or projects such as ASTD. New Standards and SCANS.
- state-level definitions from states such as California, Kentucky, Maryland, Michigan, Oregon and New York.
- school districts such as Fort Worth, Texas.
- national research and development centers, such as UCLA/CRESST, and regional educational laboratories, such as the Far West Laboratory.
- postsecondary institutions.

GUIDING PRINCIPLES

The following principles guided the development of the framework:

- The skills are appropriate for *all* students, including those in traditional career and technical education programs, college-bound, and at-risk populations such as special education, and the limited-English proficient. The assumption is that all students, regardless of high school program or postsecondary plans, will work and that all work requires important common skills, as well as industry-specific and occupationally-specific skills.

- Students heading for a two- or four-year college after high school will need to learn these generic work skills, while students going directly to work will need continuing education and training to maximize their employability.

- These skills are expected to apply across all occupations to varying degrees. These skills describe behaviors which all workers will need, regardless of the education or skill level needed for the job; they are *not* alternatives for the non-college bound students.

- The skills are developmental. They should be taught beginning in elementary school and continue through secondary school, rather than waiting until the secondary or postsecondary levels.

- Teaching these skills—or more accurately, helping students to discover, document, and develop these skills—is the responsibility of *all the school staff*, not just the career and technical education teachers or guidance counselors. The process should also involve representatives of business and the community.

- Ultimately, it is the responsibility of students to document their preparedness for work. A variety of assessment strategies, such as employability skills portfolios and performance assessments, can provide students the information they need to document their readiness for work.

- Classroom activities designed to facilitate skill development should be both appropriate for the classroom

setting and consistent with workplace expectations. Where possible, students (and staff) should also be given exposure to work settings outside the classroom.

- Students achieving the skills included in the framework are expected to be more successful in future, high performance work settings than those who do not have these skills. This is true regardless of the entry position obtained or the education or skills needed for the position.

The intent of this framework is to facilitate the development of a generalized definition of workplace readiness which various states and other users can adopt or adapt based on specific local needs and current level of development in this area. The frameworks represents a consensus among developers of existing definitions of work readiness skills. Therefore, the document will be of help to states and others contemplating the definition of such skills. However, we anticipate users comparing this framework to local efforts and expectations, then making modifications freely to meet local needs.

The assessment consortium purposely chose not to endorse any existing workplace readiness framework or list of employability skills. Instead, a subcommittee of the group chose to create a new list of the important skills and concepts drawn from each of the existing frameworks and to present these in a unique outline. This process will make it possible for users of the "Mapped" frameworks (e.g., the SCANS competencies) to relate their assessment development work to that of other users of the consensus map (whether or not they are also using the SCANS competencies). Thus, the assessment framework which is presented here not only represents a statement of important skills, it also can be used as a filter to translate among the existing definitions and assessments of workplace readiness. Presumably, this value will be enhanced as new developers relate their work to this definition.

Workplace Readiness Framework	
A. Personal Management	Develop and maintain personal characteristics and behaviors necessary for success in the workplace to: 1. act responsibly, dependably, and conscientiously 2. behave with integrity 3. refrain from substance abuse 4. work safely 5. demonstrate initiative, motivation, and perseverance 6. demonstrate promptness 7. adapt to change 8. manage personal resources 9. improve personal fitness/health 10. avoid absenteeism
B. Academic Foundations	Develop and improve applied academic skills necessary for the workplace in: 1. mathematics 2. communication skills 3. science and technology 4. social sciences 5. health and physical education 6. the arts
C. Career Development	Plan and prepare for current and future career options, based on personal qualities and interests: 1. evaluate own interests, strengths, and weaknesses 2. identify appropriate occupational choices 3. select personal career path(s) 4. take steps to achieve career goals 5. demonstrate self-motivated learning
D. Interpersonal	Develop and maintain effective and productive groups by demonstrating the ability to:

