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ABSTRACT

This document contains four learning standards for career development and occupational studies at three levels: elementary, intermediate, and commencement. The first section consists of these four standards: (1) career development, (2) integrated learning, (3a) universal foundation skills, and (3b) career majors. The format for displaying the standards includes the following: key ideas regarding the standard; performance indicators describing expectations for students and designated for one of the three levels; and sample tasks suggesting evidence of progress toward the standard at a given level. Selected sample tasks are followed by an asterisk indicating their appropriateness for inclusion in a student's career plan. The second section provides samples of student work that are intended to begin the process of articulating the performance standards at each level of achievement. Each sample indicates level, context, performance indicators, and commentary. (YLB)

LEARNING STANDARDS FOR CAREER DEVELOPMENT AND OCCUPATIONAL STUDIES

NEW YORK
THE STATE OF LEARNING
THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT

Learning Standards for

Career Development and Occupational Studies

Revised Edition
July 1996

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Acknowledgments

Many contributors to this document are recognized in the *Preliminary Draft Framework for Career Development and Occupational Studies.* We are also grateful to the many teachers from throughout New York State who contributed performance tasks and samples of student work for possible inclusion in this revised edition. Listed below are the names of those educators who submitted or reviewed the materials that appear in this document.

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Many of the competency areas and/or performance indicators contained in the Career Major sections have been adapted from National Skill Standards Projects.

Introduction

This revised edition of the *Learning Standards for Career Development and Occupational Studies* incorporates changes to the content standards and performance indicators based on extensive review by the public. It should be considered a working document; as educational practice evolves, these standards will continually be revised.

In this document, the format for displaying the standards includes the following:

- ❑ key ideas regarding the standard are preceded by a number
- ❑ performance indicators describing expectations for students are preceded by a bullet (•) and have been designated as:
  - elementary, intermediate, and commencement levels for Career Development, Integrated Learning, and Universal Foundation Skills indicating a K-12 delivery
  - core, specialized, and experiential levels for career majors indicating a 9-12 delivery
- ❑ sample tasks suggesting evidence of progress toward the standard at a given level are preceded by a triangle (▲)
- ❑ select sample tasks are followed by an asterik (*) indicating their appropriateness for inclusion in a student's career plan.

New in this edition are samples of student work, along with teachers' comments on the work. The examples are intended to provide some ideas of tasks that support attainment of the performance standards. They are not models of excellence. Rather, they represent various levels of acceptable work. It is important to remember that these are just suggestions of ways that students can demonstrate progress toward achieving the standards.

The State Education Department will continue to collect and publish samples of student work. As teachers become more familiar with the standards and students become more proficient in meeting them, the level of the performance standards and content standards will continue to rise.

The Board of Regents recognizes the diversity of students in New York State, including students with disabilities, students with limited English proficiency, gifted students, and educationally disadvantaged students, and has made a strong commitment to integrating the education of all students into the total school program. The standards in the framework apply to all students, regardless of their experiential background, capabilities, developmental and learning differences, interests, or ambitions. A classroom typically includes students with a wide range of abilities who may pursue multiple pathways to learn effectively, participate meaningfully, and work toward attaining the curricular standards. Students with diverse learning needs may need accommodations or adaptations of instructional strategies and materials to enhance their learning and/or adjust for their learning capabilities.

Learning standards for career development and occupational studies serve a multifaceted role.

The content standards, performance indicators, and sample tasks identified in this document are intended to provide students with:

- knowledge and skills that will provide a solid base for transition from school, including postsecondary study, to the workplace
- knowledge and skills that will help prepare them for a workplace being changed by technology and the challenges of a global economy
- authentic, action-oriented activities that will raise achievement of academics through practical applications of theoretical knowledge
- exposure to career options through exploration and planning, and exposure to industry-specific technical skills for those who intensify their study in career majors
- a career plan, beginning at the elementary level, that will add focus and direction to their experiences as they progress through middle and secondary education.

Learning Standards for Career Development and Occupational Studies at Three Levels

Standard 1: Career Development
Students will be knowledgeable about the world of work, explore career options, and relate personal skills, aptitudes, and abilities to future career decisions.

Standard 2: Integrated Learning
Students will demonstrate how academic knowledge and skills are applied in the workplace and other settings.

Standard 3a: Universal Foundation Skills
Students will demonstrate mastery of the foundation skills and competencies essential for success in the workplace.

and

Standard 3b: Career Majors
Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

CAREER PLAN as prescribed in these learning standards is intended to promote exploration and research into broad career areas of interest to individual students. Basic principles of career planning such as decision-making, self-evaluation, and goal setting have been integrated within the sample tasks. It is not the intent of these learning standards to limit options or narrowly define the educational preparation of students.

Standard 1—Career Development

Elementary

1. Students will learn about the changing nature of the workplace, the value of work to society, and the connection of work to the achievement of personal goals.

Students:

- **begin a career plan that would assist in the transition from school to eventual entry into a career option**
- **demonstrate an awareness of their interests, aptitudes, and abilities**
- **know the value of work to the individual and society in general**
- **describe the changing nature of the workplace brought about by global competition and technology**
- **explore their preferences for working with people, information, and/or things**
- **demonstrate understanding of the relationship of decision making to the attainment of future goals**
- **describe the changing roles of men and women at home and in the workplace.**

This is evident, for example, when students:

- ▲ classify hobbies, favorite school subjects, interests, and special talents with their relationship to working with people, information, or things*
- ▲ identify favorite school subjects and special talents and relate them to specific occupations*
- ▲ explain reasons why people work, describe different occupations in their community, including those in public service, and how these occupations benefit others (e.g., firefighter, police officer, pharmacist, attorney, teacher)
- ▲ identify long-range personal goals and relate their attainment to successful employment*
- ▲ identify common skills that would be important for success in the workplace and relate them to personal strengths and areas in need of improvement*
- ▲ describe nontraditional career options and provide examples of how the roles of men and women are changing in the home, workplace, and community (e.g., women in law enforcement and men in nursing)
- ▲ explain how global competition and technology have changed three specific occupations
- ▲ relate the negative impact of unemployment to the health of the individual and the economy in general.

Intermediate

1. Students will learn about the changing nature of the workplace, the value of work to society, and the connection of work to the achievement of personal goals.

Students:

- **continue development of a career plan that would assist in the transition from school to eventual entry into a career option of their choosing**
- **demonstrate an understanding of the relationship among personal interests, skills and abilities, and career research**
- **understand the relationship of personal interests, skills, and abilities to successful employment**
- **demonstrate an understanding of the relationship between the changing nature of work and educational requirements**
- **understand the relationship of personal choices to future career decisions.**

This is evident, for example, when students:

- ▲ identify characteristics and educational requirements of three career options, including those considered nontraditional*
- ▲ reassess personal interests and abilities and match them to career options*
- ▲ contrast the advantages and disadvantages of working for someone else with owning a business
- ▲ reevaluate long-range personal goals, including employment priorities such as salary, working conditions, and status*
- ▲ explain the importance of punctuality, dependability, integrity, and getting along with others for success in a work environment
- ▲ work cooperatively in group situations and analyze the importance of using collective abilities in achieving group goals and objectives*
- ▲ explain through example how work can influence an individual's life style.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).
Sample tasks appropriate for inclusion in a student's career plan are followed by (*).

STANDARD 1

Students will be knowledgeable about the world of work, explore career options, and relate personal skills, aptitudes, and abilities to future career decisions.

Commencement

1. Students will learn about the changing nature of the workplace, the value of work to society, and the connection of work to the achievement of personal goals.

Students:

- **complete the development of a career plan that would permit eventual entry into a career option of their choosing**
- **apply decision-making skills in the selection of a career option of strong personal interest**
- **analyze skills and abilities required in a career option and relate them to their own skills and abilities.**

This is evident, for example, when students:

- ▲ reevaluate long-range personal goals and match them to a career option*
- ▲ prepare a personal balance sheet showing an inventory of acquired skills, qualities, and experiences needed for successful employment in a career option*
- ▲ prepare a research paper that contains:
  - -details of three specific jobs within the career option
  - -the education and/or training level and qualifications necessary for entry-level/career-sustaining employment
  - -the number of job openings in the career option
  - -list of three postsecondary programs offering advanced study/training in the career option
  - -entrepreneurial possibilities*
- ▲ develop resumes and letters of application and demonstrate effective interviewing techniques that could be used to gain entry into a career option*
- ▲ design a personal school-to-work plan containing specific steps/activities toward attainment of a career goal.*

STANDARD 1

Standard 2—Integrated Learning

Elementary

1. Integrated learning encourages students to use essential academic concepts, facts, and procedures in applications related to life skills and the world of work. This approach allows students to see the usefulness of the concepts that they are being asked to learn and to understand their potential application in the world of work.

Students:

- **identify academic knowledge and skills that are required in specific occupations**
- **demonstrate the difference between the knowledge of a skill and the ability to use the skill**
- **solve problems that call for applying academic knowledge and skills.**

This is evident, for example, when students:

- ▲ describe jobs in the local community; list academic knowledge and technical skills needed to perform a specific job, and make a diorama showing a person engaged in work*
- ▲ retell a story about how a school cafeteria employee uses mathematical and English language arts skills on the job
- ▲ interview a person from the community in an occupation of interest and describe for the class how the competencies they are learning in school (mathematics, science, health, English language arts) are used in the selected occupation
- ▲ integrate mathematical/science concepts to plan and design a garden, basketball court, or fish pond
- ▲ describe jobs in the local community, list academic knowledge and technical skills needed to perform a specific job, and make a diorama showing a person engaged in work
- ▲ apply mathematical skills to purchase items from a grocery store, compare prices, total their purchases, and count change
- ▲ explain why being able to tell time is important to an airline pilot, a football referee, or a teacher
- ▲ participate in a show-and-tell exercise to inform their classmates how reading, writing, speaking, and mathematics are used by a poet, musician, nurse, clown, or police officer
- ▲ select four samples of their work (completed hands-on projects depicting various occupations) and describe the academic knowledge and technical skills needed for those particular jobs.*

Intermediate

1. Integrated learning encourages students to use essential academic concepts, facts, and procedures in applications related to life skills and the world of work. This approach allows students to see the usefulness of the concepts that they are being asked to learn and to understand their potential application in the world of work.

Students:

- **apply academic knowledge and skills using an interdisciplinary approach to demonstrate the relevance of how these skills are applied in work-related situations in local, state, national, and international communities**
- **solve problems that call for applying academic knowledge and skills**
- **use academic knowledge and skills in an occupational context, and demonstrate the application of these skills by using a variety of communication techniques (e.g., sign language, pictures, videos, reports, and technology).**

This is evident, for example, when students:

- ▲ match an inventory of academic knowledge and technical skills to specific careers in which they would be useful
- ▲ prepare job descriptions with emphasis on language arts and mathematic requirements
- ▲ work in teams to complete a promotional campaign, applying the principles of various disciplines (e.g., art, music, language arts and languages other than English) to sell products on a national level*
- ▲ attend a school or community theater production and then interview the director, cast, and stage crew, and prepare a presentation illustrating academic knowledge and technical skills applied in various theater careers*
- ▲ complete a project that demonstrates how two or more academic disciplines are applied to implement news media presentations
- ▲ prepare a report based on a shadowing experience, describing the various jobs observed and the academic knowledge and technical skills needed for these jobs
- ▲ use mathematical skills to compute performance statistics for a school athletic team
- ▲ edit the work of other students for a school newsletter
- ▲ use language arts skills to evaluate a student debate
- ▲ select six samples of their work (completed hands-on projects depicting various occupations) and describe the academic knowledge and technical skills that are applied for occupations.*

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).
Sample tasks appropriate for inclusion in a student's career plan are followed by (*).

STANDARD 2

Students will demonstrate how academic knowledge and skills are applied in the workplace and other settings.

Commencement

1. Integrated learning encourages students to use essential academic concepts, facts, and procedures in applications related to life skills and the world of work. This approach allows students to see the usefulness of the concepts that they are being asked to learn and to understand their potential application in the world of work.

Students:

- **demonstrate the integration and application of academic and occupational skills in their school learning, work, and personal lives.**
- **use academic knowledge and skills in an occupational context, and demonstrate the application of these skills by using a variety of communication techniques (e.g., sign language, pictures, videos, reports, and technology)**
- **research, interpret, analyze, and evaluate information and experiences as related to academic knowledge and technical skills when completing a career plan.**

This is evident, for example, when students:

- ▲ read a series of job descriptions or training plans of interest to identify the necessary application of academic knowledge and technical skills that are required for particular careers as well as the job outlook (decline/growth) and possible earnings*
- ▲ interview a medical specialist and develop a presentation using a variety of tools/technology to depict knowledge and skills that are required for this career*
- ▲ select several local employers as well as employers with global operations and complete a project (e.g., video, photo collage, or report) that reflects the academic knowledge and technical skills required, along with the job outlook and potential earning capacity in a competitive international marketplace*
- ▲ complete an internship which focuses on a particular career of interest (e.g., architect, electrician, or veterinarian) and develop a slide presentation to demonstrate how concepts from mathematics, science, and/or English language arts are applied in a particular career*
- ▲ work in teams to formulate a historical presentation on specific careers and demonstrate how job requirements and training are changing due to new technology
- ▲ use various forms of technology and communication techniques (e.g., a CD-ROM, a video, slide show and sign language) to describe and illustrate how societal, economic, and governmental changes may require exploring a variety of careers and developing broad-based transferable skills that are needed for gainful employment*
- ▲ produce an annual career plan that includes eight samples of their work (e.g., completed hands-on projects, reports based on internships and/or depicting various occupations) and describe why they selected the particular samples of work, and indicate possible career choices of interest*
- ▲ use effective skills and techniques in a simulated job interview.

Standard 3a—Universal Foundation Skills

Elementary

Basic Skills

1. Basic skills include the ability to read, write, listen, and speak as well as perform arithmetical and mathematical functions.

Students:

- **listen to and read the ideas of others and express themselves both orally and in writing; they use basic mathematical concepts and computations to solve problems.**

This is evident, for example, when students:

- ▲ listen to and repeat simple directions
- ▲ read a variety of materials and prepare a report
- ▲ follow directions to power up a computer
- ▲ compile an inventory of office equipment
- ▲ use probability to solve a problem or use a single statistic to make a prediction
- ▲ measure an area for a swimming pool, basketball court, or employee work station.

Thinking Skills

2. Thinking skills lead to problem solving, experimenting, and focused observation and allow the application of knowledge to new and unfamiliar situations.

Students:

- **use ideas and information to make decisions and solve problems related to accomplishing a task.**

This is evident, for example, when students:

- ▲ provide examples of ways to raise money for a school field trip
- ▲ solve a riddle, puzzle, or problem, using written or oral instructions
- ▲ set up a computer, a monitor, and a keyboard according to written or oral instructions.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3a

Students will demonstrate mastery of the foundation skills and competencies essential for success in the workplace.

Elementary

Personal Qualities

3. Personal qualities generally include competence in self-management and the ability to plan, organize, and take independent action.

Students:

- **demonstrate the personal qualities that lead to responsible behavior.**

This is evident, for example, when students:

- ▲ arrive at school and complete assignments on time; explain why these behaviors would be important to an employer
- ▲ provide examples of people acting responsibly/irresponsibly in the community
- ▲ complete an inventory of personal strengths and select areas in which they would like to improve
- ▲ demonstrate positive behaviors through interactions in the classroom (e.g., sharing resources, helping classmates).

Interpersonal Skills

4. Positive interpersonal qualities lead to teamwork and cooperation in large and small groups in family, social, and work situations.

Students:

- **relate to people of different ages and from diverse backgrounds.**

This is evident, for example, when students:

- ▲ work cooperatively with peers to accomplish a task
- ▲ describe, as models, successful people of varied backgrounds
- ▲ display skills needed to resolve conflicts with other people
- ▲ explain the importance of getting along with people in a work environment who are different from oneself.

STANDARD 3a

Standard 3a—Universal Foundation Skills

Elementary

Technology

5. Technology is the process and product of human skill and ingenuity in designing and creating things from available resources to satisfy personal and societal needs and wants.

Students:

- **demonstrate an awareness of the different types of technology available to them and of how technology affects society.**

This is evident, for example, when students:

- ▲ select the appropriate technology for designing and creating a flyer for a school-sponsored event
- ▲ identify examples of technology found at home, at school, and in a business environment
- ▲ choose a career area and research how technology has changed that cluster of occupations.

Managing Information

6. Information management focuses on the ability to access and use information obtained from other people, community resources, and computer networks.

Students:

- **describe the need for data and obtain data to make decisions.**

This is evident, for example, when students:

- ▲ explain the practical uses of weather forecasting data as it relates to the farm industry
- ▲ plan a school store and determine what items might sell best
- ▲ listen to a presentation about a career area and write a report summarizing the information.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3a

Students will demonstrate mastery of the foundation skills and competencies essential for success in the workplace.

Elementary

Managing Resources

7. Using resources includes the application of financial and human factors, and the elements of time and materials to successfully carry out a planned activity.

Students:

- **demonstrate an awareness of the knowledge, skills, abilities, and resources needed to complete a task.**

This is evident, for example, when students:

- ▲ describe the resources needed to inventory the art supply cabinet in the classroom
- ▲ explain the resources needed to build a simple item (e.g., footstool, sandbox).

Systems

8. Systems skills include the understanding of and ability to work within natural and constructed systems.

Students:

- **demonstrate understanding of how a system operates and identify where to obtain information and resources within the system.**

This is evident, for example, when students:

- ▲ understand the process used to order supplies for a school store or local business
- ▲ explain the various components of the school system.

