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GLOSSARY

Academy Model: Operating as schools-within-schools, academies provide the following three unique components: (1) block rostering, which allows each entering class of students to take core subjects together with the same teachers; (2) long-term relationship with the core teachers, who teach the required core subjects for all academy students every year; and (3) formal business ties which provide the real-world basis for the occupational focus of the academy as well as sources of mentors, internship experiences and potential postsecondary employment opportunities

All Aspects of an Industry: The Vocational Technical Education Regulations and the Perkins Vocational and Technical Education Act require that vocational technical education programs provide students with “strong experience in and understanding of all aspects of the industry students are preparing to enter”. The aspects that are essential are “health & safety skills/competencies”, “technical skills/competencies”, “embedded academic skills/competencies”, “employability skills/competencies”, “planning skills/competencies”, “management skills/competencies”, “finance skills/competencies”, “underlying principles of technology skills/competencies”, and the knowledge of “labor relations issues”, “community issues”, and “environmental issues” related to a particular occupation.

Apprentice: A worker who is at least 16 years of age, except where a higher minimum age standard is otherwise fixed by law, who is employed to learn a skilled trade under standards of apprenticeship fulfilling the requirements of the *United States Department of Labor, Labor Standards for the Registration of Apprenticeship Programs* (Title 29 CFR Part 29) and the *Equal Employment Opportunity in Apprenticeship and Training Act* (Title 29 CFR Part 30).

Apprenticeship program: A plan containing all terms and conditions for the qualification, recruitment, selection, employment and training of apprentices, including such matters as the requirement for a written apprenticeship agreement in conformance with the United States Department of Labor, Labor Standards for the Registration of Apprenticeship Programs, (Title 29 CFR Part 29) and the Equal Employment Opportunity in Apprenticeship and Training Act (Title 29 CFR Part 30).

Articulation Agreement: A written agreement or a system-wide written policy which links two or more educational systems to help students make a smooth transition from one level to another without experiencing delays, duplication of courses, or loss of credits. It serves as a vehicle for high school students to earn postsecondary credit while enrolled in high school or upon entering postsecondary study.

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Block scheduling: A means of circumventing the time constraints of a single class period. The traditional school day is typically divided into six or seven classes that each last from forty-five to fifty-five minutes. With few exceptions, classroom instruction begins and ends within the allotted time period. Blocked courses may be scheduled for two or more continuous class periods or days to allow students greater time for laboratory or project-centered work, field trips or work-based learning and special assemblies or speakers. Moreover, block scheduling reduces the instruction time lost in passing between.

Business/industry relationships: Connections between educational entities and local business/industry organizations for the purpose of meeting the needs of the students and employers as customers of the educational process.

Career Academy: A high school program in which a group of students are scheduled with the same core group of teachers for two, three, or four years. The curriculum organizes academic subjects around an industry or occupational theme—for example, health, finance, computers, media—and enables students to fulfill the requirements for college entrance in addition to acquiring work-related knowledge and skill.

Career and Technical Education (Vocational Education): A public education program providing educational experiences that enhance the vocational development processes of exploring, establishing and maintaining oneself in worker, family member and citizen roles. One of its unique contributions is the development of occupational competencies.

Career and Technical Student Organizations (CTSO): Career and technical student organizations are for individuals enrolled in vocational education programs which engage in activities as an integral part of the instructional program. Such organizations must have state and national units which aggregate the work and purposes of instruction in career and technical education at the local level; DECA, FBLA, FCCLA, FFA, HOSA and SkillsUSA.

Career awareness and exploration: Instruction and programs that assist students to clarify career goals, explore career possibilities, develop employability skills, and make the transition from school to work and/or postsecondary education.

Career Clusters: A broad group of career areas that represent a scope of employment which involves grouping occupations from one or more industries that share common skill requirements. Career clusters provide a means of organizing the thousands of career choices for implementation in the school curriculum.

Career development: A comprehensive, competency-based developmental program designed to assist students in making and implementing informed

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educational and occupational choices. The competencies, identified in the National Career Development Guidelines, focus on the areas of self-knowledge, education, occupational exploration, and career planning. Programs include competency-based activities and services that emphasize knowledge, skills, and abilities that enable the learner to identify various aspects of occupational careers; use critical-thinking skills to make meaningful occupational choices; qualify for entry to occupational education programs. The basic skills and abilities the individual should master in order to deal successfully with daily life and career development tasks in a technological society are introduced and developed. This includes, but is not limited to, problem solving, decision making, balancing work and life, evaluation of one's uniqueness, and acquiring basic knowledge of different occupations.

Career guidance and counseling: Programs that pertain to the body of subject matter and related techniques and methods organized for the development in individuals of career awareness, career planning, career decision making, placement skills and knowledge and understanding of local, state and national occupational, education and labor market needs, trends and opportunities; assist individuals in making and implementing informed educational and occupational choices; aid students in developing career options with attention to surmounting gender, race, ethnic, disability, language or socioeconomic impediments to career options and encouraging careers in nontraditional employment.