Workplace Readiness Framework	
	1. provide leadership and followership as appropriate 2. build consensus 3. deal with conflict effectively 4. negotiate agreements 5. work with all members of the workforce 6. listen attentively 7. actively participate in work-related discussions 8. respect the dignity of others 9. understand differences of opinion 10. meet the needs of others, such as clients or customers 11. respect the dignity of work
E. Thinking/Problem Solving Skills	Demonstrate the ability to generate innovative and practical solutions to real world problems: 1. define the problem 2. analyze the problem and/or situation 3. evaluate available information 4. develop and analyze potential solutions or options 5. incorporate creativity, intuition, hunches 6. allocate necessary resources 7. make defensible decisions 8. monitor progress toward goals 9. repeat steps 1 through 8 as necessary
F. Technology	Select, apply, and maintain tools and technologies: 1. learn about current and emerging technologies 2. apply thinking/problem solving skills to technology situations 3. apply technology solutions to problem situations 4. evaluate and improve technologies
G. Communication	Receive, process, and convey information using a variety of sources (such as written verbal, non-verbal, and symbolic; technological, multi-media; abstract as well as concrete) to: 1. gather information efficiently 2. organize and maintain information 3. interpret information 4. share information 5. receive and use both positive and negative feedback
H. Workplace Systems	Determine how an individual job fits into the overall organization, how the organization fits into the industry, and how the industry fits into the overall economy, in order to: 1. identify the subparts of the system 2. know how the parts fit together 3. understand how the work flows through the system
I. Participate in the Work Organization	Contribute to the accomplishment of the organization's purpose by working to: 1. assist the organization to set goals as well as the procedures to implement the goals 2. work to help achieve organizational goals 3. assist in continuous improvement 4. initiate suggestions for improving the organization 5. demonstrate loyalty to the organization and its goals 6. communicate responsibly with co-workers 7. teach and learn from others on the job 8. carry out assigned duties

Workplace Readiness Assessment Framework

The Workplace Readiness Assessment Framework consists of six general categories, as well as specific elements that comprise each of the categories. The specific elements are intended to be illustrative, not exhaustive, of the general category. Following consensus on the general framework, the consortium activities will center on the development of performance-based assessment tasks which measure these skills. It is anticipated that this work will be based on activities currently taking place in the states and organizations of the members, as well as contribute to those efforts. The work which the group has begun will be an important part of the efforts of the members to build high quality, useful assessments of student performance.

PRINCIPLES FOR THE DEVELOPMENT OF THE WORKPLACE ASSESSMENT

As the Workplace Readiness Assessment Consortium began work on the assessment framework and all through the deliberations which led to the framework, certain principles or assumptions that should guide the efforts to develop assessments of these outcomes emerged. These principles guide the work of the assessment consortium as it develops assessment prototypes. In addition, these principles are commended to those states and organizations which are planning to develop comparable assessment efforts, since they will guide these efforts in a most useful and constructive fashion.

The assumptions which will guide the assessment development efforts are as follows:

- The assessment system should be used foremost for student development and program improvement.
- The use of these tasks in high stakes programs (e.g., graduation tests, certifications tests, or job selection) will require additional specialized validation studies.
- The assessment system should be imbedded into existing and integrated curriculum, instruction, and assessments.
- Educators (teachers, counselors, and others) and industry representatives must be involved in the development of the assessments.
- Existing national and international assessment programs should be examined for consistency and avenues for integration.
- The way a task is scored should reflect the purpose of its development and the intent of its use. Where possible, real-life behavior should form the basis of the scoring rubrics.
- The use of performance-based assessment tasks should be encouraged wherever appropriate and feasible.

SCANS Workplace Competencies

The know-how identified by SCANS is made up of five competencies and a three-part foundation of skills and personal qualities needed for solid job performance.