STANDARD 3a

Standard 3a—Universal Foundation Skills

Intermediate

Basic Skills

1. Basic skills include the ability to read, write, listen, and speak as well as perform arithmetical and mathematical functions.

Students:

- **listen to and read the ideas of others and analyze what they hear and read; acquire and use information from a variety of sources; and apply a combination of mathematical operations to solve problems in oral or written form.**

This is evident, for example, when students:

- ▲ follow directions that involve a series of actions
- ▲ locate and use information on a wide range of topics from many different sources
- ▲ present an oral report to the class after investigating several career clusters
- ▲ record data and prepare a graph on the movement of the stock market or a particular stock
- ▲ explore ways in which geometry is used in everyday life
- ▲ solve basic problems involving integers, fractions, and decimals.

Thinking Skills

2. Thinking skills lead to problem solving, experimenting, and focused observation and allow the application of knowledge to new and unfamiliar situations.

Students:

- **evaluate facts, solve advanced problems, and make decisions by applying logic and reasoning skills.**

This is evident, for example, when students:

- ▲ describe the best method to evaluate customer interest in the establishment of a new product line for a business
- ▲ describe the best method to evaluate student interest in the establishment of a new school sport or club
- ▲ create a work schedule to ensure equity in employee hours and days worked
- ▲ sequence facts in a logical order to solve a problem.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

Intermediate

Personal Qualities

3. Personal qualities generally include competence in self-management and the ability to plan, organize, and take independent action.

Students:

- **demonstrate an understanding of the relationship between individuals and society and interact with others in a positive manner.**

This is evident, for example, when students:

- ▲ participate in a fund-raising activity in or out of school such as carwash, flower sale, etc. (refer to Regents Rule 19.6 governing student fund-raising)
- ▲ volunteer to participate in a local charitable organization's activities
- ▲ work with other students on a group project to improve one aspect of the school's operation.

Interpersonal Skills

4. Positive interpersonal qualities lead to teamwork and cooperation in large and small groups in family, social, and work situations.

Students:

- **demonstrate the ability to work with others, present facts that support arguments, listen to dissenting points of view, and reach a shared decision.**

This is evident, for example, when students:

- ▲ react positively to constructive criticism
- ▲ work as a member of a team toward a common goal.

STANDARD 3a

Standard 3a—Universal Foundation Skills

Intermediate

Technology

5. Technology is the process and product of human skill and ingenuity in designing and creating things from available resources to satisfy personal and societal needs and wants.

Students:

- **select and use appropriate technology to complete a task.**

This is evident, for example, when students:

- ▲ use a telecommunications service to check current airline schedules and price information for a trip to another state or country
- ▲ use appropriate technology to present information in table/chart form
- ▲ use word processing software to make an inquiry to a business
- ▲ make a presentation explaining how technology has changed the work site.

Managing Information

6. Information management focuses on the ability to access and use information obtained from other people, community resources, and computer networks.

Students:

- **select and communicate information in an appropriate format (e.g., oral, written, graphic, pictorial, multimedia).**

This is evident, for example, when students:

- ▲ prepare a financial report showing the annual revenue and expenses of a business or club for three years and presenting that information to a group
- ▲ design a chart or graph to evaluate personal progress toward a goal or objective
- ▲ collect the necessary data from local employers to develop a speakers' bureau for their school
- ▲ given directions, correctly complete a job application.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3a

Students will demonstrate mastery of the foundation skills and competencies essential for success in the workplace.

Intermediate

Managing Resources

7. Using resources includes the application of financial and human factors, and the elements of time and materials to successfully carry out a planned activity.

Students:

- **understand the material, human, and financial resources needed to accomplish tasks and activities.**

This is evident, for example, when students:

- ▲ develop a plan for a work experience (e.g., lawn mowing, snow removal, paper route) by formulating a budget, allocating equipment, and recording expenses and income
- ▲ create and follow a personal schedule to maximize the use of time.

Systems

8. Systems skills include the understanding of and ability to work within natural and constructed systems.

Students:

- **understand the process of evaluating and modifying systems within an organization.**

This is evident, for example, when students:

- ▲ survey teachers to develop modifications in the school's discipline policy
- ▲ observe how customer returns have been handled in a store over a period of time and develop strategies to improve the system
- ▲ describe the functioning of a simple ecosystem.

STANDARD 3a

Standard 3a—Universal Foundation Skills

Commencement

Basic Skills

1. Basic skills include the ability to read, write, listen, and speak as well as perform arithmetical and mathematical functions.

Students:

- **use a combination of techniques to read or listen to complex information and analyze what they hear or read; convey information confidently and coherently in written or oral form; and analyze and solve mathematical problems requiring use of multiple computational skills.**

This is evident, for example, when students:

- ▲ gather and use information presented in print and electronic sources to create a research report and database
- ▲ examine a case study to evaluate whether the information contained within it is adequate to support generalizations about the topic
- ▲ participate in debates, interviews, and panel discussions
- ▲ use word processing and desktop publishing software to present information on a sales campaign
- ▲ analyze a company's balance sheet and income statement for industry-recognized ratios for assets, liabilities, and net income/loss
- ▲ order and price inventory appropriately as part of a work experience program.

Thinking Skills

2. Thinking skills lead to problem solving, experimenting, and focused observation and allow the application of knowledge to new and unfamiliar situations.

Students:

- **demonstrate the ability to organize and process information and apply skills in new ways.**

This is evident, for example, when students:

- ▲ provide examples of ways to alter a work schedule to allow for more job sharing among two or more employees
- ▲ evaluate a variety of options suggested, select an option, explain the reason for the selection, and provide the strategies for implementation
- ▲ recognize a problem and design steps to solve the problem
- ▲ prepare and present a report on how knowledge gained from one content area helped solve a problem in another area.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3a

Students will demonstrate mastery of the foundation skills and competencies essential for success in the workplace.

Commencement

Personal Qualities

3. Personal qualities generally include competence in self-management and the ability to plan, organize, and take independent action.

Students:

- **demonstrate leadership skills in setting goals, monitoring progress, and improving their performance.**

This is evident, for example, when students:

- ▲ work with a local employer to establish a sales goal and devise a plan to reach that goal
- ▲ motivate other group members and demonstrate leadership skills in a student leadership organization or job experience
- ▲ give and accept constructive criticism in a group project
- ▲ evaluate decisions for legal and ethical implications
- ▲ establish a set of personal goals and record progress in attaining them.

Interpersonal Skills

4. Positive interpersonal qualities lead to teamwork and cooperation in large and small groups in family, social, and work situations.

Students:

- **communicate effectively and help others to learn a new skill.**

This is evident, for example, when students:

- ▲ demonstrate how to respond effectively to a dissatisfied customer
- ▲ assist in the teaching of an acquired skill in an elementary/ middle school class or business environment
- ▲ provide feedback to others in a group project
- ▲ participate in a job interview.

STANDARD 3a

Standard 3a—Universal Foundation Skills

Commencement

Technology

5. Technology is the process and product of human skill and ingenuity in designing and creating things from available resources to satisfy personal and societal needs and wants.

Students:

- **apply their knowledge of technology to identify and solve problems.**

This is evident, for example, when students:

- ▲ evaluate why a school or business facsimile (fax) machine is not working
- ▲ take the proper steps to make an inoperative printer work
- ▲ use a software program to compile and analyze statistical data and prepare a presentation for a group
- ▲ use an integrated software program to solve a business-related problem
- ▲ prepare a report predicting how technology may change various aspects of life 50 years from now.

Managing Information

6. Information management focuses on the ability to access and use information obtained from other people, community resources, and computer networks.

Students:

- **use technology to acquire, organize, and communicate information by entering, modifying, retrieving, and storing data.**

This is evident, for example, when students:

- ▲ construct a computer-generated form to survey local employers for possible participation in a work-study program
- ▲ use graphics software to present survey findings to the student body
- ▲ use telecommunications software to access and communicate information
- ▲ use presentation graphics software which will illustrate to a group of employers the increase in work-based learning experiences
- ▲ use a computer to record and organize statistical information to assist a coach of a school athletic team.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3a

Students will demonstrate mastery of the foundation skills and competencies essential for success in the workplace.

Commencement

Managing Resources

7. Using resources includes the application of financial and human factors, and the elements of time and materials to successfully carry out a planned activity.

Students:

- **allocate resources to complete a task.**

This is evident, for example, when students:

- ▲ plan a two-week activity that requires tasks to be divided among students or coworkers, including determining priorities and following timelines
- ▲ prepare a long-range budget for a school organization or hypothetical business
- ▲ complete multiple tasks for concurrent activities by adjusting personal schedules or negotiating deadlines
- ▲ work as a team to decide how resources should be allocated to accomplish a task.

Systems

8. Systems skills include the understanding of and ability to work within natural and constructed systems.

Students:

- **demonstrate an understanding of how systems performance relates to the goals, resources, and functions of an organization.**

This is evident, for example, when students:

- ▲ evaluate the roles or positions within an organization and make suggestions for improvement of the organization
- ▲ write a proposal for ways a company can reduce expenses
- ▲ prepare an organizational chart for a club or business
- ▲ develop a presentation using visual aids to explain how an automobile or other machine operates.

STANDARD 3a

Standard 3b—Career Majors

Core
Business/Information Systems

1. Basic Business Understanding

Students:

- **demonstrate an understanding of business, marketing, and multinational economic concepts, perform business-related mathematical computations, and analyze/interpret business-related numerical information.**

This is evident, for example, when students:

- ▲ explain the meaning of basic business and global economic terms
- ▲ provide examples of typical problems (e.g., declining sales, outdated hardware) that could arise in a business and explain how steps in the decision-making process could be used to solve such problems
- ▲ use spreadsheet software to forecast expenses for a business for three consecutive years
- ▲ interpret a 10-year graph of the Gross National Product (GNP) or Gross Domestic Product (GDP)
- ▲ demonstrate an understanding of basic international business concepts
- ▲ identify and locate major cities and trade regions throughout the world.

2. Business-Related Technology

Students:

- **select, apply, and troubleshoot hardware and software used in the processing of business transactions.**

This is evident, for example, when students:

- ▲ use touch keyboarding techniques to produce business documents (e.g., letters, memorandums, reports)
- ▲ use the components of various business technologies (e.g., CPU, disk drive, CD-ROM, modem, fax machine, scanner)
- ▲ enter data into various technological systems, using a variety of input devices (e.g., handwriting, keyboard, mouse, scanner, voice recognition)
- ▲ produce business documents and reports, using appropriate technology (e.g., business letter/word processing; business graphs and charts/spreadsheet and graphics software; inventory control reports/hand-held bar code scanners)
- ▲ use word processing software to prepare a form letter and do a mail merge soliciting customers for a simulated business
- ▲ use electronic media (e.g., e-mail, Internet/World Wide Web, fax) to communicate internationally.

STANDARD 3b

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

3. Information Management/Communication

Students:

- **prepare, maintain, interpret/analyze, and transmit/distribute information in a variety of formats while demonstrating the oral, nonverbal, and written communication skills essential for working in today's international service-/information-/technological-based economy.**

This is evident, for example, when students:

- ▲ compose and produce simple business documents (e.g., letters, memos, reports)
- ▲ prepare and deliver a three-minute oral presentation using at least one visual aid (e.g., marketing research report, stock market analysis)
- ▲ identify and interpret positive/negative facial expressions and other body language indicators
- ▲ identify and explain how and why specialized communication tools are used (e.g., voice mail, electronic mail, beepers, pagers)
- ▲ use simple electronic databases and spreadsheet information systems to manage a membership list or prepare a payroll ledger
- ▲ recognize challenges in business related to people speaking various languages
- ▲ identify international cultural similarities and differences and explain their relationship to international trade.

4. Business Systems

Students:

- **demonstrate an understanding of the interrelatedness of business, social, and economic systems/subsystems.**

This is evident, for example, when students:

- ▲ identify and explain the social, organizational, economic, business, and technological systems that stimulated the transition from an agricultural-based economy through an industrial-based economy to the current service-/information-/technological-based economy
- ▲ identify and explain aspects of basic systems that typically function in a business enterprise (e.g., administrative, financial, marketing)
- ▲ diagram the components (input, processing, output, feedback) of a typical business system and explain what documents/-materials/products are used in each component (e.g., billing, legal, marketing)
- ▲ explain and provide examples of the interrelationship of the free enterprise system and the marketing concept
- ▲ identify basic features of the sole proprietorship, partnership, corporation, and franchise systems, and decide which form of organization would be best for given situations
- ▲ identify the currency systems of major countries and calculate currency exchange transactions.

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Core

5. Resource Management

Students:

- **identify, organize, plan, and allocate resources (e.g., financial, materials/facilities, human, time) in demonstrating the ability to manage their lives as learners, contributing family members, globally competitive workers, and self-sufficient individuals.**

This is evident, for example, when students:

- ▲ explain the need for and the steps incurred by a business in setting goals and priorities to meet company objectives
- ▲ identify and discuss the process for constructing a simple operating budget for a specific purpose in a small business (e.g., advertising budget)
- ▲ list and explain various personal and business needs related to banking, investments, and insurance (e.g., personal checkbook, mutual funds, life insurance)
- ▲ explain various paycheck deductions (e.g., federal and State taxes, FICA)
- ▲ open and use personal savings and checking accounts
- ▲ assist Red Cross personnel in scheduling student volunteers for participation in a local blood donor event.

6. Interpersonal Dynamics

Students:

- **exhibit interpersonal skills essential for success in the multinational business world, demonstrate basic leadership abilities/skills, and function effectively as members of a work group or team.**

This is evident, for example, when students:

- ▲ outline essential personal attributes/attitudes for successful interpersonal relationships (e.g., appearance/cleanliness, integrity, punctuality, dedication/commitment)
- ▲ explain the many benefits inherent in a business with a culturally diverse workforce
- ▲ demonstrate an understanding of how the traditions of various major cultures affect international business practices
- ▲ use a case study to illustrate how a business might use a team approach, flextime, or job sharing in its daily operations
- ▲ list the key elements necessary to facilitate a business-related meeting
- ▲ teach a classmate how to reconcile a checking account or how to use telecommunications software
- ▲ participate in a job interview.

STANDARD 3b

Standard 3b—Career Majors

Specialized
Business/Information Systems

1. Basic Business Understanding

Students:

- **demonstrate an understanding of business, marketing, and multinational economic concepts, perform business-related mathematical computations, and analyze/interpret business-related numerical information.**

This is evident, for example, when students:

- ▲ explain and interpret advanced business and economics terms associated with their occupational cluster of study (e.g., reading and interpreting articles in business publications)
- ▲ develop a viable solution(s) for a case problem in a business simulation
- ▲ conduct a research project and make a presentation illustrating how the "law of supply and demand" applies to the local community
- ▲ use accounting or spreadsheet software to prepare an income statement and balance sheet for a simulated service business
- ▲ use appropriate software to produce several types of graphs (e.g., bar, pie) of the operating budget for the school district, the school store, or a local business for each of the past five years and provide an analysis of the financial trends
- ▲ describe the impact of international business activities on the local, regional, national, and international economies.

2. Business-Related Technology

Students:

- **select, apply, and troubleshoot hardware and software used in the processing of business transactions.**

This is evident, for example, when students:

- ▲ use advanced touch keyboarding techniques to produce complex business documents pertinent to the occupational cluster of study (e.g., purchase orders, newsletters)
- ▲ apply user manuals to set up and troubleshoot hardware devices and software programs
- ▲ integrate applications and files from various technologies/operating systems (hardware and software) to produce complex, business-quality products and documents (e.g., Apple OS files to MS-DOS files; integrating graphics into a newsletter)
- ▲ conduct a research project and provide a report about the various technologies used at a variety of local businesses
- ▲ evaluate which telecommunications technologies/methods are most appropriate for various given international business situations.

3. Information Management/Communication

Students:

- **prepare, maintain, interpret/analyze, and transmit/distribute information in a variety of formats while demonstrating the oral, nonverbal, and written communication skills essential for working in today's international service-/information-/technological-based economy.**

This is evident, for example, when students:

- ▲ compose/produce a multipage, complex business memorandum or business sales letter
- ▲ prepare and deliver a persuasive sales presentation and effectively handle customer questions and objections in a simulated situation
- ▲ use specialized communication tools, such as voice and electronic mail systems, at typical business productivity standards
- ▲ participate in a panel discussion on a business topic which will be critiqued for communication effectiveness
- ▲ analyze the effectiveness of individuals communicating in an international business environment, given a specific situation.

4. Business Systems

Students:

- **demonstrate an understanding of the interrelatedness of business, social, and economic systems/subsystems.**

This is evident, for example, when students:

- ▲ analyze the effects that changes in internal and external influences (e.g., human resources, suppliers, government, technology, customs/traditions) have on various business systems
- ▲ identify, describe, and diagram systems and subsystems associated with typical businesses in the occupational cluster of study
- ▲ plan, implement, analyze, and modify systems and subsystems for a student-operated school store or business in which students are employed
- ▲ describe the international monetary system, including the International Monetary Fund, World Bank, and Eurocurrencies.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3b

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Specialized

5. Resource Management

Students:

- **identify, organize, plan, and allocate resources (e.g., financial, materials/facilities, human, time) in demonstrating the ability to manage their lives as learners, contributing family members, globally competitive workers, and self-sufficient individuals.**

This is evident, for example, when students:

- ▲ participate on a team to develop a mission statement, goals, objectives, and an annual work plan for a DECA or Future Business Leaders of America (FBLA) chapter
- ▲ demonstrate through simulation how an individual business raises capital by selling stock
- ▲ visit a bank and meet with a business loan officer to discuss the process involved in applying for a small business start-up loan
- ▲ develop a simple budget proposal to refurnish and/or remodel an office or small retail business
- ▲ diagram and explain an organizational chart of a small corporation
- ▲ identify organizations, government agencies, and other resources that a small or medium-sized business might use to investigate international trade opportunities.