Career Major: A coherent sequence of courses or field of study that prepares a student for a first job and that: integrates academic and occupational learning, integrates school-based and work-based learning, establishes linkages between secondary schools and post secondary institutions; prepares the student for employment in a broad occupational cluster or industry sector; typically includes at least two years of secondary education and at least one or two years of post secondary education; • provides the students, to the extent practicable, with strong experience in and understanding of *all aspects of the industry* the students are planning to enter; results in the *award* of a high school diploma or its equivalent; such as a general equivalency diploma (GED) or alternative diploma or certificate for students with disabilities for whom such alternative diploma or certificate is appropriate; *and* a certificate or diploma recognizing successful completion of one or two years of post secondary education (if appropriate), *and* a skill certificate; and may lead to further education and training, such as entry into a registered apprenticeship program, or may lead to admission to a two- or four- year college or university.

Career Plan: A career plan is a comprehensive, formalized written plan (that students use alone or with the help of others) that relates learning to career goals. The plan is based on both formal and informal assessments and should include areas in which a student needs to increase knowledge and skills to reach goals. A career plan is designed to facilitate transition from high school to

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employment and future learning. It can be thought of as both an instrument and a process for monitoring one's career development. As an instrument, a plan provides a place to organize and record progress related to personal, educational, and career and labor market information. As a process, it encourages learners to use the past and present in goal setting and planning. In either case, a career plan should be revisited and modified periodically.

Career portfolio: A carefully selected collection of information that demonstrates a student's talents, interests, abilities, achievements and experiences. It documents the development of education/career goals and one's successful transition from school-to-work.

Career preparation: Involves high school students in selecting a career major for study. During this time, the student is acquiring the academic and occupational skills and knowledge for entry-level employment and/or admission to postsecondary training. The acquiring of skills occurs in contextual and applied-learning settings. Through the process, a skills certificate must be developed for each student indicating the general workplace and/or specific occupational skills to be achieved. Support services are provided for those who need them. The student continues to evaluate the career plan and is allowed to make the necessary changes based on individual needs.

CIE: Cooperative Industrial Education. A Career and Technical Education program designed to prepare students for entry level employment in the trades and industry area. CIE has been replaced by the Cooperative Career Education program.

COE: Cooperative Occupational Education. A Career and Technical Education program designed to prepare students for entry level employment in a wide variety of career areas. The term COE is also used to refer to any cooperative education activity in any program area. COE has been replaced by the Cooperative Career Education program.

Community-based organizations (CBOs): Private nonprofit organizations which are representative of communities or significant segments of communities and which provide job-training services.

Company: The organization which employs the student in a Cooperative Career Education program.

Competency: A skill, an attitude, and/or a knowledge needed by an individual to master an occupation.

Competency List: The list of skills to be acquired by students.

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Connecting Activities: Activities which support both school-based and work-based learning outlined in the School to Work Opportunities Act of 1992. employer recruitment/mentor training, staff/professional development, strategies to serve all youth, job search assistance for graduates, school site mentors, post-graduation follow-up services, and program evaluation.

Consortium: A group of two or more school districts, employers, and other partners which is organized around the common goal of establishing a work-based learning system in the community.

Consortium for Entrepreneurship Education: A national membership organization for leaders advocating entrepreneurship education, composed of national, state and local education agencies and organizations. www.entre-ed.org

Contextual learning: Instruction that imparts knowledge within the context in which it will later be used. Linking abstract concepts with real-life problems, contextual learning enables students to personally test and prove academic theories via tangible, real-world applications. Stressing the development of authentic problem-solving skills, contextual learning is designed to blend the teaching of skills and knowledge in a specific industry or occupational area.

Cooperative Career Education (CCE): A career and technical education program for high school juniors and seniors. The program focuses on developing occupational skills which are transferable to a variety of career areas through the use of alternating classroom instruction and on the job training supervised by both the school and the cooperating business.

Cooperative Education: Cooperative education: a program of vocational technical education for persons who, through a cooperative arrangement between the school and employers, receive instruction, including required academic courses and related vocational technical instruction, by the alternation of study in school with a job in any occupational field. Such instruction shall be planned and supervised by the school and the employer so that each contributes to the student's education and employability. Work periods and school attendance may be on alternate half-days, full days, weeks or other coordinated periods of time.

Cooperative Education: per Perkins Vocational and Technical Education Act of 1988 Public Law 105-332 Section 3 (6) The term 'cooperative education' means a method of instruction of education for individuals who, through written cooperative arrangements between a school and employers, receive instruction, including required academic courses and related vocational and technical education instruction, by alternation of study in school with a job in any occupational field, which alternation shall be planned and supervised by the school and employer so that each contributes to the education and employability

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of the individual, and may include an arrangement in which work periods and school attendance may be on alternate half days, full days, weeks, or other periods of time in fulfilling the cooperative program.