SCANS Workplace Competencies		
THE FOUNDATIONS	**Basic Skills**	♦ *Reading* - locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules ♦ *Writing* - communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts ♦ *Arithmetic/Mathematics* - performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques ♦ *Listening* - receives, attends to, interprets, and responds to verbal messages and other cues ♦ *Speaking* - organizes ideas and communicated orally
	Thinking Skills	♦ *Creative Thinking* - generates new ideas ♦ *Decision Making* - specific goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative ♦ *Problem Solving* - recognizes problems and devises and implements plan of action ♦ *Seeing Things in the Mind's Eye* - organizes, and processes symbols, pictures, graphs, objects and other information ♦ *Knowing How to Learn* - uses efficient learning techniques to acquire and apply new knowledge and skills ♦ *Reasoning* - discovers a rule or principle underlying the relationship between two or more objects and applied it when solving a problem
	Personal Qualities	♦ *Responsibility* - exerts a high level of effort and perseveres towards goal attainment ♦ *Self-Esteem* - believes in own self-worth and maintains a positive view of self ♦ *Sociability* - demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings ♦ *Self-Management* - assesses self accurately, sets personal goals, monitors progress, and exhibits self-control ♦ *Integrity/Honesty* - chooses ethical courses of action

SCANS Workplace Competencies

COMPETENCIES **Effective workers can productively use . . . .**		
	Resources	♦ *Time* - Selects goal-relevant activities, ranks them, allocates time, and prepares and follows schedules ♦ *Money* - Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives ♦ *Materials and Facilities* - Acquires, stores, allocates, and uses materials or space efficiently ♦ *Human Resources* - Assesses skills and distributes work accordingly, evaluates performance and provides feedback.
	Interpersonal Skills	♦ *Participates as Member of a Team* - contributes to group effort ♦ *Teaches Others New Skills* ♦ *Serves Clients/Customers* - works to satisfy customers' expectations ♦ *Exercises Leadership* - communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies ♦ *Negotiates* - works toward agreements involving exchange of resources, resolves divergent interests ♦ *Works with Diversity* - works well with men and women from diverse backgrounds
	Information	♦ *Acquires and Evaluates* information ♦ *Organizes and Maintains* Information ♦ *Interprets and Communicates* Information ♦ *Uses Computers to Process* Information
	System	♦ *Understands Systems* - knows how social, organizational, and technological systems work and operates effectively with them ♦ *Monitors and Corrects Performance* - distinguishes trends, predicts impacts on system operations, diagnoses deviations in systems' performance and corrects malfunctions ♦ *Improves or Designs Systems* - suggests modifications to existing systems and develops new or alternative systems to improve performance
	Technology	♦ *Selects Technology* - chooses procedures, tools or equipment including computers and related technologies ♦ *Applies Technology to Task* - understands overall intent and proper procedures for setup and operation of equipment ♦ *Maintains and Troubleshoots Equipment* - Prevents, identifies, or solves problems with equipment, including computers and other technologies.

"Teaching the SCAN Competencies," The Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor, 1993

NEBRASKA SUCCESS STORIES

CAREER AND WORKPLACE READINESS

Description. Career and Workplace Readiness is a program emphasizing work skills and job ethics. Students are enrolled in the Career and Workplace class in conjunction with on-the-job training in Career Exploration or Tech Prep Occupational internships. Career and Workplace Readiness as a class stresses employability skills and work maturity. Students apply concepts learned in the class to job-site situations. Students learn skills involving communication and cooperation at the job-site. The major emphasis of the class is finding a job to meet the student's individual needs while exploring the job market requirements or a career goal.

The program goals allow students to:

- Apply work ethic skills to an on the job-site experience.
- Transition to employment after graduation.
- Participate in a job-site learning situation while attending school as an alternative to dropping out of school.
- Extend the learning experience beyond what is offered in vocational and college preparatory classes at the high school level.
- Participate in a technical job-site program earning articulated credit in approved Southeast Community College programs.

The Career and Workplace Readiness class meets one class period each day for one semester. Career Exploration or Tech Prep Occupational internship includes two or three class periods every day. Students must pass the designated number of classes as agreed upon in individual contracts.

Program Areas. All Areas
Grade Level. 9 - 12th Grades
Contact. Carol Schulz, Beatrice Public Schools, 215 North Fifth Street, Beatrice, NE 68310, (402) 223-1515.

CLASSROOMS AS WORK-SITES

Description. The premise of this activity is that employers will not reward employees for exhibiting unacceptable characteristics and that students need to develop these particular qualities while they are still in school, not when they enter the job market.