6. Interpersonal Dynamics

Students:

- **exhibit interpersonal skills essential for success in the multinational business world, demonstrate basic leadership abilities/skills, and function effectively as members of a work group or team.**

This is evident, for example, when students:

- ▲ interact congenially, harmoniously, and effectively with comembers of a school club, community youth leadership organization, or business in which they are employed
- ▲ plan and implement a meeting between class representatives and the principal to discuss concerns/needs of the class
- ▲ survey the personnel policies of a business and develop a report on employer requirements/guidelines
- ▲ interview students for positions in a simulated business
- ▲ teach a ninth-grade class how to read the stock page
- ▲ serve as a negotiator on behalf of the vice principal and students in the handling of student code-of-conduct violations
- ▲ identify potential human relations problems/conflict areas in a company with a multinational workforce.

STANDARD 3b

Standard 3b—Career Majors

Experiential
Business/Information Systems

1. Basic Business Understanding

Students:

- **demonstrate an understanding of business, marketing, and multinational economic concepts, perform business-related mathematical computations, and analyze/interpret business-related numerical information.**

This is evident, for example, when students:

- ▲ participate effectively with coworkers, supervisors, suppliers, customers, and others in an employment experience related to their occupational cluster of study
- ▲ solve problems/make decisions for a business in which they are employed or for a student-managed school store
- ▲ use application software to prepare purchase orders, record inventory received, and maintain accounts receivable/payable records for a business through a Cooperative Occupational Education or a General Education Work Experience Program
- ▲ plan an itinerary, make reservations, and prepare a travel expense report for supervisors in a volunteer community service experience
- ▲ conduct research, prepare a chart, and make a presentation about the sales volume and market share for a local business
- ▲ evaluate and compare the overall effectiveness of global marketing plans for several companies in the community conducting international business
- ▲ develop a business plan for an international business venture based on an analysis of current economic statistics.

2. Business-Related Technology

Students:

- **select, apply, and troubleshoot hardware and software used in the processing of business transactions.**

This is evident, for example, when students:

- ▲ use business-related hardware and software to process transactions in an employment setting related to the student's occupational program (e.g., order-processing technology to assist customers in an auto parts store or CD-ROM software to identify retail outlets for customers)
- ▲ demonstrate the ability to set up, maintain, and troubleshoot a fax machine or computer system in a simulated or real employment environment
- ▲ use vendor "help lines" to solve business technology hardware and software problems in an employment or volunteer experience
- ▲ conduct a research project to determine the cost-effectiveness of recently upgraded production technology installed at their place of employment, and make a presentation about the project, using state-of-the-art software and media tools
- ▲ conduct a study and write a proposal to justify the expense of adding new business-related equipment to the school office (e.g., fax machine, electronic mail or voice mail system).

3. Information Management/Communication

Students:

- **prepare, maintain, interpret/analyze, and transmit/distribute information in a variety of formats while demonstrating the oral, nonverbal, and written communication skills essential for working in today's international service-/information-/technological-based economy.**

This is evident, for example, when students:

- ▲ use local, regional, national, and/or international telecommunications networks to obtain and/or communicate business information for a capstone project
- ▲ facilitate a panel discussion as part of an employment experience
- ▲ prepare and deliver a 10-minute oral presentation using a variety of visual aids on an employment or volunteer experience
- ▲ develop/produce complex, business-quality documents (e.g., business letters, inventory reports, financial/accounting reports, proposals, advertising/sales brochures) for a capstone business simulation, a work experience situation, or a community service project
- ▲ communicate effectively with coworkers and supervisors during an employment or volunteer experience at a company or organization involved in international business
- ▲ participate in the public speaking competitive event at a local, State, regional, and/or national leadership conference of DECA or FBLA.

4. Business Systems

Students:

- **demonstrate an understanding of the interrelatedness of business, social, and economic systems/subsystems.**

This is evident, for example, when students:

- ▲ contribute to the effective operation of various systems and subsystems (e.g., office support system, data processing system, computer programming systems) during an employment experience in a Cooperative Occupational Education or a General Education Work Experience Program
- ▲ develop a system/subsystem modification to enhance productivity during an internship experience in a community service organization
- ▲ start a student-owned and -managed small business through the Junior Achievement program or other school-sponsored program.

STANDARD 3b

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Experiential

5. Resource Management

Students:

- **identify, organize, plan, and allocate resources (e.g., financial, materials/facilities, human, time) in demonstrating the ability to manage their lives as learners, contributing family members, globally competitive workers, and self-sufficient individuals.**

This is evident, for example, when students:

- ▲ use application software to prepare federal and State income tax returns
- ▲ develop an operating budget for the year for a school-sponsored extracurricular organization or the DECA or FBLA chapters
- ▲ use calendar-type software to design a student work schedule for a student-operated school store or a business in which students are employed through a Cooperative Occupational Education or a General Education Work Experience Program
- ▲ assist in planning a conference for a business or community service organization.

6. Interpersonal Dynamics

Students:

- **exhibit interpersonal skills essential for success in the multinational business world, demonstrate basic leadership abilities/skills, and function effectively as members of a work group or team.**

This is evident, for example, when students:

- ▲ participate in a job performance and attitude evaluation as part of an employment experience
- ▲ participate in the job interview competitive event at a local, State, regional, and/or national DECA or FBLA leadership conference
- ▲ facilitate a team or work group meeting during an employment or volunteer experience
- ▲ conduct a training session for new employees during an employment experience or in a student-operated school store
- ▲ conduct a study comparing different approaches to managing human resources in several community businesses involved in international trade.

STANDARD 3b

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

Standard 3b—Career Majors

Core
Health Services

1. Academic Foundations

Students:
- **apply knowledge/skills acquired in academic subjects to the health care environment.**

This is evident, for example, when students:
- ▲ identify and describe science concepts (anatomy and physiology, biology, chemistry, physics, growth/development) as they apply to biotechnology equipment and health care
- ▲ write an essay describing the importance of understanding science concepts in health careers
- ▲ perform mathematical conversions of temperature readings.

2. Health Care Systems

Students:
- **understand the current health care system and its impact on health careers.**

This is evident, for example, when students:
- ▲ list services provided by the health care system
- ▲ tour a local general hospital and prepare a report of various services provided
- ▲ identify social and economic factors that affect health care delivery
- ▲ explain the relationship of economics and health care in our society.

3. Health Maintenance

Students:
- **develop knowledge of the concept of optimal health and identify factors that affect health maintenance.**

This is evident, for example, when students:
- ▲ describe the physical, mental, and social aspects of health and their interrelationship
- ▲ demonstrate good personal health habits to promote physical, mental, and social health
- ▲ make a list of their current physical activities and identify how these activities contribute to optimal health
- ▲ identify specific community resources involved in the promotion of health
- ▲ discuss feelings resulting from school/group social involvement
- ▲ develop an individual plan for ideal physical, mental, and social health.

4. Legal and Ethical Responsibilities

Students:
- **know the importance of performing their role in the health care system in accordance with laws, regulations, policies, ethics, and the rights of clients.**

This is evident, for example, when students:
- ▲ demonstrate equitable treatment of all people
- ▲ differentiate between legal and ethical rules
- ▲ identify and describe client rights and confidentiality
- ▲ obtain and discuss the "Patient's Bill of Rights" from a local health care agency
- ▲ contrast licensure and certification in a selected career area and discuss limitations of each
- ▲ develop a code of ethics for the class.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Core

5. Safety

Students:

- **identify safety hazards in a health care setting and prevent illness or injury through safe work practices.**

This is evident, for example, when students:

- ▲ describe fire hazards and other safety hazards and their impact on the health care environment
- ▲ define and discuss universal precautions and regulatory guidelines such as those developed by the Occupational Safety and Health Administration (OSHA)
- ▲ identify principles of good body mechanics
- ▲ discuss procedures/protocols used in classroom emergencies
- ▲ list general principles of first aid and their adaptation to the health care environment
- ▲ invite a safety officer from a health care agency to speak to the class.

6. Communications

Students:

- **communicate information in a variety of formats and media.**

This is evident, for example, when students:

- ▲ use basic medical terminology appropriately
- ▲ discuss the importance of effective communication in the health care field
- ▲ access electronically produced information commonly used in a health care setting
- ▲ demonstrate differences between verbal and nonverbal communication and the impact on consumers of health care
- ▲ demonstrate various communication methods used to give and obtain information
- ▲ role-play effective communication involving health care workers.

7. Interpersonal Dynamics

Students:

- **interact effectively and sensitively with all other members of the health care team in order to provide high-quality client care.**

This is evident, for example, when students:

- ▲ work cooperatively in a group and respect the diversity of classmates
- ▲ role-play team membership skills (e.g., cooperation, leadership, and listening) and apply them to the health care hierarchy
- ▲ discuss the impact of client diversity on health care.

8. Technical Skills

Students:

- **identify procedures within their scope of practice and job description and perform them accurately and in a timely fashion.**

This is evident, for example, when students:

- ▲ identify technical skills for a specific job within the health services area
- ▲ demonstrate basic patient/health care skills such as measuring a client's blood pressure.

STANDARD 3b

Standard 3b—Career Majors

Specialized
Health Services

1. Academic Foundations

Students:
- **apply knowledge/skills acquired in academic subjects to the health care environment.**

This is evident, for example, when students:
- ▲ apply life sciences and mathematical concepts in a work-site situation
- ▲ conduct laboratory tests on body fluid samples
- ▲ write an informative, persuasive essay on a health care topic
- ▲ research and discuss different cultural responses to health and illness.

2. Health Care Systems

Students:
- **understand the current health care system and its impact on health careers.**

This is evident, for example, when students:
- ▲ describe the American free enterprise system and its effect on the health care system
- ▲ describe how social, political, or economic factors affect delivery of health care services in a health care agency.

3. Health Maintenance

Students:
- **develop knowledge of the concept of optimal health and identify factors that affect health maintenance.**

This is evident, for example, when students:
- ▲ describe the effects of alcohol, tobacco, and drugs on health (physical, mental, and social)
- ▲ identify and describe risk behaviors that can jeopardize optimal health
- ▲ research the effects of stress on health
- ▲ explain preventative health practices (e.g., stress management, good nutrition)
- ▲ analyze the effects of risk behaviors for the individual, family, community, and world
- ▲ develop a plan that accommodates nutritional needs, stress management, and physical activity.

4. Legal and Ethical Responsibilities

Students:
- **know the importance of performing their role in the health care system in accordance with laws, regulations, policies, ethics, and the rights of clients.**

This is evident, for example, when students:
- ▲ describe legal/ethical rules and responsibilities of workers within the health delivery system and determine what constitutes liability
- ▲ describe the consequences of legal and ethical wrongdoing in the health care field
- ▲ extract and analyze legal documentation from a case study.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3b

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Specialized

5. Safety

Students:

- **identify safety hazards in a health care setting and prevent illness or injury through safe work practices.**

This is evident, for example, when students:

- ▲ implement methods of preventing accidents in classroom and work-site situations
- ▲ use principles of infection control according to OSHA requirements in simulated health care situations
- ▲ complete a first aid course
- ▲ cite examples of safe practices in a health care work site.

6. Communications

Students:

- **communicate information in a variety of formats and media.**

This is evident, for example, when students:

- ▲ ask appropriate questions to assess the level of understanding of others
- ▲ use appropriate medical terminology in work-related situations
- ▲ demonstrate ability to ask for clarification as necessary and to report/record accurately information in a work-related situation.

7. Interpersonal Dynamics

Students:

- **interact effectively and sensitively with all other members of the health care team in order to provide high-quality client care.**

This is evident, for example, when students:

- ▲ demonstrate the ability to assume the role of leader, recorder, and team member in a health care work setting.

8. Technical Skills

Students:

- **identify procedures within their scope of practice and job description and perform them accurately in a timely fashion.**

This is evident, for example, when students:

- ▲ provide direct care for clients in a health care setting
- ▲ use equipment and instruments according to manufacturer guidelines and facility policy and procedure
- ▲ organize assignments and their own work.

STANDARD 3b

Standard 3b—Career Majors

Experiential
Health Services

1. Academic Foundations

Students:
- **apply knowledge/skills acquired in academic subjects to the health care environment.**

This is evident, for example, when students:
- ▲ select a patient and relate his/her specific illness to science concepts that are involved
- ▲ compute medication dosages.

2. Health Care Systems

Students:
- **understand the current health care system and its impact on health careers.**

This is evident, for example, when students:
- ▲ prepare insurance forms for services rendered in a health facility
- ▲ participate in a debate involving current and proposed national health care policies.

3. Health Maintenance

Students:
- **develop knowledge of the concept of optimal health and identify factors that affect health maintenance.**

This is evident, for example, when students:
- ▲ contact community health agencies to determine the services provided and present this information to the class
- ▲ measure and report a client's vital signs or other indicators of health status
- ▲ access appropriate community resources to help resolve health problems for clients in a health services environment
- ▲ conduct classes for diabetic clients
- ▲ give a presentation to an elementary school class about preventative health practices such as nutrition, stress management, or dental care.

4. Legal and Ethical Responsibilities

Students:
- **know the importance of performing their role in the health care system in accordance with laws, regulations, policies, ethics, and the rights of clients.**

This is evident, for example, when students:
- ▲ demonstrate legal and ethical behavior in caring for clients with communicable diseases
- ▲ comply with legal requirements for documentation of care.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3b

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Experiential

5. Safety

Students:

- **identify safety hazards in a health care setting and prevent illness or injury through safe work practices.**

This is evident, for example, when students:

- ▲ participate in a first aid competition in a local or State competitive events conference of Health Occupations Students of America or Vocational Industrial Clubs of America (HOSA/VICA)
- ▲ demonstrate specific first aid techniques
- ▲ prevent accidents by using principles of body mechanics when caring for hospitalized clients
- ▲ wear protective equipment while working with dental clients
- ▲ handle specimens and chemicals appropriately.

6. Communications

Students:

- **communicate information in a variety of formats and media.**

This is evident, for example, when students:

- ▲ record results of serological examinations
- ▲ adapt communication to the individual needs of a client within the health care system
- ▲ respond to concerns and fears of a nursing home client.

7. Interpersonal Dynamics

Students:

- **interact effectively and sensitively with all other members of the health care team in order to provide high-quality client care.**

This is evident, for example, when students:

- ▲ interact effectively with clients, coworkers, and supervisors in a health-care-related situation
- ▲ deal with differences in opinion in work-related situations by showing respect for the point of view of others.

8. Technical Skills

Students:

- **identify procedures within their scope of practice and job description and perform them accurately in a timely fashion.**

This is evident, for example, when students:

- ▲ recognize abnormal results and take action consistent with level of training and scope of practice
- ▲ monitor and evaluate work to ensure continuous improvement.

STANDARD 3b

Standard 3b—Career Majors

Core
Engineering/Technologies

1. Foundation Development

Students:

- **develop practical understanding of engineering technology through reading, writing, sample problem solving, and employment experiences.**

This is evident, for example, when students:

- ▲ research current labor and working condition laws as per OSHA rules and regulations
- ▲ use materials, tools, instruments, equipment, and procedures safely in a laboratory
- ▲ research and record data through use of computerized information services such as the Internet and World Wide Web
- ▲ use general carpentry-related vocabulary to order building materials for a simple construction job
- ▲ use simple engineering-related mathematical/scientific concepts to construct a simple series/parallel electrical circuit
- ▲ provide examples of simple problems that managers/employees need to solve, and explain the steps in the problem-solving process
- ▲ describe how ethics are applied in the world of work.

2. Technology

Students:

- **demonstrate how all types of engineering/technical organizations, equipment (hardware/software), and well-trained human resources assist and expedite the production/distribution of goods and services.**

This is evident, for example, when students:

- ▲ identify the components of a system (input, process, output, monitor, comparison) and draw a labeled model in block diagram form indicating how the system components are linked
- ▲ identify and use software programs for specific applications such as word processing, database management, graphics, and telecommunications
- ▲ demonstrate how a person can use sensory experience to monitor the output of some technological systems (e.g., toaster, traffic control, heating, smoothness of a finish, stereo system, food quality)
- ▲ demonstrate how subsystems can be used as comparison devices (e.g., thermostat, photocell switch, sonar focusing in cameras)
- ▲ explain the relationship of rapidly changing technology to global competition, job creation and obsolescence, and societal impact
- ▲ describe an educational program appropriate to the requirements for one job (e.g., technician, engineer, or technology education teacher)
- ▲ identify transferable skills that might be necessary for continued employment
- ▲ use the computer and a variety of input devices (e.g., handwriting, keyboard, mouse, stylus, scanner, voice) as tools to process information and to assist in making decisions.

3. Engineering/Industrial Processes

Students:

- **demonstrate knowledge of planning, product development and utilization, and evaluation that meets the needs of industry.**

This is evident, for example, when students:

- ▲ relate the fundamental principles of flight to aircraft performance
- ▲ apply simple engineering-related mathematical concepts and interpret numerical data from computerized automotive engine diagnostic equipment
- ▲ demonstrate a basic understanding of troubleshooting and repair of electrical failures in refrigerators and freezers
- ▲ plan sequence of part layout based upon blueprint information.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Specialized
Engineering/Technologies

1. Foundation Development

Students:
- **develop practical understanding of engineering technology through reading, writing, sample problem solving, and employment experiences.**

This is evident, for example, when students:
- ▲ engage in biomedical laboratory activities, such as use of living material, construction of devices, and use of working models, charts, graphs, technical drawings, sketches and illustrations, mathematical equations, and computer simulations
- ▲ find and apply mathematical/scientific formulas necessary to calculate electrical resistance, aerodynamic lift, and torque
- ▲ retrieve automotive engine data specifications, using industry computerized data-retrieval systems
- ▲ participate in various competitive events at a local, State, or national VICA (Vocational Industrial Clubs of America) conference.