Cooperative Education: per The Code of Federal Regulations Title 29 (CFR 29) Part 570.50 (c) (1) (2) defines student learners: "(1) The student-learner is enrolled in a course of study and training in a cooperative vocational training program under a recognized State or local educational authority or in a course of study in a substantially similar program conducted by a private school and; (2) Such student-learner is employed under a written agreement which provides: (i) That the work of the student-learner in the occupations declared particularly hazardous shall be incidental to his training; (ii) That such work shall be intermittent and for short periods of time, and under the direct and close supervision of a qualified and experienced person; (iii) That safety instructions shall be given by the school and correlated by the employer with on-the-job training; and (iv) That a schedule of organized and progressive work processes to be performed on the job shall have been prepared. Each such written agreement shall contain the name of student-learner, and shall be signed by the employer and the school coordinator or principal. Copies of each agreement shall be kept on file by both the school and the employer. This exemption for the employment of student-learners may be revoked in any individual situation where it is found that reasonable precautions have not been observed for the safety of minors employed there under. A high school graduate may be employed in an occupation in which he has completed training as provided in this paragraph as a student learner, even though he is not yet 18 years of age."

Curriculum Guide Sheet: A part of this project which displays on one page the unit title, topic, performance indicator, standard and objectives along with cross walks to SCANS and the Show-Me Standards. Also included on this page are suggested activities to support a variety of instructional strategies and assessment.

DECA: An association of Marketing Students. The national career-technical organization for secondary and post-secondary student who are enrolled in marketing education programs.

DESE: The Missouri Department of Elementary and Secondary Education. The state agency responsible for K-12 and Career and Technical Education.

Dual Enrollment/Articulated Credit: A program of study allowing high school students to earn credits simultaneously toward a high school diploma and a postsecondary degree or certificate. Written agreements formalize programs of study, the transfer of academic and career and technical education credits among institutions, and the role of secondary and postsecondary instructors.

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Employability Skills/Competencies: Those “non-academic”, “non-technical” skills/competencies that are favored by most employers for hiring purposes and include such skills as reporting to work on time, time management, teamwork, following directions, politeness, customer service, etc.

Employer: Public and private employers providing work-based learning experiences for students.

Entrepreneurship: Involves the recognition of opportunities (needs, wants, problems, and challenges) and the use of resources to implement innovative ideas for new, thoughtfully planned ventures.

Extended Contract: A period of employment beyond the regular school term during which the teacher devotes time to instruction, workplace visits, job development, and/or development of curriculum.

Externship: Externships refer to a temporary position “outside” or external to one’s area, with the intent of gaining new and valuable experiences that could be used in one’s job. For example: a teacher externs from their teaching position as a chemistry teacher, to work at a biotechnical facility. This externship provides her/him with valuable knowledge and experience in the industry that can be utilized when teaching.

FBLA: Future Business Leaders of America. The national career-technical organization for students enrolled in secondary business education.

FCCLA: Family, Career and Community Leaders of America. The national career-technical organization for junior and senior high school students enrolled in family and consumer sciences occupations education.

FFA: A national career-technical organization for secondary and postsecondary students enrolled in agricultural education programs.

Field Experience: Field experience is an opportunity for a student to explore and learn more about a career or occupation through business/industry based experiences. These are unpaid and exploratory in nature. Field experience could include activities such as job shadowing, company visits and tours, work based projects, and other events that involve the student in learning activities at a place of business.

Industry Skill Standards: National voluntary industry skill standards which include content from multiple disciplines which define what productive workers in an occupational cluster or industry sector need to know and be able to do.

Industry-Based Certification: A portable, recognized credential (tangible evidence) that validates an individual has successfully demonstrated skill

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competencies in a core set of content and performance standards in a specific set of work-related tasks, single occupational area, or a cluster of related occupational areas.

Instructional Management Plan: A written plan of activities directed by the teacher-coordinator and completed by the student. The plan links the classroom instruction to skills and knowledge developed at the workplace. The Instructional Management Plan is an alternative to the Training Plan, and is part of the evaluation process for determining grades and credit for the cooperative education program.

Integrated and Applied Curriculum: The integration of academic and occupational education by designing curriculum which brings together related concepts, generalizations, contents and /or processes, combined with techniques that provide students with the opportunity to apply knowledge and skills through authentic tasks.

Internship: An internship is generally an unpaid learning experience in a workplace in which structured learning occurs related to the student's program of study. The internship is graded, part of a credit granting course or program, and has an evaluation component.

Job Shadowing: Typically a part of career exploration activities in late middle and early high school. A student follows an employee at a firm for one or more days to learn about a particular occupation or industry.

Mark Ed Resource Center: Non-profit consortium of states providing all levels of current curriculum materials for career and technical education teachers.
www.mark-ed.com.

Mentor Training: Training for workplace mentors which includes a review of the role and responsibilities of a workplace mentor; supervision techniques and teaching methodologies appropriate for adolescents; integrating work-based and school-based learning; and student performance evaluation techniques.

Mentoring: Pairing a student with an individual over an extended period of time during which the individual helps the student master certain skills and knowledge the individual possesses, models workplace behavior, challenges the student to perform well and assesses the student's performance. Mentoring may be combined with other work-based learning activities, such as internships or on-the-job training.

MCE: Marketing and Cooperative Education. The program in the Division of Career Education at DESE which provides support for programs in Marketing Education and Cooperative Career Education.