Characteristics that employers want in their employees such as good attendance, positive attitude, accountability, dependability, willingness to learn continuously, being a positive member of the work team, and problem-solving ability are emphasized in this activity. Teachers use the concept of a “daily wage” to indicate how well students display these characteristics in the classroom which is considered a work-site. Points are available each day for students to earn by exhibiting the positive qualities indicated. If students have trouble with any particular quality, the teacher will model the appropriate behavior, have other students serve as models, or utilize role play to enhance possibilities for all students to internalize the necessary characteristics.

After students have had numerous opportunities for mastery, wages are deducted if the appropriate behavior is not exhibited. Ultimately, the “daily wage” will comprise a percentage of the students’ grades. Each classroom teacher is free to determine the weight placed on this particular element.

Program Areas. Fine Arts, Careers/Guidance, English, Family and Consumer Sciences, Science, Technology
Grade Level. 7 - 12th Grades
Contact. Charlotte McEwen, Giltner Public Schools, PO Box 160, Giltner, NE 68841, (402) 849-2238.

BIBLIOGRAPHY

ACT Career Planning Program (CPP) Six Job Clusters, American College Testing, 2201 North Dodge Street, Educational Services Division, Iowa City, IA 52243

A Guide to Work-Based Learning: Business and Industry Risk Management Plan, Michigan Department of Education, Office of Career and Technical Education, PO Box 30008, Lansing, MI 48910

Academies in Context, CORD Communication, Vol 3, No. 4, Aug/Sept., 1997, PO Box 21206, Waco, TX 76702-1206, Phone: 817-772-8756

Career Academies Presentation, December 1997, GMS Partners, Inc., National Career Academy Coalition, 1122 Kersey Road, Silver Spring, MD 20902

Career Academies: Communities of Support for Students and Teachers—Emerging Findings from a 10-Site Evaluation. James J. Kemple, Manpower Demonstration Research Corporation, December 1997, MDRC, 16 East 34 Street, New York, NY 10016-4326

Career Opportunity Fair 1997, Beatrice Chamber of Commerce, 226 South 6th Street, Beatrice, NE 68310, Phone: 402-223-2338

Consensus Framework for Workplace Readiness, CCSSO Workplace Readiness Assessment Consortium, July 1995, Council of Chief State School Officers, One Massachusetts Avenue, N.W., Washington, D.C. 20001

Designing Marketing Tools, Steve Walter, Tri-County Technical College, Pendleton, SC, Phone: 803-646-8361 X2253, Copyright 1994

Developing and Implementing School-to-Work in South Carolina, South Carolina Department of Education, 1429 Senate Street, Columbia, SC 29201, Phone: 803-734-8492, Fax: 803-734-8624

Getting to Work: A Guide for Better Schools , MPR Associates, Inc., 2150 Shattuck Avenue, Suite 800, Berkeley, CA 94704, Phone: 510-549-4551

Holland's Self-Directed Search (SDS) Six Personality Types, Psychological Assessment Resources, Inc., PO Box 998, Odessa, FL 33556

Nebraska Innovative School-to-Work Strategies 1997, Nebraska Department of Education, 301 Centennial Mall South, Lincoln, NE 68509-4987, Phone: 402-471-0948

Opening Minds, Opening Doors: The Rebirth of American Education, CORD Communications, PO Box 21206, Waco, TX 76702-1206, Phone: 817-772-8756

Oregon Work-Based Learning Manual, March 1996, Lane Community College, Cooperative Education Department, 4000 East 30th Avenue, Eugene, OR 97405-0640, Phone: 541-726-2203, Fax: 541-744-4168

The School-to-Work Glossary of Terms, National School-to-Work Office, Washington, DC, July 1996

Teacher Externship Guide: Step-by-Step Procedures for Designing Externships, Boston Public Schools, 26 Court Street, Boston, MA 02108

Workplace Learning Strategies Manual, Allan Hancock College, 800 S. College Drive, Santa Maria, CA 93454, Phone: 805-922-6966, EXT 3613