2. Technology

Students:
- **demonstrate how all types of engineering/technical organizations, equipment (hardware/software), and well-trained human resources assist and expedite the production/distribution of goods and services.**

This is evident, for example, when students:
- ▲ use materials, tools, instruments, equipment, and procedures safely in a laboratory to model technological systems in a range of engineering, technical, and/or trade occupations
- ▲ identify resources needed for specific energy conversion processes
- ▲ assemble a computer-controlled technological system
- ▲ program or input an existing program, and operate a computer-based system to follow a sequence of steps or instructions
- ▲ create block diagrams, sketches, and drawings of original technological systems that include the system monitor and control components
- ▲ identify and explain the components of various technologies used in the engineering/technical environment (e.g., torque meters, meteorological maps, optical disks, frequency counters).

3. Engineering/Industrial Processes

Students:
- **demonstrate knowledge of planning, product development and utilization, and evaluation that meets the needs of industry.**

This is evident, for example, when students:
- ▲ apply the decision-making/problem-solving process to develop solutions for a labor relations dispute
- ▲ diagnose computer hardware failure, using appropriate software and electronic testing equipment
- ▲ read and interpret technical manuals to determine the location of an automotive electrical fault
- ▲ lay out a building foundation, using a transit
- ▲ install a basic 220-volt line in a newly framed section of a house
- ▲ diagnose an automotive engine problem.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

Standard 3b—Career Majors

Experiential
Engineering/Technologies

1. Foundation Development

Students:

- **develop practical understanding of engineering technology through reading, writing, sample problem solving, and employment experiences.**

This is evident, for example, when students:

- ▲ converse intelligently and effectively with industry representatives and employers/employees, using technical language associated with the occupational cluster of study
- ▲ apply complex computational procedures and concepts used in setting up an assembly line
- ▲ explain the causes and physiological effects of working in a fast-paced manufacturing assembly line.

2. Technology

Students:

- **demonstrate how all types of engineering/technical organizations, equipment (hardware/software), and well-trained human resources assist and expedite the production/distribution of goods and services.**

This is evident, for example, when students:

- ▲ demonstrate ability to set up, maintain, and repair various machines, hardware, and devices, using a variety of resources (e.g., manuals, vendor hotlines, electronic equipment) and adhering to all OSHA safety rules and regulations
- ▲ demonstrate ability to accomplish high-level engineering/technical tasks through a variety of experiences (e.g., computer simulations, capstone projects, community-based projects, work-based experiences)
- ▲ use computers to design simple systems from engineering sketches.

3. Engineering/Industrial Processes

Students:

- **demonstrate knowledge of planning, product development and utilization, and evaluation that meets the needs of industry.**

This is evident, for example, when students:

- ▲ apply complex computational procedures and concepts necessary for managing a construction work site
- ▲ construct manufacturing design diagrams, using CADD equipment in an employment setting
- ▲ use mathematical concepts to calculate fuel consumption for a planned cross-country flight
- ▲ write a report on safety procedures regarding the disposal of hazardous waste found on the work site
- ▲ apply work-flow scheduling and standardized performance-measuring systems to specific job categories (e.g., construction)
- ▲ set up and mill flat surfaces at compound angles with respect to each other.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3b

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

STANDARD 3b

Standard 3b—Career Majors

Core
Human and Public Services

1. Ethical/Legal Responsibilities

Students:
- **demonstrate professional, ethical, and legal responsibilities toward customers.**

This is evident, for example, when students:
- ▲ define ethics and confidentiality in the classroom, home, community, and workplace
- ▲ develop and implement a code of ethics for the classroom and potential work environment
- ▲ treat all people equally and respect the diversity and special needs of customers.

2. Communication

Students:
- **demonstrate effective communication skills needed to meet the expectations of human and public services consumers.**

This is evident, for example, when students:
- ▲ demonstrate listening skills
- ▲ demonstrate skill in oral and written communication
- ▲ use alternative and current communication techniques, such as sign language, pictures, and technology
- ▲ demonstrate differences between verbal and nonverbal communication.

3. Sanitation

Students:
- **demonstrate a knowledge of the principles of sanitation used to prevent the transmission of disease-producing microorganisms from one person/object to another.**

This is evident, for example, when students:
- ▲ model behaviors that demonstrate understanding of basic principles of sanitation
- ▲ recognize the importance of developing good habits of personal hygiene.

4. Human Growth and Development

Students:
- **understand the process of human growth and development and its influence on client needs.**

This is evident, for example, when students:
- ▲ identify the stages of the life cycle and/or skill-level abilities of customers of human and public services
- ▲ identify and develop processes as needed to serve customers based upon their cognitive, social, emotional, and physical development.

5. Interpersonal Dynamics

Students:
- **demonstrate how to interact effectively and sensitively with others.**

This is evident, for example, when students:
- ▲ work cooperatively in a group
- ▲ understand the importance of accepting individual differences and special needs.

6. Safety

Students:
- **provide safe environments for others.**

This is evident, for example, when students:
- ▲ identify safety hazards in the home, workplace, and other environments
- ▲ anticipate fire hazards through an awareness of dangerous conditions and take preventive measures.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3b

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Core

7. Thinking/Problem Solving

Students:
- **solve problems, set goals, and make decisions in order to provide services to best meet the needs of others.**

This is evident, for example, when students:
- ▲ identify steps in critical thinking and goal-setting processes
- ▲ identify steps in problem solving
- ▲ demonstrate the application of personal problem-solving skills
- ▲ identify and use a variety of methods, tools, and resources to meet the needs of customers.

8. Personal Resource Management

Students:
- **apply personal and resource management skills.**

This is evident, for example, when students:
- ▲ identify multiple demands of family members' roles and suggest strategies to balance work and family roles
- ▲ describe qualities critical to workers in human and public services careers
- ▲ recognize the importance of personal time management
- ▲ describe the need for personal money-management skills
- ▲ identify resources available to the individual to facilitate self-employment.

9. Wellness

Students:
- **exhibit and promote a positive image of wellness.**

This is evident, for example, when students:
- ▲ know the food groups as described in the food pyramid and use this information to plan nutritious meals
- ▲ practice good personal habits to promote physical, mental, and social health
- ▲ describe the physical, mental, and social aspects of health and their interrelationship
- ▲ describe techniques for coping with and managing stress in the home, school, work, and community environment
- ▲ develop proactive and healthy responses to changes in one's life and an attitude that will foster positive mental growth.

STANDARD 3b

Standard 3b—Career Majors

Specialized
Human and Public Services

1. Ethical/Legal Responsibilities

Students:
- **demonstrate professional, ethical, and legal responsibilities toward customers.**

This is evident, for example, when students:
- ▲ describe ethical wrongdoing and breach of confidentiality as related to workplace behavior in the food service industry
- ▲ advocate equal treatment of all people and strive to reach all people at their own level regardless of their limitations
- ▲ assure confidentiality of data while using current technology in the classroom and/or workplace
- ▲ analyze and distinguish between various classifications and designations of offenses under local, county, State, and federal laws (e.g., violations, misdemeanors, felonies)
- ▲ participate in a work-based learning program for students interested in the legal profession.

2. Communication

Students:
- **demonstrate effective communication skills needed to meet the expectations of human and public services consumers.**

This is evident, for example, when students:
- ▲ identify the purposes of communication in elder-care services and factors that influence the communication process
- ▲ prepare and deliver presentations, using creativity and initiative to seek the most effective resources
- ▲ identify the impact of electronic communication on FBI agents
- ▲ use interactive electronic communication (Internet/World Wide Web) effectively among coworkers to reschedule a meeting
- ▲ participate in the Illustrated Talk STAR event (Students Taking Action for Recognition) at a local, State, or national FHA/HERO leadership conference
- ▲ seek the most effective tools to communicate with social services customers so that all might benefit from services
- ▲ write technical communications in a clear, concise, and legible manner for use in public and private security occupations.

3. Sanitation

Students:
- **demonstrate a knowledge of the principles of sanitation used to prevent the transmission of disease-producing microorganisms from one person/object to another.**

This is evident, for example, when students:
- ▲ practice sanitation methods needed to prevent the spread of disease in the environment.

4. Human Growth and Development

Students:
- **understand the process of human growth and development and its influence on client needs.**

This is evident, for example, when students:
- ▲ describe stages of the life cycle (prenatal, infancy, childhood, adolescence, adult, middle age, elderly)
- ▲ demonstrate basic techniques for appropriate care of a toddler

5. Interpersonal Dynamics

Students:
- **demonstrate how to interact effectively and sensitively with others.**

This is evident, for example, when students:
- ▲ demonstrate effective interpersonal speaking and listening skills
- ▲ demonstrate effective interpersonal communication, using a variety of tools
- ▲ approach difficulties in personal and/or work-related situations with respect for others' points of view
- ▲ examine the Americans with Disabilities Act and discuss implications for private security law enforcement.

6. Safety

Students:
- **provide safe environments for others.**

This is evident, for example, when students:
- ▲ correct safety hazards in personal and/or work environments
- ▲ explain potential workplace safety hazards to others in relation to OSHA guidelines.

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Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Specialized

7. Thinking/Problem Solving

Students:
- **solve problems, set goals, and make decisions in order to provide services to best meet the needs of others.**

This is evident, for example, when students:
- ▲ make informed decisions and set goals as they relate to self, family, and workplace
- ▲ determine the effects on the customer and/or environment of personal habits and make appropriate adjustments in habits.

8. Personal Resource Management

Students:
- **apply personal and resource management skills.**

This is evident, for example, when students:
- ▲ demonstrate ways to balance work and family roles (e.g., strategies to reduce work and family conflicts)
- ▲ conduct a self-evaluation to identify personal qualities compatible with a career in the appearance-enhancement industry
- ▲ explain factors that lead to successful money management in the appearance-enhancement industry
- ▲ describe how a knowledge of available resources and their use enables an individual to become independent/self-sufficient.

9. Wellness

Students:
- **exhibit and promote a positive image of wellness.**

This is evident, for example, when students:
- ▲ plan diets for human and public service customers that take into account nutritional needs as described in the food pyramid
- ▲ adapt menus for special dietary needs and make them acceptable in a variety of cultural situations.

STANDARD 3b

Standard 3b—Career Majors

Experiential
Human and Public Services

1. Ethical/Legal Responsibilities

Students:
- **demonstrate professional, ethical, and legal responsibilities toward customers.**

This is evident, for example, when students:
- ▲ exhibit positive behaviors such as reliability, integrity, and responsibility, and abide by agency expectations for personal conduct
- ▲ provide equitable treatment for all consumers of child care services
- ▲ obtain a permit to operate a food concession for a student leadership activity
- ▲ use student leadership activities to demonstrate active citizenship and affect public policy.

2. Communication

Students:
- **demonstrate effective communication skills needed to meet the expectations of human and public services consumers.**

This is evident, for example, when students:
- ▲ exhibit an awareness of multicultural needs of customers of elder-care services
- ▲ demonstrate creativity and initiative to use alternative resources to communicate effectively with social services customers
- ▲ know and use the correct terminology and procedures necessary for effective inter- and intra-workplace communication (e.g., internal and external food service customers)
- ▲ use current technology to communicate effectively with coworkers, supervisors, and consumers
- ▲ use interactive electronic communication to contact a public official regarding a policy issue.
- ▲ practice use of standard communication equipment as employed in the law enforcement and security fields (e.g., radio, fax, e-mail).

3. Sanitation

Students:
- **demonstrate a knowledge of the principles of sanitation used to prevent the transmission of disease-producing microorganisms from one person/object to another.**

This is evident, for example, when students:
- ▲ employ sanitation principles as they relate to the food industry
- ▲ practice all safety and sanitation procedures required by State board standards for hair cutting.

4. Human Growth and Development

Students:
- **understand the process of human growth and development and its influence on client needs.**

This is evident, for example, when students:
- ▲ develop a plan to open a child care center with special consideration of program goals, child development, sequential learning concepts, and program evaluation
- ▲ apply the concept of nurturing to human and public services occupations by volunteering to work in a child care facility
- ▲ participate in the Focus on Children (STAR) event at a local, State, or national FHA/HERO leadership conference.

5. Interpersonal Dynamics

Students:
- **demonstrate how to interact effectively and sensitively with others.**

This is evident, for example, when students:
- ▲ observe and discuss interdependent relationships and cooperative behaviors between employer/employee, employee/employee, and employer/consumer
- ▲ demonstrate and provide services to customers, using a variety of approaches that indicate an understanding of human nature
- ▲ contribute to a positive environment which enables all groups to be productive and fulfilled
- ▲ solve group problems effectively in work-related situations
- ▲ participate in the Food Service-STAR event at a local, State, or national FHA/HERO leadership conference
- ▲ demonstrate diligence, patience, empathy, and tenacity when serving all private security/law enforcement customers.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3b

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Experiential

6. Safety

Students:
- **provide safe environments for others.**

This is evident, for example, when students:
- ▲ develop and follow procedures to provide a safe environment in a child care facility
- ▲ develop ideas for improving existing evacuation procedures for a local child care facility.

7. Thinking/Problem Solving

Students:
- **solve problems, set goals, and make decisions in order to provide services to best meet the needs of others.**

This is evident, for example, when students:
- ▲ apply critical thinking and goal-setting processes in a variety of human and public services occupational situations
- ▲ apply a problem-solving process and take reasoned action to meet consumer and client needs.

8. Personal Resource Management

Students:
- **apply personal and resource management skills.**

This is evident, for example, when students:
- ▲ employ effective coping strategies for self and others to handle developmental or situational changes
- ▲ describe cost-effective strategies in a human and public services career
- ▲ implement strategies to avoid waste in the appearance-enhancement industry (e.g., duplication of services, damage to equipment)
- ▲ use effective coping strategies when handling stressful situations.

9. Wellness

Students:
- **exhibit and promote a positive image of wellness.**

This is evident, for example, when students:
- ▲ apply nutritional concepts to meet the needs of human and public service customers
- ▲ demonstrate the ability to access appropriate community resources to help resolve health problems for clients in a human services environment
- ▲ use personal resources and skills to cope with change and other stresses in the work, school, home, and community environment.

STANDARD 3b

Standard 3b—Career Majors

Core
Natural and Agricultural Sciences

1. Basic Agriculture Foundation Development

Students:
- **demonstrate a solid base of knowledge and skills in natural and agricultural sciences.**

This is evident, for example, when students:
- ▲ explain knowledge and skills necessary for a broad range of careers in natural and agricultural sciences
- ▲ explain the meaning of agricultural business, science, and technology terms
- ▲ use simple agricultural-related mathematical concepts and interpret data in agricultural-related applications (e.g., profit/loss, inventory, income/expense)
- ▲ use simple agricultural-related science concepts and interpret data (e.g., wise use of natural resources, basic plant and animal nutrition, and principles affecting growth and reproduction)
- ▲ explain the concept of social, ethical, and legal responsibility, especially as it relates to agriculture and ecology
- ▲ provide examples of simple problems that managers/employees need to solve and explain the steps in the problem-solving process.

2. Agriculture-Related Technology

Students:
- **demonstrate the ability to use technology to assist in production and distribution of food goods and services of today's agricultural industries.**

This is evident, for example, when students:
- ▲ identify the components of technologies used in the agricultural business environment (e.g., mechanical, chemical, biological, informational)
- ▲ select appropriate agricultural software for specific applications
- ▲ develop the application of specific agricultural technology to a selected agricultural career (e.g., biotechnology).

3. Information Management and Communication

Students:
- **prepare, maintain, interpret, and disseminate quantitative and qualitative pieces of information relating to the natural and agricultural sciences.**

This is evident, for example, when students:
- ▲ describe the communication process
- ▲ demonstrate listening skills
- ▲ demonstrate skill in oral and written communication (e.g., prepare a speech and enter an FFA local public speaking contest)
- ▲ signify differences between verbal and nonverbal communication
- ▲ use a computer to compose, input, format, and print simple business letters, memos, reports, and agricultural marketing information
- ▲ prepare and deliver a three-minute oral presentation (using natural or computer-generated voice), using at least one visual aid for a specific agricultural purpose (e.g., agricultural-related research report, sales presentation)
- ▲ identify positive/negative facial expressions and other body language indicators
- ▲ use various communications tools including telephone, fax machine, voice mail, electronic mail, and the Internet.

4. Agriculture Business Systems

Students:
- **demonstrate an understanding of the interrelationship between agricultural businesses and organizations designed to produce products, services, and information.**

This is evident, for example, when students:
- ▲ identify and describe social, organizational, and technological systems that have resulted from the increased efficiency of the agricultural sector (e.g., agricultural demographics, production, environmental issues)
- ▲ identify the major systems that typically are found in the agricultural business sector (e.g., aquatic and animal production, lawn and greens maintenance, crop production, marketing and governmental regulations)
- ▲ diagram the major components of a typical agricultural system (e.g., pesticide management, supplemental irrigation, animal and aquatic nutrition, animal and aquatic health)
- ▲ understand that the purpose of agricultural business organizations is to satisfy the demands of consumers within the constraints of governmental regulations and moral obligations as well as to operate at a profit
- ▲ categorize agricultural businesses as either production, distribution, or service enterprises and identify distinguishing systems characteristics of each
- ▲ identify and explain different systems of agricultural business ownership (e.g., proprietorship, partnership, corporation, cooperative, franchise, limited partnership, joint venture).