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MOACTE: Missouri Association for Career and Technical Education. The professional organization for those concerned with the future of Career and Technical Education in Missouri. It is a state affiliate of the national Association for Career and Technical Education.

Objective: A statement of a teachable skill or knowledge derived from a Standard and Performance Indicator. An objective is used to build lesson plans, select instructional strategies, and develop assessments.

Performance Indicator: A statement of a broad understanding needed by individuals to be successful in careers. A performance indicator is used to set parameters for curriculum content.

Post Secondary Educational Institution: An institution legally authorized to provide post secondary education within a state,

Professional Development: Providing training and/or orientation to teachers, counselors, administrators, workplace mentors, work based learning coordinators, and others on any or all aspects of the work-based learning system in order to provide skills and knowledge necessary to successfully implement the system components.

Project-based learning: A method of instruction that offers learners totally integrated work and learning experiences developed around the completion of finite projects that produce tangible results. SCANS skills, academic content, and knowledge permeate the projects. Learners use research, critical thinking, and problem-solving skills to implement the projects. Supervisors and teachers shift away from telling learners what to do and let learners take on the role of overseer.

Rubric: A rubric is a scoring guide that describes criteria for student performance and differentiates among different levels of performance within those criteria.

Sample Activity

SCANS: The Secretary's Commission on Achieving Necessary Skills (SCANS) was convened in February 1990 to examine the demands of the workplace and to determine whether the current and future workforce is capable of meeting those demands.

School-based Enterprise: An enterprise in which goods or services are produced by students as part of their school program. School-sponsored enterprises typically involve students in the management of a project that may involve the sale of goods for use by others.

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School-based Learning: A component of the School to Work Opportunities Act which includes: assessment of student's academic and work readiness skills, which is integrated with career planning; career awareness and exploration and counseling for all students (beginning no later than the 7th grade); selection by students of a career major no later than the beginning of the 11th grade; curriculum articulation with post secondary education (technical and university); the use of integrated and applied curriculum in a work-based learning context; coordination with community services, as needed, to support all student populations in the work based learning activities; and data collection and program evaluation.

School-sponsored enterprise: The production of goods or services by students for sale to or use by others. School-sponsored enterprises typically involve students in the management of the project. Enterprises may be undertaken on or off the school.

Service learning: A method in which youth develop through active participation in organized service that is conducted in and meets the needs of a community; that is coordinated with a community service program; that helps foster civic responsibility; that is integrated into and enhances the educational components of the community-service program in which the participants are enrolled; and that provides structured time for the participants to reflect on the service experiences.

Show-Me Standards: A set of 73 rigorous standards intended to define what students should know and be able to do by the time they graduate from Missouri's public high schools. The standards are organized into 4 goals areas and the content areas of Communications Arts, Fine Arts, Health and PE, Math, Science and Social Studies.

Skill Certificate: A portable, industry-recognized credential that certifies that a student has mastered skills at levels that are at least as challenging as skill standards endorsed by the National Skill Standards Board established under the National Skill Standards Act of 1994. Except that until such skill standards are developed, the term "skill certificate" means a credential issued under a process described in the approved Carl Perkins State plan.

Skills USA: A national career-technical organization for secondary and postsecondary students enrolled in trade and industrial occupation programs.

Standard: A statement of workplace expectations or duties within a broad area of understanding. Standards are derived from performance indicators. Standards define the curriculum content. Specific instructional objectives are based on standards.

Structured learning experience: Supervised student co-curricular or extracurricular activities, school-based enterprises, volunteer or paid

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employment, apprenticeship programs, or community service within educational programs.

System: A system is a group of interacting, interrelated, or interdependent elements that together form a complex whole. All the parts of the system are related to the same overall process, procedure, or structure, yet they are (most likely) all different from one another and often perform completely different functions (Kauffman 1980).

Teacher Coordinator: A properly certificated member of the school staff responsible for administering the school program and resolving any problems that arise between the school-based and work-based activities of the cooperative education student. The teacher coordinator acts as liaison between the school and employers in methods of cooperative education.

Technology: The development and application of [tools](#), [machines](#), [materials](#) and [processes](#) that help to solve human problems

Training Agreement: A written document clarifying the specific responsibilities of the student-learner, the training sponsor, the parents, the teacher-coordinator and the school for a cooperative education program.

Training Plan: A step-by-step procedure listing what the student-learner is to study in school and on the job.

Training sponsor: An experience employee, supervisor, or manager who is directly responsible for the occupational learning experiences of the student-learner on the job.

Work-based Learning: A component of the Career and Technical Education initiative includes: youth apprenticeship programs; skill-based school-supervised work experience; such as, cooperative education, local work experience, or supported employment which is based on state and/or national skill standards; volunteer work in the community, which relates to a student's career major; workplace mentoring; instruction in general workplace competencies, including instruction and activities related to developing positive work attitudes, and employability and participative skills; and data collection and program evaluation; programs linked to postsecondary and national standards.

Workplace: The place of employment. In this document the term is used to indicate the student's training station as part of the cooperative career education program.