STANDARD 3b

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Core

5. Resource Management

Students:

- **demonstrate the ability to manage personal time, business, and financial resources.**

This is evident, for example, when students:

- ▲ identify types of resources available
- ▲ identify the need for the basic skills of planning, organizing, and setting goals and priorities in a business
- ▲ explain the importance of time management
- ▲ identify the uses agricultural businesses make of human, capital, natural, and information resources and explain how these resources interrelate to make the organization's products and/or services more valuable
- ▲ identify the basic components of budget preparation in an agricultural business and develop an awareness of banking services, the use of credit, and various components of money-management skills.

6. Interpersonal Dynamics

Students:

- **demonstrate the interpersonal skills and abilities needed to function within a sophisticated and sometimes complicated agricultural environment.**

This is evident, for example, when students:

- ▲ recognize the essential personal requirements for working in an agricultural business (e.g., appearance, integrity, punctuality, dedication, commitment)
- ▲ report on the benefits of cultural diversity in the workforce
- ▲ interact with other students in a meeting to discuss an agricultural-related topic
- ▲ recognize the value of the team approach in solving problems.

7. Safety

Students:

- **demonstrate awareness of the importance of safety and accident prevention in all agricultural situations.**

This is evident, for example, when students:

- ▲ recognize that agricultural jobs are among the highest in incidence of accidents
- ▲ identify safety hazards present in agricultural situations and describe the safety precautions required to prevent accidents
- ▲ identify potential safety hazards
- ▲ describe mechanical hazards
- ▲ describe chemical hazards
- ▲ recognize safety devices (e.g., roll bars on tractors) placed on equipment or located in an area for emergency use.

STANDARD 3b

Standard 3b—Career Majors

Specialized
Natural and Agricultural Sciences

1. Basic Agriculture Foundation Development

Students:
- **demonstrate a solid base of knowledge and skills in natural and agricultural sciences.**

This is evident, for example, when students:
- ▲ identify and demonstrate a knowledge of animals, plants, tools, and equipment in the student's agricultural program
- ▲ use computer software to apply mathematical formulas necessary for normal agricultural business operations (e.g., calculating proportions, discounts, income/expenses, inventory, and net worth)
- ▲ apply a knowledge of science to understand the principles of keeping plants and animals healthy, growing, and reproducing; applying basic biological principles and techniques to increase production efficiency
- ▲ explain the need for a balanced ecological environment
- ▲ apply the decision-making/problem-solving process to develop solutions for simulated agricultural business problems.

2. Agriculture-Related Technology

Students:
- **demonstrate the ability to use technology to assist in production and distribution of food goods and services of today's agricultural industries.**

This is evident, for example, when students:
- ▲ demonstrate knowledge of agricultural technologies to monitor the progress of a plant reproduction activity
- ▲ use computer software to calculate animal rations
- ▲ complete a comprehensive agricultural business research project, using appropriate technologies to collect, assess, analyze, synthesize, and present research findings
- ▲ provide rationale for use of technology while considering economic factors in a job or project (e.g., calculation of time required for equipment and software).

3. Information Management and Communication

Students:
- **prepare, maintain, interpret, and disseminate quantitative and qualitative pieces of information relating to the natural and agricultural sciences.**

This is evident, for example, when students:
- ▲ conduct research and prepare in writing an extensive agricultural-related report integrating both text and graphics
- ▲ develop and produce complex agricultural-related documents (e.g., production and marketing reports, inventory reports, budgets/financial statements, advertising/sales materials), using appropriate manual and electronic tools
- ▲ prepare for and participate in a panel discussion on an agricultural issue to be videotaped and critiqued
- ▲ use sophisticated communications equipment to send and receive agricultural communications/correspondence regionally, nationally, and internationally (e.g., telephone, fax, electronic mail)
- ▲ use local and wide-area communications networks to obtain and exchange agricultural information on a regional, national, and international basis (e.g., the Internet)
- ▲ prepare an agricultural presentation to a community organization, using multimedia hardware/software to integrate graphics, audio, and video.

4. Agriculture Business Systems

Students:
- **demonstrate an understanding of the interrelationship between agricultural businesses and organizations designed to produce products, services, and information.**

This is evident, for example, when students:
- ▲ identify and explain how agricultural business systems can be affected by internal and external conditions (e.g., change in resources, supply and demand, risk, government controls, technology, social customs, consumer preferences and weather)
- ▲ demonstrate an understanding of the various subsystems within an agricultural enterprise and their interrelationship and interdependence (e.g., finance, procurement, international trade, environmental issues, production operations).

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3b

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Specialized

5. Resource Management

Students:

- **demonstrate the ability to manage personal time, business, and financial resources.**

This is evident, for example, when students:

- ▲ develop a mission statement, a set of goals and objectives, and an operating structure for a simulated or real agricultural business
- ▲ conduct a self-evaluation to identify personal compatibility with the agricultural career field selected for study
- ▲ describe the steps involved in starting a small business (e.g., lawn care—researching the number of homes in a community, average income level, equipment necessary, feasibility of business success)
- ▲ research and explore careers, identifying the steps in the job selection process, and refining human relations skills
- ▲ identify various sources of income and investments, categorize expenses, use a variety of banking services, and identify the various resources for consumer protection
- ▲ work with agencies serving agriculture (e.g., U.S. Department of Agriculture, State Agriculture and Markets, Environmental Conservation)
- ▲ complete a supervised occupational work experience.

6. Interpersonal Dynamics

Students:

- **demonstrate the interpersonal skills and abilities needed to function within a sophisticated and sometimes complicated agricultural environment.**

This is evident, for example, when students:

- ▲ understand how an agricultural business uses a team approach to solve problems and operate the business
- ▲ survey the personnel policies of a local agricultural enterprise to identify employee requirements and personnel standards
- ▲ participate in local, State, and national FFA meetings or contests
- ▲ demonstrate understanding of and sensitivity to working in a multicultural workforce (e.g., customs, beliefs, language, family life of migrant workers).

7. Safety

Students:

- **demonstrate awareness of the importance of safety and accident prevention in all agricultural situations.**

This is evident, for example, when students:

- ▲ interpret information and correctly apply it for safe agricultural product use
- ▲ identify potential hazards in personal and work-related environments
- ▲ develop safety rules for use in an agricultural class, shop, business, and laboratory
- ▲ describe and use the class, shop, and laboratory safety rules and regulations
- ▲ pass the certification test for pesticide application.

STANDARD 3b

Standard 3b—Career Majors

Experiential
Natural and Agricultural Sciences

1. Basic Agriculture Foundation Development

Students:
- **demonstrate a solid base of knowledge and skills in natural and agricultural sciences.**

This is evident, for example, when students:
- ▲ communicate and work with others in school/laboratory simulations, work-based activities, agricultural experience programs, and FFA activities
- ▲ apply computer technology and concepts necessary for managing/working in a typical agricultural enterprise related to the occupational cluster of study (e.g., interpretation of markets and marketing data to make decisions on production in the agricultural industry)
- ▲ develop policies for internal business use in complying with social, legal, ethical, and privacy requirements (e.g., personnel, safety)
- ▲ use decision-making/problem-solving skills to assist a local business/organization to develop a plan for protecting an area in a flood plain through conservation
- ▲ apply concepts of safety essential to individuals and society when directing the use of hazardous materials (e.g., maintain emergency protection areas, specialized equipment and clothing)
- ▲ identify the appropriate education required to enter a variety of careers in agriculture.

2. Agriculture-Related Technology

Students:
- **demonstrate the ability to use technology to assist in production and distribution of food goods and services of today's agricultural industries.**

This is evident, for example, when students:
- ▲ demonstrate the ability to set up, maintain, and repair various agricultural-related technological devices, using a variety of resources (e.g., manuals, vendor help lines, training courses or computer technology)
- ▲ apply technological knowledge and skills from the core and specialized levels, using hands-on learning experiences in more than one situation (e.g., work-based experiences in gathering pollen and hand-pollinating plants, calibrating a fertilizer spreader).

3. Information Management and Communication

Students:
- **prepare, maintain, interpret, and disseminate quantitative and qualitative pieces of information relating to the natural and agricultural sciences.**

This is evident, for example, when students:
- ▲ apply the core- and specialized-level skills of information management and communications knowledge through a variety of experiences, such as school/laboratory simulations, community-based projects, work-based activities, and agricultural experience programs.

4. Agriculture Business Systems

Students:
- **demonstrate an understanding of the interrelationship between agricultural businesses and organizations designed to produce products, services, and information.**

This is evident, for example, when students:
- ▲ identify the various organizations with regulatory responsibilities for an agricultural enterprise area in which students have expressed a career interest (e.g., USDA, State Agriculture and Markets, Soil Conservation Services (SCS), ASC, OSHA)
- ▲ design or modify a system for a particular need within a community business/organization related to a chosen occupational cluster (e.g., establishing hydroponic system for plant production)
- ▲ apply core- and specialized-level skills and knowledge of systems in a variety of experiences (e.g., school/laboratory simulations, capstone projects, community-based projects, work-based activities, and agricultural experience programs).

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3b

Students who choose a career major will acquire the career-specific technical knowledge/skills necessary to progress toward gainful employment, career advancement, and success in postsecondary programs.

Experiential

5. Resource Management

Students:
- **demonstrate the ability to manage personal time, business, and financial resources.**

This is evident, for example, when students:
- ▲ identify, prioritize, and continually update occupational goals and develop a plan to achieve those goals
- ▲ describe cost-effective strategies in developing and maintaining personnel (e.g., providing housing, food, and financial incentives for employees)
- ▲ develop a job search portfolio which might include a resume, interviewing strategies, employment opportunities, education and training requirements, compensation desired, etc.
- ▲ open a checking account and use bank services, develop a financial plan that will help achieve goals, obtain credit and prepare federal and State agricultural income tax returns, and use consumer protection agencies
- ▲ work with agricultural agencies involving cooperatives and government
- ▲ design an employee work schedule to use human resources effectively (e.g., scheduling dates for lawn care applications).

6. Interpersonal Dynamics

Students:
- **demonstrate the interpersonal skills and abilities needed to function within a sophisticated and sometimes complicated agricultural environment.**

This is evident, for example, when students:
- ▲ apply core and specialized levels of knowledge and skills through a variety of experiences with others (e.g., school/ laboratory simulations, student leadership organization activities, community-based projects, work-based activities, and agricultural experience programs)
- ▲ identify and employ coping strategies in handling developmental changes for self and others
- ▲ demonstrate the ability to teach/train a coworker in the use of computer software to establish and maintain a harvesting work schedule.

7. Safety

Students:
- **demonstrate awareness of the importance of safety and accident prevention in all agricultural situations.**

This is evident, for example, when students:
- ▲ apply the core and specialized levels of knowledge and skills through a variety of experiences (e.g., school/laboratory simulation, student leadership organization activities, community-based projects, work-based activities, and agricultural experience programs)
- ▲ identify potential hazards to oneself and others in an agricultural-related environment
- ▲ demonstrate practices which will prevent accidents
- ▲ describe the appropriate State and national laws that pertain to agricultural safety
- ▲ develop solutions to correct safety hazards
- ▲ are prepared to make timely and accurate decisions in the event of an accident
- ▲ establish a safety program for an agricultural enterprise.

STANDARD 3b

Standard 3b—Career Majors

Arts/Humanities

Career areas—dance, music, theatre, visual arts, and writing—in the creative and performing arts receive some attention in performance indicators, sample tasks, and student work referenced in Learning Standards publications for *The Arts*, *English Language Arts*, and *Health, Physical Education, and Home Economics*. Within these career areas, the key ideas will include aspects of creation, performance, production, dissemination, and preservation.

Career major panels being convened in conjunction with the State Advisory Council on School-To-Work and the State Departments of Labor and Education will provide further direction for the arts/humanities career major area. Career areas in the arts/humanities that interface with other career major areas (such as engineering/technologies—architecture, or human and public services—education) are referenced on p. 8 of the *Draft Framework for Career Development and Occupational Studies*. The areas listed below are not intended to be inclusive but to serve more as a sampling.

1. Dance

performance
choreography
lighting/costume design
therapy/fitness
aesthetics*

2. Music

composition
performance
education
business - production/promotion
technical - manufacturing/sound production
research/history

3. Theatre

playwrighting
acting
directing
set design
backing/sales/promotion
criticism

4. Visual Arts

fashion and apparel
TV broadcasting & media arts
architecture
interior/textile design
industrial design
arts management
visual artistry

5. Writing

fiction/nonfiction
technical/journalism
advertising/public relations
media - book/magazine editing
publishing/retailing
corporate communications
library and information services

(*Career areas, in some instances, are clearly not restricted to the area under which they appear; e.g., "aesthetics" is appropriate to all categories.)

STANDARD 3b

Samples of Student Work

The samples of student work included in this section are intended to begin the process of articulating the performance standards at each level of achievement. This collection is not yet adequate for that purpose in either numbers or scope of examples. As New York State continues to collect work samples from the schools for inclusion in the document, we expect a much clearer understanding of the performance standards to be evident.

Neither are these samples presented as models of excellence. They vary in degree of achievement. Some are "acceptable"; others "more proficient." All are meant to provide examples of the kind of work students might produce to demonstrate progress toward the standard.

Elementary

Student Work Sample

Context

Third-grade students worked in teams to create businesses. Each team wrote a simple business plan, developed a sales presentation, and designed an advertisement for their business. The students also created model buildings and invited members of the community to a "power lunch," where they delivered presentations about the steps they took to create their businesses. As the last step in the project, students wrote summaries of their experiences.

Performance Indicators

Students:

. . .demonstrate an awareness of their interests, aptitudes, and abilities

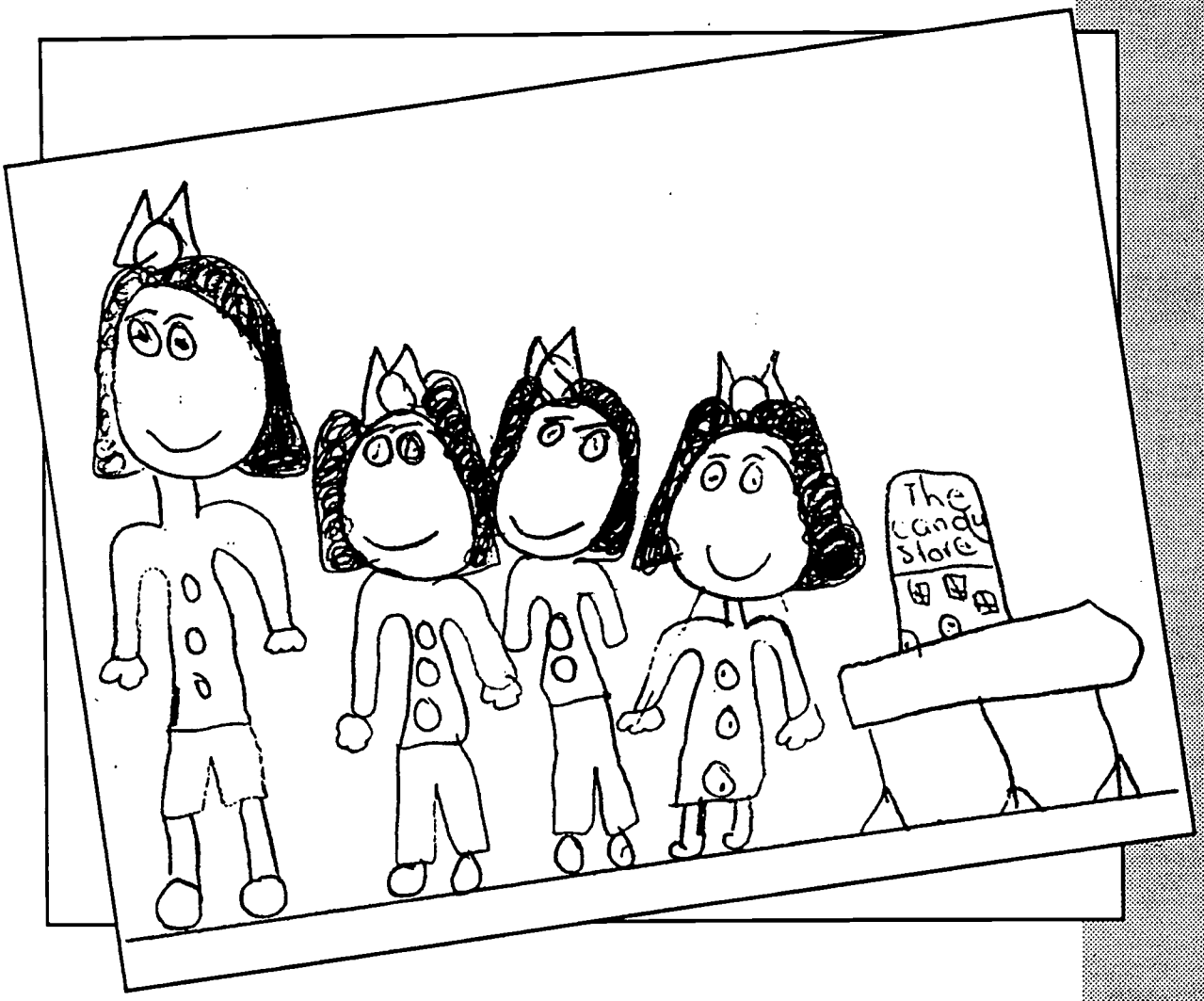
. . .know the value of work to society

. . .explore their preferences for working with people, information, and/or things.

Commentary

The Sample:

- shows that students can work together as part of a team
- demonstrates that students can apply simple principles of human relations
- shows that students can relate the things they like doing to careers
- demonstrates that students can apply the decision-making process
- illustrates that students can develop and deliver simple written and oral presentations.



I am a third grade student. I work with two partners. My business is the Candy Store. We decided to have a candy store because I love candy and my partners do too. We sell all kinds of candy like lollipops, skittles, gym, jelly beans, hotballs, and drinks. When we created our business we used many different skills. Me and my partners took turns handling the business. At the Power Lunch, we had visitors from another class, parents and other classes. We did our sales pitch and one of the teachers taped my partners and me.

Intermediate

Student Work Sample

Context

Working in small groups, eighth-grade students explored career options through a variety of printed resources and, also, through actual work-site visits. After completing the work-site visit, each student group had to provide an oral presentation about the career area, using visual displays to enhance the presentation.

Performance Indicators

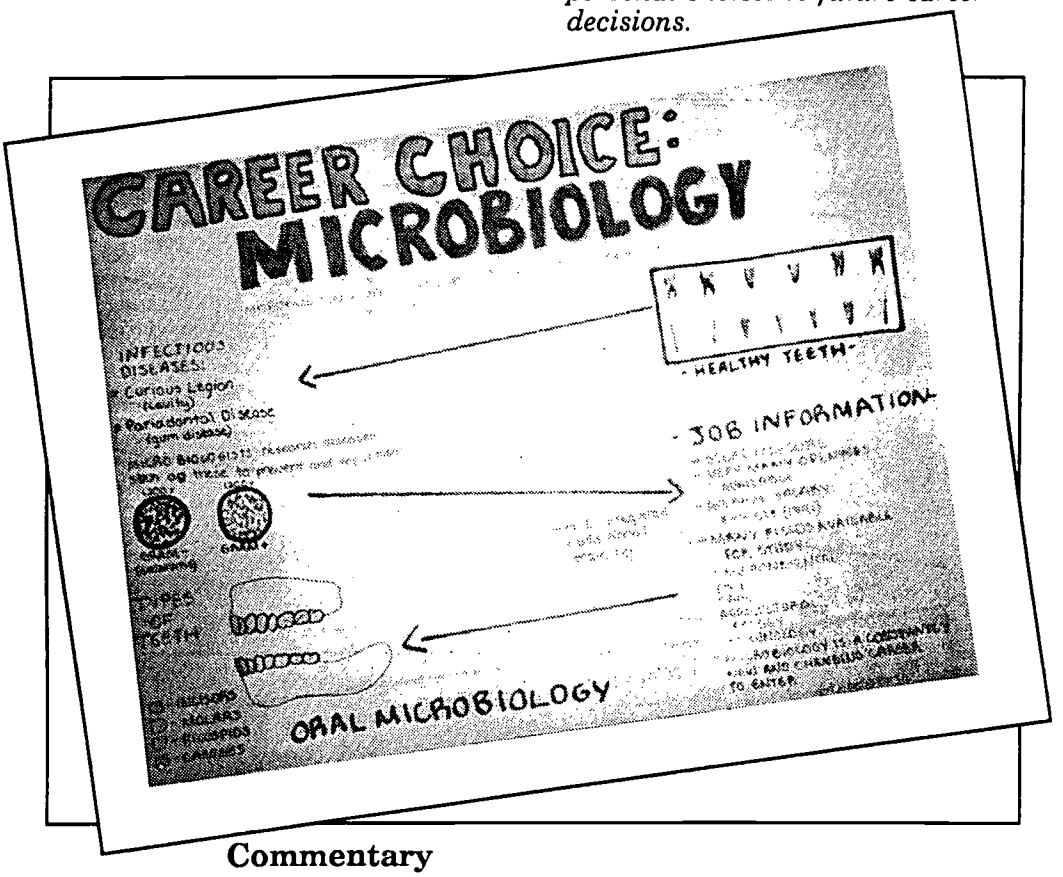
Students:

. . .demonstrate an understanding of the relationship among personal interests, skills and abilities, and career research

. . .understand the relationship of personal interests, skills, and abilities to successful employment

. . .demonstrate an understanding of the relationship between the changing nature of work and educational requirements

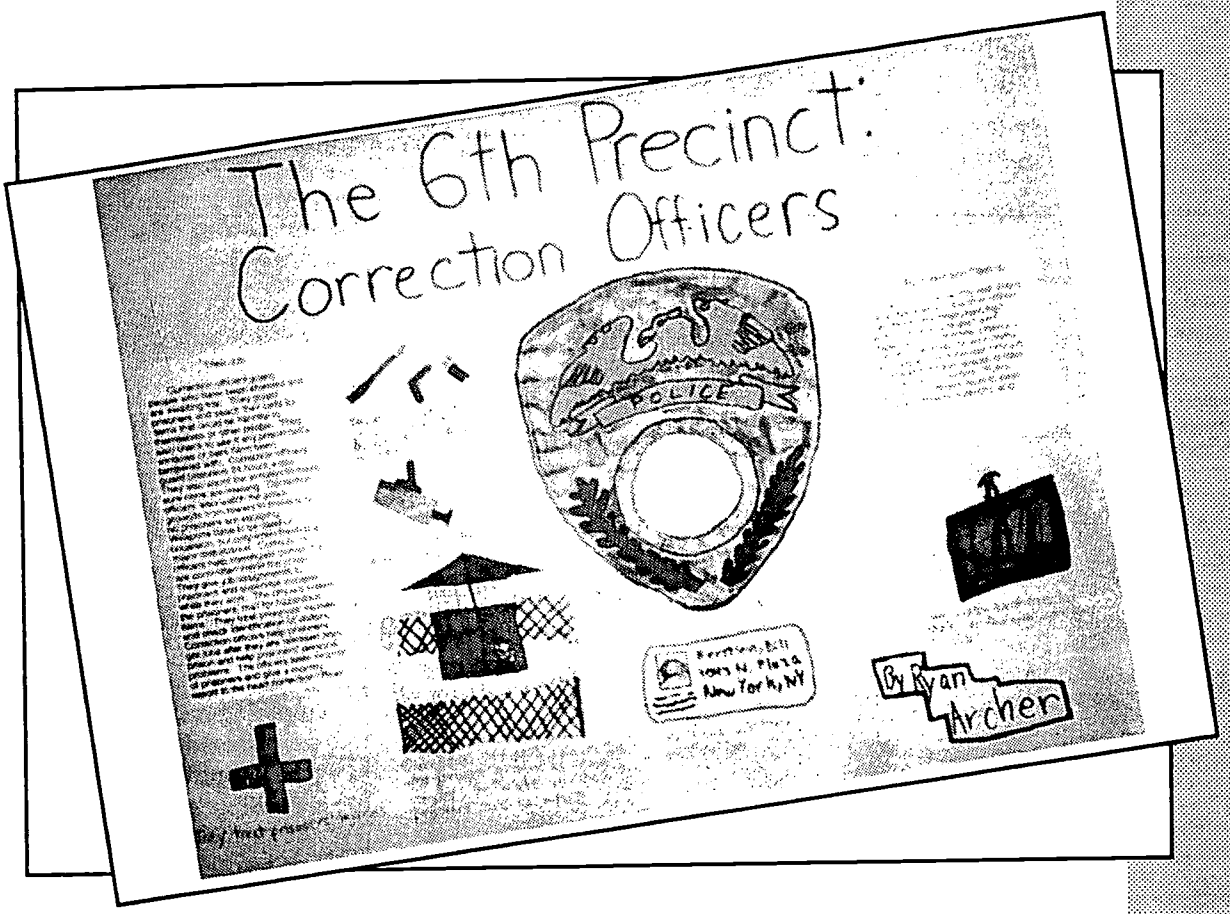
. . .understand the relationship of personal choices to future career decisions.



Commentary

The Sample:

- illustrates the use of various resources to learn about different careers
- incorporates observations made on work-site visits in the presentation/report
- engages cooperative group work in completing the project
- illustrates students' ability to identify characteristics and educational requirements for the career option.



Commencement

Student Work Sample

Context

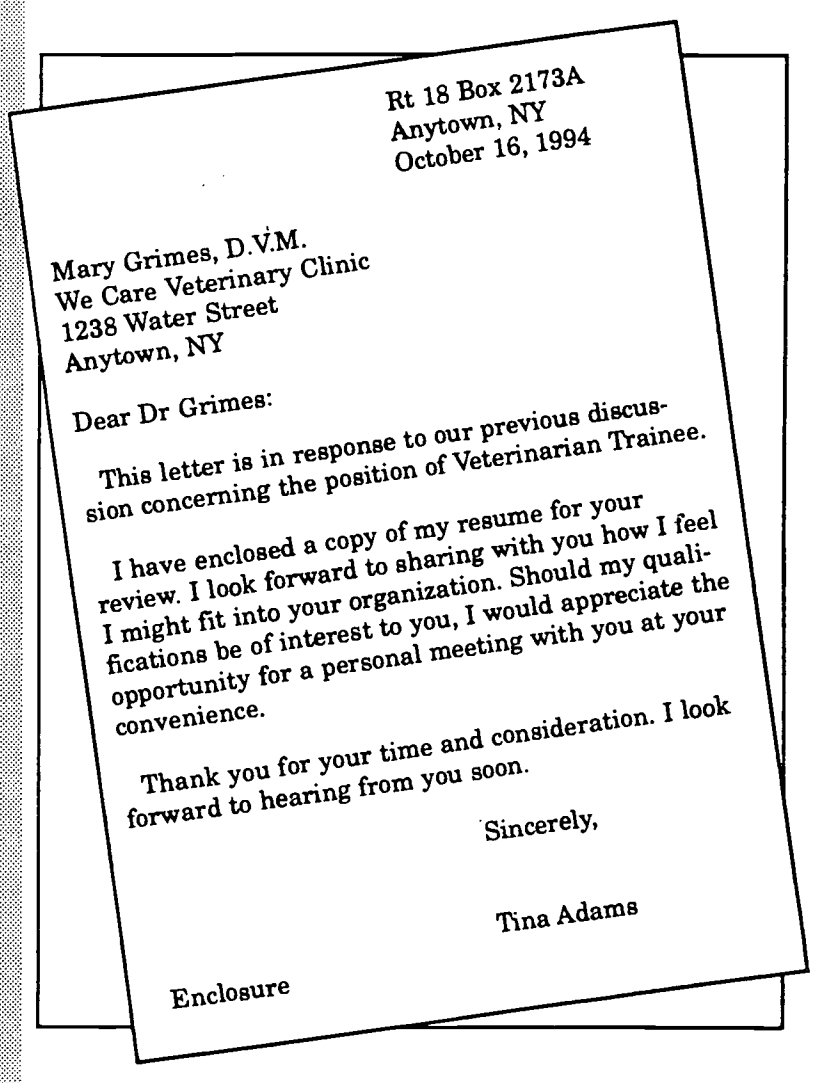
A twelfth-grade student in a unique occupations program had to apply and be interviewed for a work-based learning experience in a career area of interest. This particular student accumulated 350 hours of on-site experience as technician in a veterinary clinic.

Performance Indicators

Students:

. . . complete the development of a career plan that would permit eventual entry into a career option of their choosing

. . .apply decision-making skills in the selection of a career option of strong personal interest.



Rt 18 Box 2173A
Anytown, NY
October 16, 1994

Mary Grimes, D.V.M.
We Care Veterinary Clinic
1238 Water Street
Anytown, NY

Dear Dr Grimes:

This letter is in response to our previous discussion concerning the position of Veterinarian Trainee.

I have enclosed a copy of my resume for your review. I look forward to sharing with you how I feel I might fit into your organization. Should my qualifications be of interest to you, I would appreciate the opportunity for a personal meeting with you at your convenience.

Thank you for your time and consideration. I look forward to hearing from you soon.

Sincerely,

Tina Adams

Enclosure

Commentary

The Sample:

- shows the student's skill in preparing a business letter for the purpose of applying for the work-based learning placement
- shows that the student can evaluate personal skills and abilities in relation to a job experience
- demonstrates the student's ability to prepare a resume
- indicates the student can match personal goals and interests with a career option.

RESUME

Tina Adams
Rt 18 Box 2173A
Anytown, NY
(Telephone Number)

Current job objective: Veterinarian Assistant/Trainee.

Long-term goal: To Major in Animal Science and become a Doctor of Veterinary Medicine.

SUMMARY:
Computer literate; Macintosh, Apple II GS and IBM computers.
Completed course in Animal Science II. Energetic, hard working, willing to excel and accept constructive criticism.

RELEVANT SKILLS & EXPERIENCE:
Basic Home Maintenance:
Mowed lawns, raked leaves, painted porches, operated tools (lawn mower, paint brush, rake, weed-eater)
Volunteer work:
150 hours of community service
Completed classes in:
All core courses: (English, Math, Science, Social Studies), Animal Science II, Earth Science, Biology and Chemistry, Art, Computer Literacy, Computer Graphics

WORK HISTORY:
*December, 1993-March, 1994: **Ice Rink Attendant**
Village Arena
*April, 1994-June, 1994: **Rainbow Vacuum Salesperson**
*May, 1991-present: **Lawn Service**
*Summer Vacations: **Farm Worker**
(*While in school)

EDUCATION:
Central High School, Anytown, NY

REFERENCES:
Available upon request.

Elementary

Student Work Sample

Context

In this fourth-grade science project, a student had to research the procedure for constructing a barometer, build the barometer, record barometric pressure readings, and correlate the readings with precipitation. The student was then able to predict weather.

Performance Indicators

Students:

. . .identify academic knowledge and skills that are required in specific occupations

. . .demonstrate the difference between the knowledge of a skill and the ability to use the skill

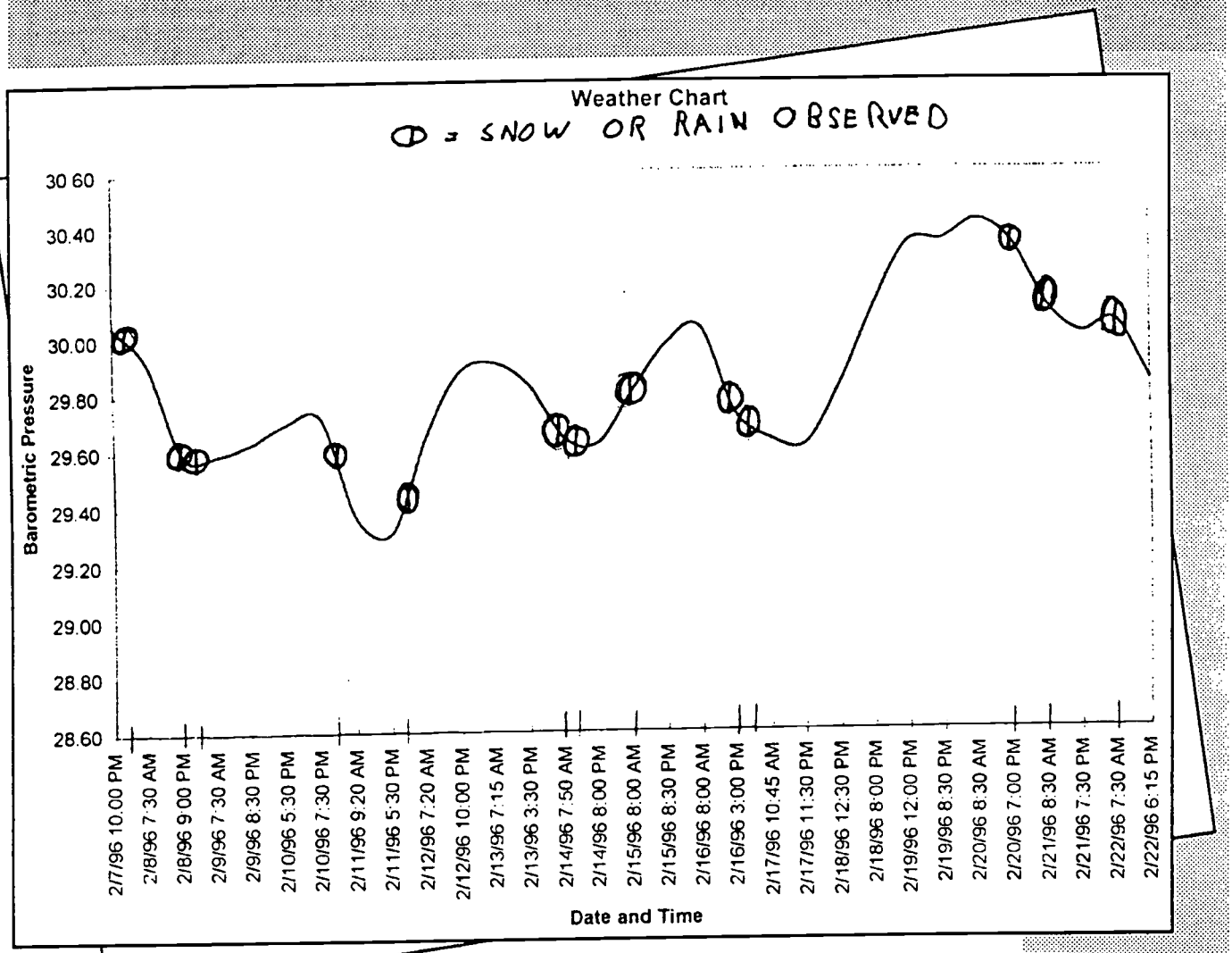
. . .solve problems that call for applying academic knowledge and skills.