Workplace Mentor: An employee or other individual, approved by the employer at a workplace, who possesses the skills and knowledge to be mastered by a student and who instructs the student, critiques the performance of the student,

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guides the student to perform well, and works in consultation with classroom teachers and the employer of the student.

Work-Readiness Assessment: The process of assessing a student's readiness for a workplace assignment and/or a paid job may include an assessment of any work experiences to date, ability to work with others, knowledge of job application and interviewing techniques, ability to accept work-related supervision, and any other basic work skills deemed necessary to be successful in a job setting.

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SCANS COMPETENCIES AND FOUNDATIONS

COMPETENCIES

Resources

1. **Allocates Time** — Selects relevant, goal-related activities; ranks them in order of importance; allocates time to activities; and understands, prepares and follows schedules. Competent performance in allocating time includes properly identifying tasks to be completed; ranking tasks in order of importance; developing and following an effective, workable schedule based on accurate estimates of such things as importance of tasks, time to complete tasks, time available for completion and task deadlines; avoiding wasting time; and accurately evaluating and adjusting a schedule.
2. **Allocates Money** — Uses or prepares budgets, including making cost and revenue forecasts, keeps detailed records to track budget performance and makes appropriate adjustments. Competent performance in allocating money includes accurately preparing and using a budget according to a consistent and orderly accounting method; accurately calculating future budgetary needs based on projected costs and revenues; accurately tracking the extent to which actual costs and revenues differ from the estimated budget; and taking appropriate and effective actions.
3. **Allocates Material and Facility Resources** — Acquires, stores and distributes materials, supplies, parts, equipment, space or final products in order to make the best use of them. Competent performance in allocating material and facility resources includes carefully planning the steps involved in the acquisition, storage and distribution of resources; safely and efficiently acquiring, transporting or storing them; maintaining them in good condition; and distributing them to the end user.
4. **Allocates Human Resources** — Assesses knowledge and skills and distributes work accordingly, evaluates performance and provides feedback. Competent performance in allocating human resources includes accurately assessing peoples' knowledge, skills, abilities and potential; identifying present and future workload; making effective matches between individual talents and workload; and actively monitoring performance and providing feedback.

Information

5. **Acquires and Evaluates Information** — Identifies need for data, obtains them from existing sources or creates them and evaluates their relevance

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and accuracy. Competently performing the tasks of acquiring data and evaluating information includes analytic questions to determine specific information needs; selecting possible information and evaluating its appropriateness; and determining when new information must be created.

6. **Organizes and Maintains Information** — Organizes, processes and maintains written or computerized records and other forms of information in a systematic fashion. Competently performing the tasks of organizing and maintaining information includes understanding and organizing information from computer, visual, oral and physical sources in readily accessible formats, such as computerized data bases, spreadsheets, microfiche, video disks, paper files, etc.; when necessary, transforming data into different formats in order to organize them by the application of various methods such as sorting, classifying or more formal methods.
- 7 **Interprets and Communicates Information** — Selects and analyzes information and communicates the results to others using oral, written, graphic, pictorial or multi-media methods. Competently performing the tasks of communicating and interpreting information to others includes determining information to be communicated; identifying the best methods to present information (e.g., overheads, handouts); if necessary, converting to desired format and conveying information to others through a variety of means including oral presentation, written communication, etc.
8. **Uses Computers to Process Information** — Employs computers to acquire, organize, analyze and communicate information. Competently using computers to process information includes entering, modifying, retrieving, storing and verifying data and other information; choosing format for display (e.g., line graphs, bar graphs, tables, pie charts, narrative); and ensuring the accurate conversion of information into the chosen format.

Interpersonal

9. **Participates as a Member of a Team** — Works cooperatively with others and contributes to group with ideas, suggestions and effort. Demonstrating competence in participating as a member of a team includes doing own share of tasks necessary to complete a project; encouraging team members by listening and responding appropriately to their contributions; building on individual team members' strengths; resolving differences for the benefit of the team; taking personal responsibility for accomplishing goals; and responsibly challenging existing procedures, policies or authorities.
10. **Teaches Others** — Helps others learn. Demonstrating competence in teaching others includes helping others to apply related concepts and theories to tasks through coaching or other means; identifying training

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needs; conveying job information to allow others to see its applicability and relevance to tasks; and assessing performance and providing constructive feedback/reinforcement.

11. **Serves Clients/Customers** — Works and communicates with clients and customers to satisfy their expectations. Demonstrating competence in serving clients and customers includes actively listening to customers to avoid misunderstandings and identifying needs; communicating in a positive manner especially when handling complaints or conflict; and efficiently obtaining additional resources to satisfy client needs.
12. **Exercises Leadership** — Communicates thoughts, feelings and ideas to justify a position; encourages, persuades, convinces or otherwise motivates an individual or groups, including responsibly challenging existing procedures, policies or authority. Demonstrating competence in exercising leadership includes making positive use of the rules/values followed by others; justifying a position logically and appropriately; establishing credibility through competence and integrity; and taking minority viewpoints into consideration.
13. **Negotiates to Arrive at a Decision** — Works toward an agreement that may involve exchanging specific resources or resolving divergent interests. Demonstrating competence in negotiating to arrive at a decision involves researching opposition and the history of the conflict; setting realistic and attainable goals; presenting facts and arguments; listening to and reflecting on what has been said; clarifying problems and resolving conflicts; adjusting quickly to new facts/ideas; proposing and examining possible options; and making reasonable compromises.
14. **Works with Cultural Diversity** — Works well with men and women and with a variety of ethnic, social or educational backgrounds. Demonstrating competence in working with cultural diversity involves understanding one's own culture and those of others and how they differ; respecting the rights of others while helping them make cultural adjustments where necessary; basing impressions on individual performance, not on stereotypes; and understanding concerns of members of other ethnic and gender groups.