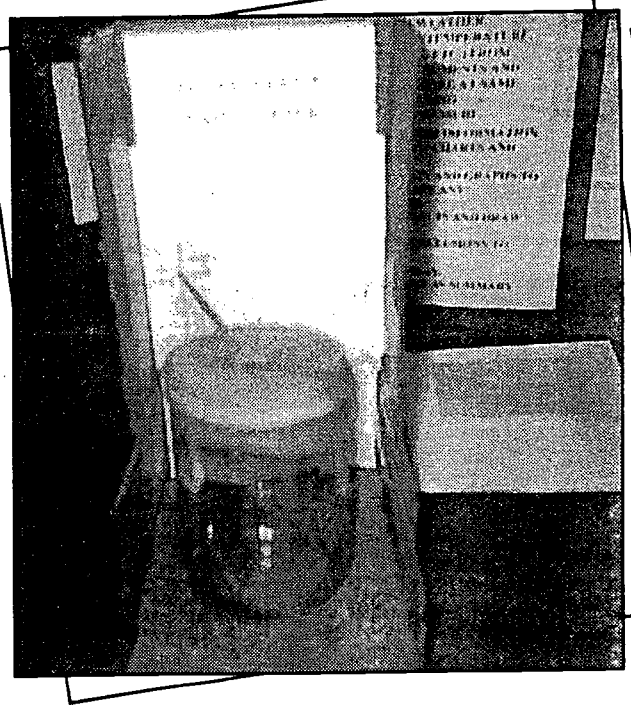
To make your own barometer, you need a wide-mouthed jar, large good-quality balloon, side and bottom of a cardboard box, rubber band, graph paper, tape, drinking straw, large deep pan, and hot water. (Note: make sure your jar fits into the pan.) Blow up the balloon, but don't tie it. Let the air out of the balloon. Cut a large piece from the balloon. Make sure you can stretch it over the mouth of the jar. Next, fill the pan with hot water. Put the jar, mouth side up, into the pan and hold it down. Make sure no water gets into the jar. Have another person stretch the large balloon piece over the mouth of the jar, leaving extra balloon on all sides of the jar. Immediately put one or more rubber bands around the jar near the top. This is so that the balloon piece will not pop off. Then remove the jar from the pan. Tape one end of the straw to the center of the large piece of balloon (which is across the top of the jar). Reinforce the sides of the cardboard with tape. Tape the piece of graph paper to the inside of the side piece of cardboard. Place the jar in front of the graph paper so that the end of the straw just touches the graph paper. Put a mark where the straw touches the paper. Find out the current barometric pressure and write it where you put the mark. As the barometric pressure rises, the pressure inside the jar will be lower than the barometric pressure outside the jar. As a result, the balloon piece will lower slightly, but the straw will rise. As the barometric pressure gets lower, the barometric pressure inside the jar will be higher than the barometric pressure outside the jar. This will push out on the balloon, causing the end of the straw to lower. Record the barometric pressure for a few days. Each time you record it, make a mark where the straw is and write down the number you recorded. After you do this a few times, you will begin to see a pattern. You may then stop taking measurements. Estimate the pressure at each gap midway between your recorded numbers, and fill in these figures. Then you can read the barometric pressure whenever you want, with your own barometer!

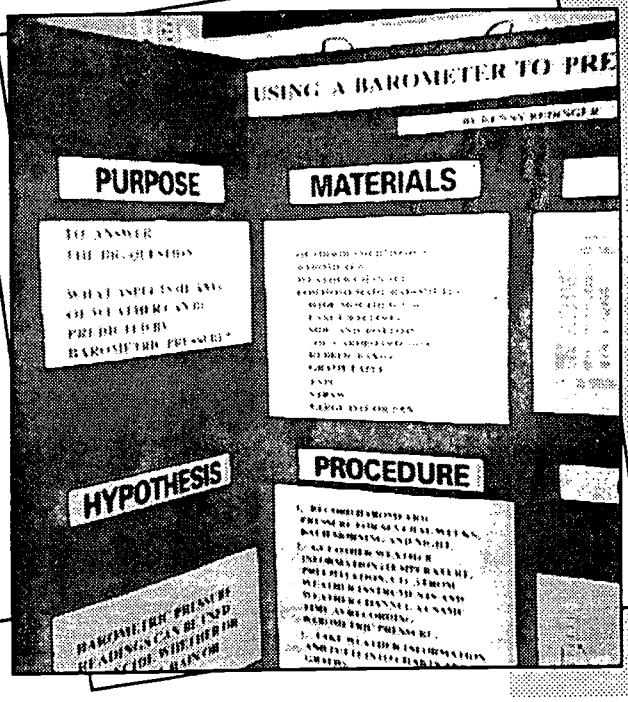
Commentary

The Sample:

- shows the student can apply various skills used in meteorology (e.g., mathematical, scientific)
- demonstrates the student's ability to read, interpret directions, and build a scientific instrument
- illustrates the student's ability to graph, record, and interpret data
- shows the student's ability to conduct research.







Elementary

Context

A group of fifth-grade students participated in a class landscaping project for homeowners in a new development. They designed a perennial garden to line the driveway, selected trees to create a natural boundary/property line, arranged for shrubs to be placed symmetrically in front of the house, and developed plans for a herb garden on the south side of the lot. They evaluated costs of materials, purchased commercially grown plants from the nursery, and drew up an architectural blueprint for beautifying the property.

Performance Indicators

Students:

. . .demonstrate the difference between the knowledge of a skill and the ability to use the skill

. . .solve problems that call for applying academic knowledge and skills.

Student Work Sample

To begin this project our work group went to 3 greenhouses to compare prices of items needed for our landscape project. These were our findings –

Materials	Greenhouse 1	2	3
Seedlings (Pine, oak, Willow)	$390	$480	$420
shrubs	$360	$680	430
rose bushes	$220	$230	$289
Flowers			
annuals	270	$280	$260
perrenials	$305	$289	307 ~~$307~~
herbs	$198	188	$204
Tools	$425	$505	$495
Mulching / thatching	$200	$200	$200
Soil	89	$129	$109
totals	$2407 + tax	$2981 + tax	$2714 + tax

We decided to buy all materials from greenhouse #1 -

Labor Cost

Labor for landscapers ranged from $40 to $45 per hour. We decided to charge $45. based on the number of Projects we need to do on the new lot.

56 hours (7 days x 8 hours)
x $45 (labor rate)
$ 2520

Labor and Materials Costs

$ 2407 (mtl.)
+ 2520 (labor)
4927.00
+ 192.56 (tax)
$ 5119.56

Using the amount $5119.56

We drew up a payment shedule, we plan to ask for 1/3 down payment and have the balance paid in (4) additional payments, (see chart) —

Payment plan	Amount	Due Date
Down Payment (1/3)	$ 1706.52	3-31
1	853.26	4-11
2	853.26	4-18
3	853.26	4-29
4	853.26	5-15

57

Commentary

The Sample:

- shows that the students were able to research costs of services (labor rate)
- demonstrates that the students constructed comparison graphs/data tables to assess current costs of greenhouse plants and materials (e.g., flowers, tools)
- illustrates that the students were able to apply mathematical concepts.

Intermediate

Student Work Sample

Context

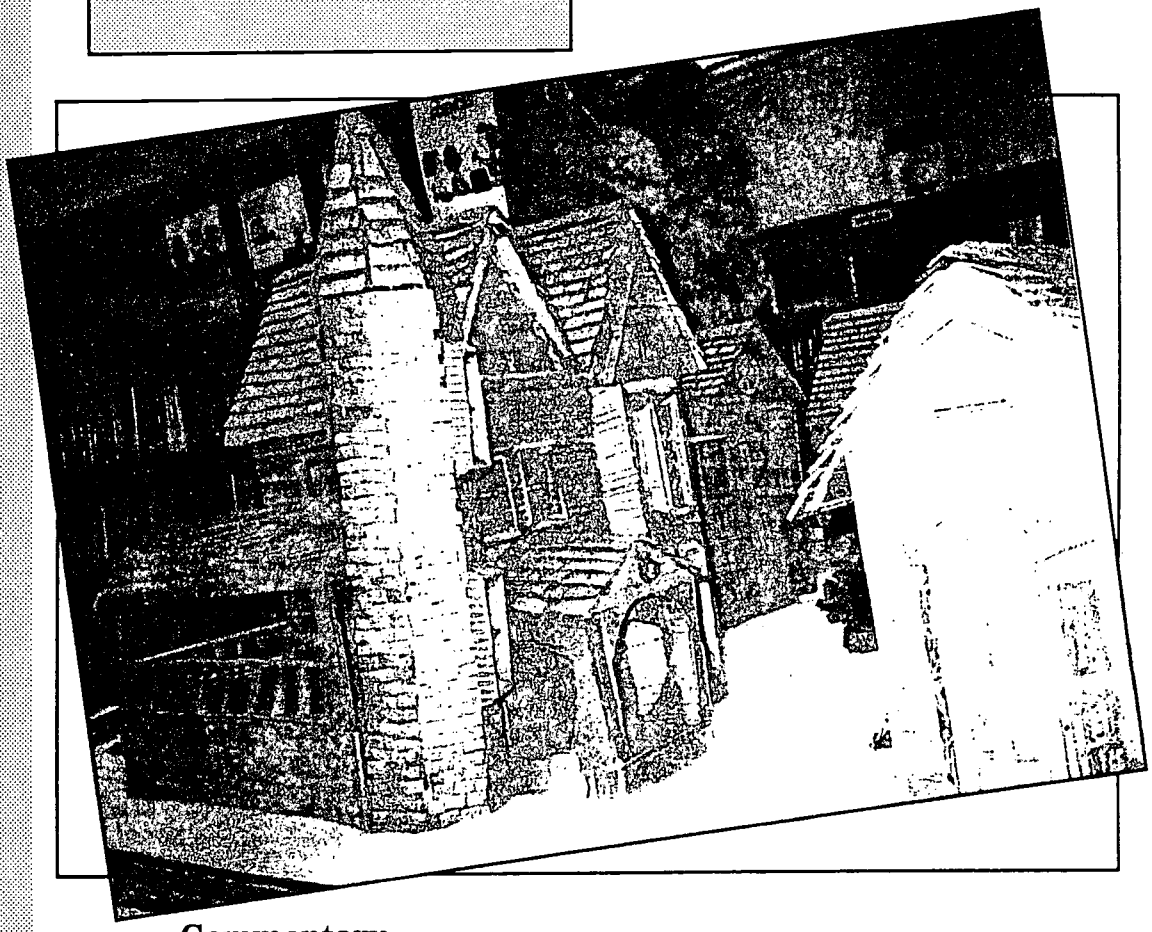
In this seventh-grade interdisciplinary project, students designed and built a model railroad village. This project included a research study of different architectural periods.

Performance Indicators

Students:

. . .solve problems that call for applying academic knowledge and skills

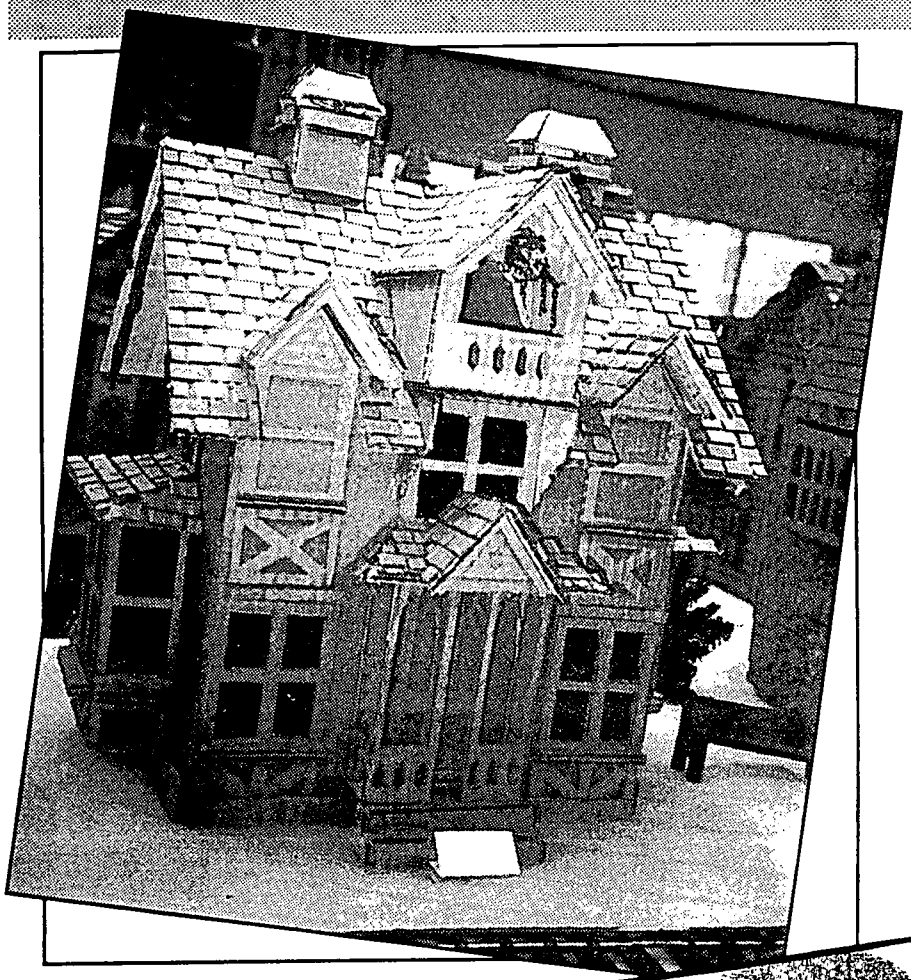
. . .use academic knowledge and skills in an occupational context, and demonstrate the application of these skills by using a variety of communication techniques (e.g., sign language, pictures, videos, reports, and technology).



Commentary

The Sample:

- demonstrates students' understanding of different architectural periods and structures
- incorporates knowledge from social studies, English, math, science, computer, art, home and career skills, and introduction to technology
- shows that students can develop and follow a plan
- shows students' ability to research needed information to complete the project
- indicates that students can work in cooperative groups.




Rail Road Village

Elementary

Student Work Sample

Context

A student had to keep a record of the food eaten for one day and then research the calorie content. This is the first step in learning about diet analysis. A computer was used to create the chart.

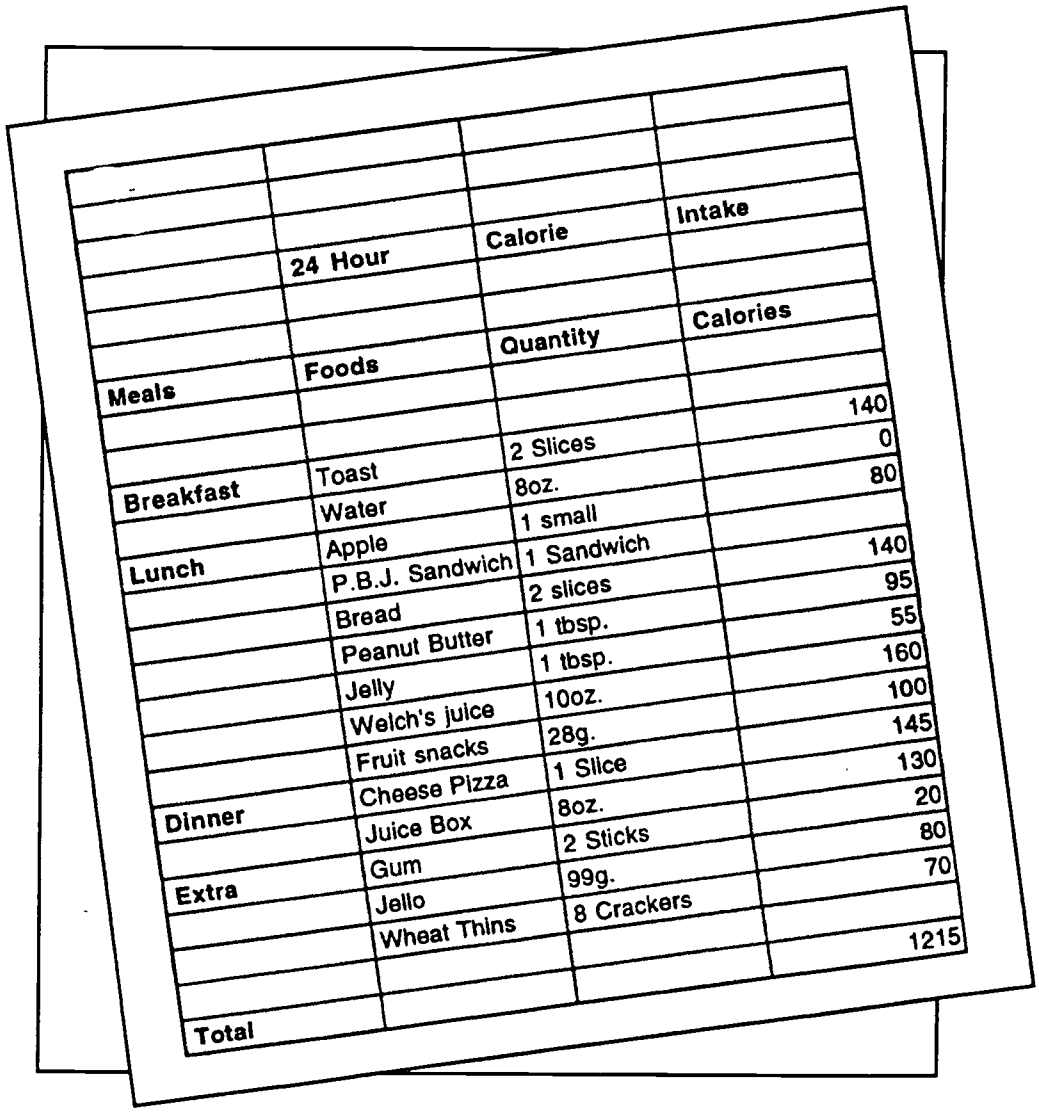
Performance Indicators

Students:

. . .describe the need for data and obtain data to make decisions

. . .demonstrate an awareness of the different types of technology available to them and of how technology affects society

. . . demonstrate an awareness of the knowledge, skills, abilities, and resources needed to complete a task.