Systems

15. **Understands Systems** — Knows how social, organizational and technological systems work and operates effectively within them. Demonstrating competence in understanding systems involves knowing how a system's structures relate to goals; responding to the demands of the system/ organization; knowing the right people to ask for information and where to get resources; and functioning within the formal and informal codes of the social/organizational system.

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- 16. Monitors and Corrects Performance** — Distinguishes trends, predicts impact of actions on system operations, diagnoses deviations in the function of a system/organization and takes necessary action to correct performance. Demonstrating competence in monitoring and correcting performance includes identifying trends and gathering needed information about how the system is intended to function; detecting deviations from system's intended purpose; troubleshooting the system; and making changes to the system to rectify system functioning and to ensure quality of product.
- 17. Improves and Designs Systems** — Makes suggestions to modify existing systems to improve products or services and develops new or alternative systems. Demonstrating competence in improving or designing systems involves making suggestions for improving the functioning of the system/organization; recommending alternative system designs based on relevant feedback; and responsibly challenging the status quo to benefit the larger system.
- 18. Selects Technology** — Judges which set of procedures, tools or machines, including computers and their programs, will produce the desired results. Demonstrating competence in selecting technology includes determining desired outcomes and applicable constraints; visualizing the necessary methods and applicable technology; evaluating specifications; and judging which machine or tool will produce the desired results.
- 19. Applies Technology to Task** — Understands the overall intent and the proper procedures for setting up and operating machines, including computers and their programming systems. Demonstrating competence in how to apply technology to task includes understanding how different parts of machines interact and how machines interact with broader production systems; on occasion installing machines including computers; setting up machines or systems of machines efficiently to get desired results; accurately interpreting machine output; and detecting errors from program output.
- 20. Maintains and Troubleshoots Technology** — Prevents, identifies or solves problems in machines, computers and other technologies. Demonstrating competence in maintaining and troubleshooting technology includes identifying, understanding and performing routine preventative maintenance and service on technology; detecting more serious problems; generating workable solutions to correct deviations; and recognizing when to get additional help.

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FOUNDATION SKILLS

Basic Skills

- 1. Reading** — Locates, understands and interprets written information in prose and documents—including manuals, graphs and schedules—to perform tasks; learns from text by determining the main idea or essential message; identifies relevant details, facts and specifications; infers or locates the meaning of unknown or technical vocabulary; judges the accuracy, appropriateness, style and plausibility of reports, proposals or theories of other writers.
- 2. Writing** — Communicates thoughts, ideas, information and messages in writing; records information completely and accurately; composes and creates documents such as letters, directions, manuals, reports, proposals, graphs, flow-charts; uses language, style, organization and format appropriate to the subject matter, purpose and audience; includes supporting documentation and attends to level of detail; and checks, edits and revises for correct information, appropriate emphasis, form, grammar, spelling and punctuation.
- 3. Arithmetic** — Performs basic computations; uses basic numerical concepts such as whole numbers and percentages in practical situations; makes reasonable estimates of arithmetic results without a calculator; and uses tables, graphs, diagrams and charts to obtain or convey quantitative information.
- 4. Mathematics** — Computational skills needed in maintaining records, estimating results, using spreadsheets or applying statistical process.
- 5. Listening** — Receives, attends to, interprets and responds to verbal messages and other cues such as body language in ways that are appropriate to the purpose; for example, to comprehend, to learn, to critically evaluate, to appreciate or to support the speaker.
- 6. Speaking** — Organizes ideas and communicates oral messages appropriate to listeners and situations; participates in conversation, discussion and group presentations; selects an appropriate medium for conveying a message; uses verbal language and other cues such as body language appropriate in style, tone and level of complexity to the audience and the occasion; speaks clearly and communicates a message; understands and responds to listener feedback; and asks questions when needed.

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Thinking Skills

7. **Creative Thinking** — Uses imagination freely, combines ideas or information in new ways, makes connections between seemingly unrelated ideas and reshapes goals in ways that reveal new possibilities.
8. **Decision Making** — Specifies goals and constraints, generates alternatives, considers risks and evaluates and chooses best alternative.
9. **Problem Solving** — Recognizes that a problem exists (i.e., there is a discrepancy between what is and what should or could be); identifies possible reasons for the discrepancy; devises and implements a plan of action to resolve it; evaluates and monitors progress; and revises plan as indicated by findings.
10. **Seeing Things in the Mind's Eye** — Organizes and processes symbols, pictures, graphs, objects or other information; for example, sees a building from a blueprint; a system's operation from schematics; the flow of work activities from narrative descriptions; or the taste of food from reading a recipe.
11. **Knowing How to Learn** — Uses efficient learning techniques to acquire and apply new knowledge and skills.
12. **Reasoning** — Discovers a rule or principle underlying the relationship between two or more objects and applies it in solving a problem.

Personal Qualities

13. **Responsibility** — Exerts a high level of effort and perseverance toward goal attainment; works hard to become excellent at doing tasks by setting high standards, paying attention to details, working well and displaying a high level of concentration even when assigned an unpleasant task; and displays high standards of attendance, punctuality, enthusiasm, vitality and optimism in approaching and completing tasks.
14. **Self-Esteem** — Believes in own self-worth and maintains a positive view of self.
15. **Social** — Demonstrates understanding, friendliness, adaptability, empathy and politeness in new and on-going group settings; asserts self in familiar and unfamiliar social situations; relates well to others; responds appropriately as the situation requires; and takes an interest in what others say and do.
16. **Self-Management** — Assesses own knowledge, skills and abilities accurately; sets well-defined and realistic personal goals; monitors progress

==== **Appendix B – SCANS Competencies**

toward goal attainment and motivates self through goal achievement; exhibits self-control and responds to feedback unemotionally and non-defensively; and is a "self-starter."

17. Integrity/Honesty — Chooses ethical courses of action.

Appendix C – Show-Me Standards

MISSOURI SHOW-ME STANDARDS

Performance Standards

GOAL 1

Students in Missouri public schools will acquire the knowledge and skills to gather, analyze and apply information and ideas.

Students will demonstrate within and integrate across all content areas the ability to:

1. develop questions and ideas to initiate and refine research
2. conduct research to answer questions and evaluate information and ideas
3. design and conduct field and laboratory investigations to study nature and society
4. use technological tools and other resources to locate, select and organize information
5. comprehend and evaluate written, visual and oral presentations and works
6. discover and evaluate patterns and relationships in information, ideas and structures
7. evaluate the accuracy of information and the reliability of its sources
8. organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation
9. identify, analyze and compare the institutions, traditions and art forms of past and present societies
10. apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers

GOAL 2

Students in Missouri public schools will acquire the knowledge and skills to communicate effectively within and beyond the classroom.

Students will demonstrate within and integrate across all content areas the ability to:

1. plan and make written, oral and visual presentations for a variety of purposes and audiences
2. review and revise communications to improve accuracy and clarity
3. exchange information, questions and ideas while recognizing the perspectives of others

Appendix C – Show-Me Standards

4. present perceptions and ideas regarding works of the arts, humanities and sciences
5. perform or produce works in the fine and practical arts
6. apply communication techniques to the job search and to the workplace
7. use technological tools to exchange information and ideas

GOAL 3

Students in Missouri public schools will acquire the knowledge and skills to recognize and solve problems.

Students will demonstrate within and integrate across all content areas the ability to:

1. identify problems and define their scope and elements
2. develop and apply strategies based on ways others have prevented or solved problems
3. develop and apply strategies based on one's own experience in preventing or solving problems
4. evaluate the processes used in recognizing and solving problems
5. reason inductively from a set of specific facts and deductively from general premises
6. examine problems and proposed solutions from multiple perspectives
7. evaluate the extent to which a strategy addresses the problem
8. assess costs, benefits and other consequences of proposed solutions

GOAL 4

Students in Missouri public schools will acquire the knowledge and skills to make decisions and act as responsible members of society.

Students will demonstrate within and integrate across all content areas the ability to

1. explain reasoning and identify information used to support decisions
2. understand and apply the rights and responsibilities of citizenship in Missouri and the United States
3. analyze the duties and responsibilities of individuals in societies
4. recognize and practice honesty and integrity in academic work and in the workplace
5. develop, monitor and revise plans of action to meet deadlines and accomplish goals
6. identify tasks that require a coordinated effort and work with others to complete those tasks

Appendix C – Show-Me Standards

7. identify and apply practices that preserve and enhance the safety and health of self and others
8. explore, prepare for and seek educational and job opportunities

Knowledge Standards

Communication Arts

In Communication Arts, students in Missouri public schools will acquire a solid foundation which includes knowledge of and proficiency in

1. speaking and writing standard English (including grammar, usage, punctuation, spelling, capitalization)
2. reading and evaluating fiction, poetry and drama
3. reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
4. writing formally (such as reports, narratives, essays) and informally (such as outlines, notes)
5. comprehending and evaluating the content and artistic aspects of oral and visual presentations (such as story-telling, debates, lectures, multi-media productions)
6. participating in formal and informal presentations and discussions of issues and ideas
7. identifying and evaluating relationships between language and culture

Fine Arts

In Fine Arts, students in Missouri public schools will acquire a solid foundation which includes knowledge of

1. process and techniques for the production, exhibition or performance of one or more of the visual or performed arts
2. the principles and elements of different art forms
3. the vocabulary to explain perceptions about and evaluations of works in dance, music, theater and visual arts
4. interrelationships of visual and performing arts and the relationships of the arts to other disciplines
5. visual and performing arts in historical and cultural contexts

Appendix C – Show-Me Standards

Health/Physical Education

In Health/Physical Education, students in Missouri public schools will acquire a solid foundation which includes knowledge of

1. structures of, functions of, and relationships among human body systems
2. principles and practices of physical and mental health (such as personal health habits, nutrition, stress management)
3. diseases and methods for prevention, treatment and control
4. principles of movement and physical fitness
5. methods used to assess health, reduce risk factors, and avoid high risk behaviors (such as violence, tobacco, alcohol and other drug use)
6. consumer health issues (such as the effects of mass media and technologies on safety and health)
7. responses to emergency situations

Mathematics

In Mathematics, students in Missouri public schools will acquire a solid foundation which includes knowledge of

1. addition, subtraction, multiplication and division; other number sense, including numeration and estimation; and the application of these operations and concepts in the workplace and other situations
2. geometric and spatial sense involving measurement (including length, area, volume), trigonometry, and similarity and transformations of shapes
3. data analysis, probability and statistics
4. patterns and relationships within and among functions and algebraic, geometric and trigonometric concepts
5. mathematical systems (including real numbers, whole numbers, integers, fractions), geometry, and number theory (including primes, factors, multiples)
6. discrete mathematics (such as graph theory, counting techniques, matrices)

Science

In Science, students in Missouri public schools will acquire a solid foundation which includes knowledge of

1. properties and principles of matter and energy
2. properties and principles of force and motion
3. characteristics and interactions of living organisms
4. changes in ecosystems and interactions of organisms with their environments

Appendix C – Show-Me Standards

5. processes (such as plate movement, water cycle, air flow) and interactions of earth's biosphere, atmosphere, lithosphere and hydrosphere
6. composition and structure of the universe and the motions of the objects within it
7. processes of scientific inquiry (such as formulating and testing hypotheses)
8. impact of science, technology and human activity on resources and the environment

Social Studies

In Social Studies, students in Missouri public schools will acquire a solid foundation which includes knowledge of

1. principles expressed in the documents shaping constitutional democracy in the United States
2. continuity and change in the history of Missouri, the United States and the world
3. principles and processes of governance systems
4. economic concepts (including productivity and the market system) and principles (including the laws of supply and demand)
5. the major elements of geographical study and analysis (such as location, place, movement, regions) and their relationships to changes in society and environment
6. relationships of the individual and groups to institutions and cultural traditions
7. the use of tools of social science inquiry (such as surveys, statistics, maps, documents)

Each of the standards in this document has been cross walked with The Show-Me Standards that were approved as a final regulation by the Missouri State Board of Education, January 18, 1996. These standards can be found online at <http://www.dese.state.mo.us/standards.html>. The coding system of the Show-Me Performance (Process) Standards used in the curriculum guide are:

1.1 = Goal 1, Standard 1, etc.

The coding system for the Show-Me Knowledge (Content) Standards is designated by a two-letter abbreviation associated with an area of study and the standard's number. Examples are:

- CA 1 = Communication Arts, standard 1
- FA 1 = Fine Arts, standard 1
- HP 4 = Health/Physical Education, standard 4
- MA 2 = Mathematics, standard 2
- SC 5 = Science, standard 5
- SS 6 = Social Studies, standard 6

Appendix D – Coop Policy

APPENDIX D

D. KENT KING
ACTING COMMISSIONER OF EDUCATION

DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION

P.O. BOX 480
JEFFERSON CITY, MISSOURI 65102-0480

September 1, 2000 Revision:

Vocational Policy Letter
4

TO: School Administrators

FROM: Nancy J. Headrick
Assistant Commissioner
Vocational and Adult Education

RE: Policies for Credit and Supervised Employment for Approved High School Cooperative Vocational Education Programs

The following policies apply to the operation of cooperative education as part of DESE approved vocational education programs:

1. The teacher/coordinator must provide both in-class related instruction and supervision of students' on-the-job training.
2. Students must be enrolled in both the class and the supervised employment simultaneously.
3. Training stations must be appropriate for the occupational area for which the program is designed.
4. There must be a written Instructional Management Plan (IMP) between the school and the training sponsor that identifies both in-class instruction and on-the-job training that the student will receive.
5. A current IMP must be on file for each student receiving cooperative education credit.
6. There must be a written training agreement between the school and the training sponsor which assures that students are employed and compensated in conformity with federal, state, and local laws and without regard to race, color, national origin, sex, or disability.
7. The credit awarded for on-the-job training should be 1 unit per school year for each 10 hours of employment per week. No more than 2 credits may be awarded for on-the-job training during a school year.
8. Teacher/coordinator employment contracts should include an additional week beyond regular teacher contracts for each twelve to fifteen cooperative education students so that counseling, placement, scheduling and training station development can be conducted.
9. The teacher/coordinator's schedule must include 225 minutes per week for each 12-15 cooperative students for supervision of on-the-job training.
10. Evaluation of students on the job must include occupationally specific skills as well as attitudinal criteria.

Appendix F – Bibliography

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