Meals	24 Hour Foods	Calorie Intake Quantity	Calories
Breakfast	Toast	2 Slices	140
	Water	8oz.	0
Lunch	Apple	1 small	80
	P.B.J. Sandwich	1 Sandwich	140
	Bread	2 slices	95
	Peanut Butter	1 tbsp.	55
	Jelly	1 tbsp.	160
	Welch's juice	10oz.	100
	Fruit snacks	28g.	145
Dinner	Cheese Pizza	1 Slice	130
	Juice Box	8oz.	20
Extra	Gum	2 Sticks	80
	Jello	99g.	70
	Wheat Thins	8 Crackers	
Total			1215

Commentary

The Sample:

- shows that the student can record data accurately
- demonstrates that the student can extract appropriate data from resource charts and use it to complete a task
- demonstrates the student's ability to use a computer and simple spreadsheet program to produce a chart.

Intermediate

Student Work Sample

Context

Students in an eighth-grade home and careers class worked in teams to learn how to run and operate a business. They chose products to sell, set up production, established a management structure, planned marketing/advertising strategies, developed sales summaries, and conducted a final evaluation.

Performance Indicators

Students:

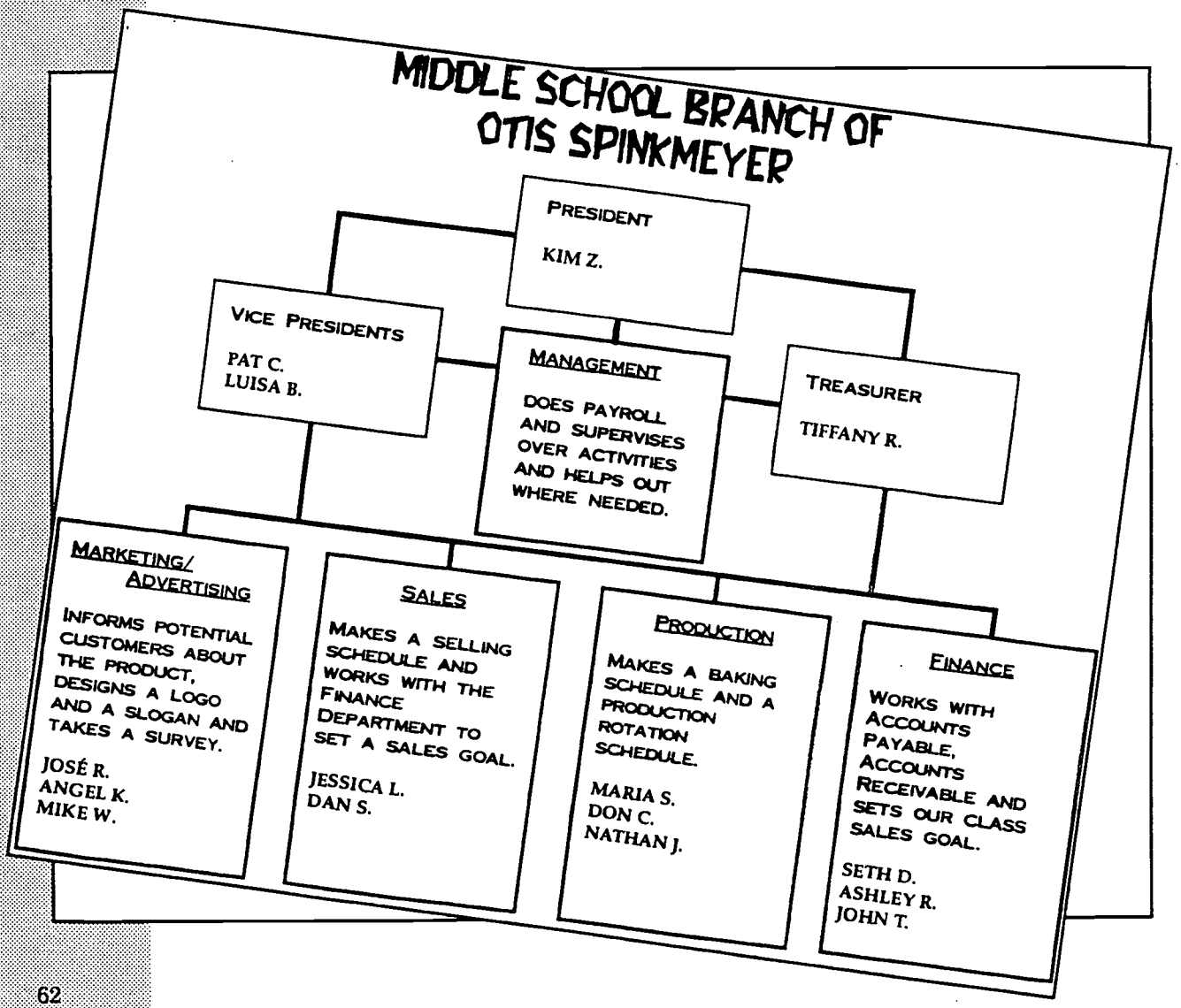
. . .select and use appropriate technology to complete a task

. . .evaluate facts, solve advanced problems, and make decisions by applying logic and reasoning skills

. . .understand the material, human, and financial resources needed to accomplish tasks and activities

. . .demonstrate the ability to work with others, present facts that support arguments, listen to dissenting points of view, and reach a shared decision

. . .understand the process of evaluating and modifying systems within an organization.



Commentary

The Sample:

- demonstrates the students' understanding of the management process and their ability to establish an organizational chart and job descriptions for their business
- illustrates the students' skill in designing and producing advertising for their product
- shows the students' ability to work as a member of a team toward a common goal
- demonstrates the students' ability to use software to construct an organizational chart
- indicates that students were able to design and implement various systems necessary in a typical business.

Standard 3a—Foundation Skills

Commencement

Student Work Sample

Context

A student in a high school accounting class was required to use data to manually complete a comparative income statement. The student then was asked to complete the same statement on a computer, using a spreadsheet software package.

Performance Indicators

Students:

. . .use technology to acquire, organize, and communicate information by entering, modifying, retrieving, and storing data

. . .apply their knowledge of technology to identify and solve problems

. . .demonstrate the ability to organize and process information and apply skills in new ways.

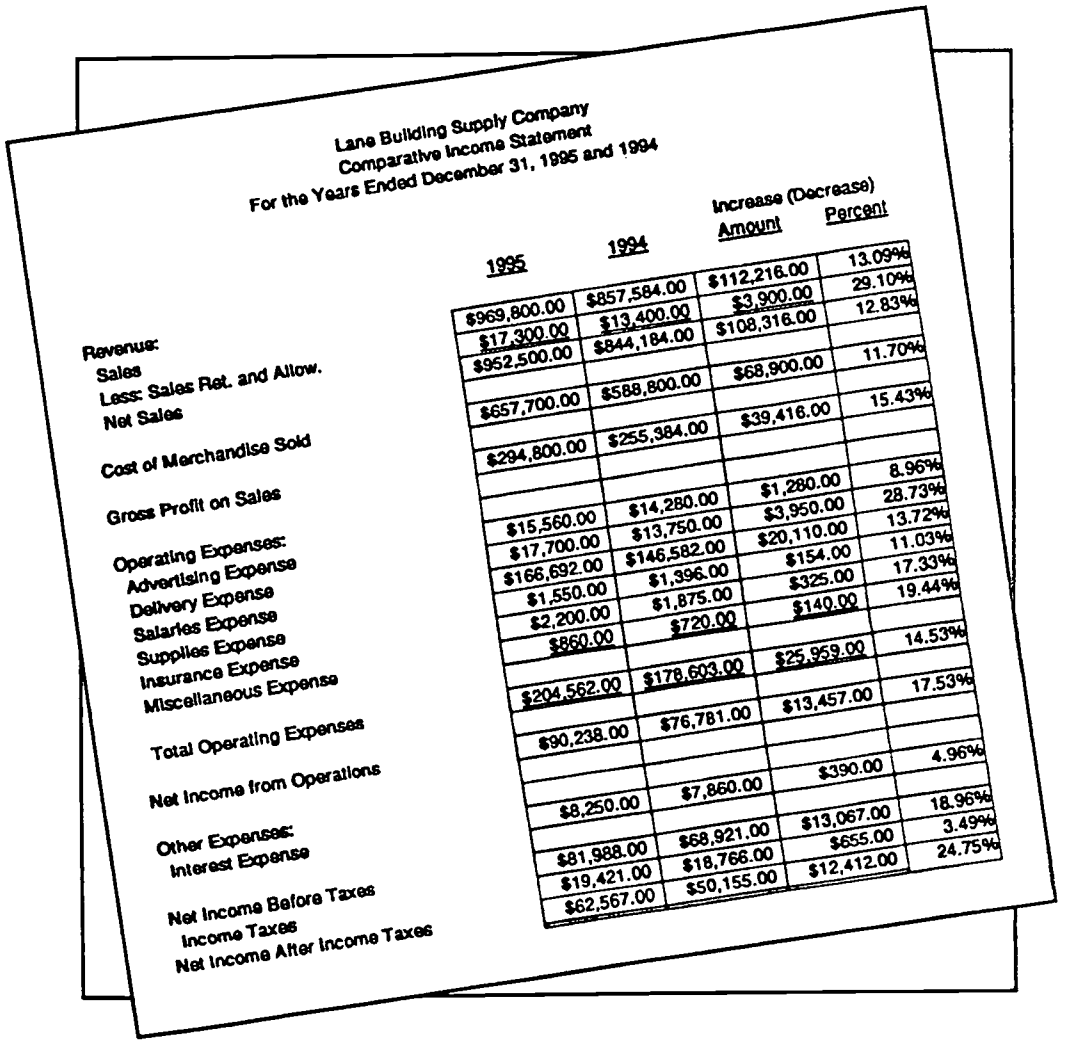
Lane Building Supply Company
Comparative Income Statement
For Years Ended 12/31/95 + 12/31/94

	1995	1994	Increase (Decrease) Amount	Percent
Revenue:				
Sales	969800 –	857584 –	112216 –	1309
Less: Sales Ret. + Allow.	17300 –	13400 –	3900 –	2910
Net Sales	952500 –	844184 –	108316 –	1283
Cost of Merchandise Sold	657700 –	568800 –	88900 –	1170
Gross Profit on Sales	294800 –	255384 –	39416 –	1543
Operating Expenses:				
Advertising	15560 –	14480 –	1080 –	896
Delivery	17700 –	13750 –	3950 –	2873
Salaries	166692 –	146582 –	20110 –	1372
Supplies	1530 –	1376 –	154 –	1103
Insurance	2208 –	1875 –	333 –	1733
Misc.	860 –	720 –	140 –	1944
Tot. Oper. Exp.	204562 –	178603 –	25959 –	1453
Net Income from Operations	90238 –	76781 –	13457 –	1753
Other Expenses:				
Interest	8950 –	7860 –	390 –	496
Net Income Before Taxes	81288 –	68921 –	13067 –	1896
Income Taxes	19421 –	18766 –	655 –	349
Net Income After Taxes	62567 –	50155 –	12412 –	2475

Commentary

The Sample:

- indicates the student was able to use thinking skills to analyze financial data/transactions
- demonstrates the student's ability to accurately key-enter data into a computer and use a software package to maintain/produce a financial statement
- indicates the student was able to apply accounting principles in manually completing the financial statement.



Lane Building Supply Company
Comparative Income Statement
For the Years Ended December 31, 1995 and 1994

	1995	1994	Increase (Decrease) Amount	Percent
Revenue:				
Sales	$969,800.00	$857,584.00	$112,216.00	13.09%
Less: Sales Ret. and Allow.	$17,300.00	$13,400.00	$3,900.00	29.10%
Net Sales	$952,500.00	$844,184.00	$108,316.00	12.83%
Cost of Merchandise Sold	$657,700.00	$588,800.00	$68,900.00	11.70%
Gross Profit on Sales	$294,800.00	$255,384.00	$39,416.00	15.43%
Operating Expenses:				
Advertising Expense	$15,560.00	$14,280.00	$1,280.00	8.96%
Delivery Expense	$17,700.00	$13,750.00	$3,950.00	28.73%
Salaries Expense	$166,692.00	$146,582.00	$20,110.00	13.72%
Supplies Expense	$1,550.00	$1,396.00	$154.00	11.03%
Insurance Expense	$2,200.00	$1,875.00	$325.00	17.33%
Miscellaneous Expense	$860.00	$720.00	$140.00	19.44%
Total Operating Expenses	$204,562.00	$178,603.00	$25,959.00	14.53%
Net Income from Operations	$90,238.00	$76,781.00	$13,457.00	17.53%
Other Expenses:				
Interest Expense	$8,250.00	$7,860.00	$390.00	4.96%
Net Income Before Taxes	$81,988.00	$68,921.00	$13,067.00	18.96%
Income Taxes	$19,421.00	$18,766.00	$655.00	3.49%
Net Income After Income Taxes	$62,567.00	$50,155.00	$12,412.00	24.75%

Core

Student Work Sample

Context

Students in a business analysis/business computer applications class develop, produce, merge, and mail a professional-quality form letter to local elementary school principals. The letter requested the opportunity to provide the principal with a Halloween newsletter which they could distribute to their students. The second part of the activity required students, working in teams, to write, design, and produce the actual newsletter. The newsletter needed to contain age-appropriate material and be professional in appearance.

Willow High School
321 Northeast Lane
Rochester, NY 14454
(Telephone Number)

October 2, 1995

Ms. Ellen Randel
Maple Elementary School
123 Hilltop Avenue
Rochester, NY 14454

Dear Ms. Randel:

Halloween is fast approaching. This means ghosts, goblins, witches, candy, and all the other goodies that come along with trick-or-treating. Being the principal of a K-3 school, I'm sure you know how excited children can get around this candy- and costume-filled holiday. In my business class, at Willow High School, we are creating Halloween newsletters geared toward K-3 students.

These newsletters are allowing us to demonstrate and utilize the skills we have acquired in word processing and desktop publishing. We are working with a variety of fonts, columns, shading, graphics and everything that falls under document formatting. This newsletter is also an opportunity for us to share Halloween safety tips, jokes, games, and stories with your K-3 students and their parents.

I know how exciting elementary schools can be on October 31. This newsletter will add to the excitement, bringing out more Halloween spirit at Maple Elementary School. My classmates and I would greatly appreciate the opportunity to share these newsletters with your students and parents. Please contact my instructor, Jim Oaks, at Willow High School, if you are interested in a newsletter for your students.

I look forward to hearing from you.

Sincerely,

Performance Indicators

Students:

. . .demonstrate an understanding of business, marketing, and multinational economic concepts. . .

. . .select, apply, and troubleshoot hardware and software used in the processing of business transactions

. . .prepare, maintain, interpret/analyze, and transmit/distribute information in a variety of formats while demonstrating the oral, nonverbal, and written communication skills essential for working in today's international service-/information-/technological-based economy

. . .identify, organize, plan, and allocate resources. . .

. . .exhibit interpersonal skills essential for success in the multinational business world, demonstrate basic leadership abilities/skills, and function effectively as members of a work group or team.

Commentary

The Sample:

- shows the student organized thoughts in a clear and concise manner
- indicates the student understood and used appropriate business letter format
- demonstrates the student's ability to use a computer system and appropriate software in generating the form letter, performing a mail merge, producing mailing labels, and designing the newsletter
- illustrates the student's ability to write, develop age-appropriate material, and produce a newsletter with eye appeal, ease of reading, and attractiveness
- indicates the student could effectively function as a member of a work group
- demonstrates the student understood and applied the problem-solving/decision-making process.

Happy Halloween

SPOOKY NEWS

OCTOBER 1995

COSTUMES

You should always wear bright colored costumes when you go out Trick or Treating. (Especially at night so people can see you!)

ONE MAIN RULE

STAY SAFE

SAFETY TIPS:

⇒ WEAR BRIGHT COLORS
⇒ GO OUT WITH AN ADULT
⇒ STAY IN A NEIGHBORHOOD WHERE YOU KNOW THE PEOPLE
⇒ DON'T EAT CANDY UNTIL YOUR MOM OR DAD LOOK AT IT

HALLOWEEN

SAFETY TIPS FOR YOU

- Always go trick-or-treating with your mom or dad.
- Carry a flashlight with you.
- Don't eat any candy unless your mom or dad has looked at it.
- Dress in bright colors. (For example white)
- Go trick-or-treating before it gets dark outside.
- Make sure you can see through your mask.

T M A S K F H B
R F C U R L A G
I S M J Z A L A
C A N D Y S L N
K F P G X H O T
O E T H S L W U
R T B O N I E L
T Y Z S D G E Q
R W I T C H N V
E O H C A T X F
A J D B T E P U
T P U M P K I N

Happy Halloween Word Search

See if you can find these Halloween Words in the puzzle

candy	masks
cat (there are 2)	pumpkin
flashlight	safety
fun	trick-or-treat
ghost	witch
Halloween	

Specialized

Student Work Sample

Context

As part of a business simulation, eleventh-grade students in a computerized accounting course had to develop and prepare numerous financial reports, including an income statement, a statement of owner's equity, and a balance sheet.

Performance Indicators

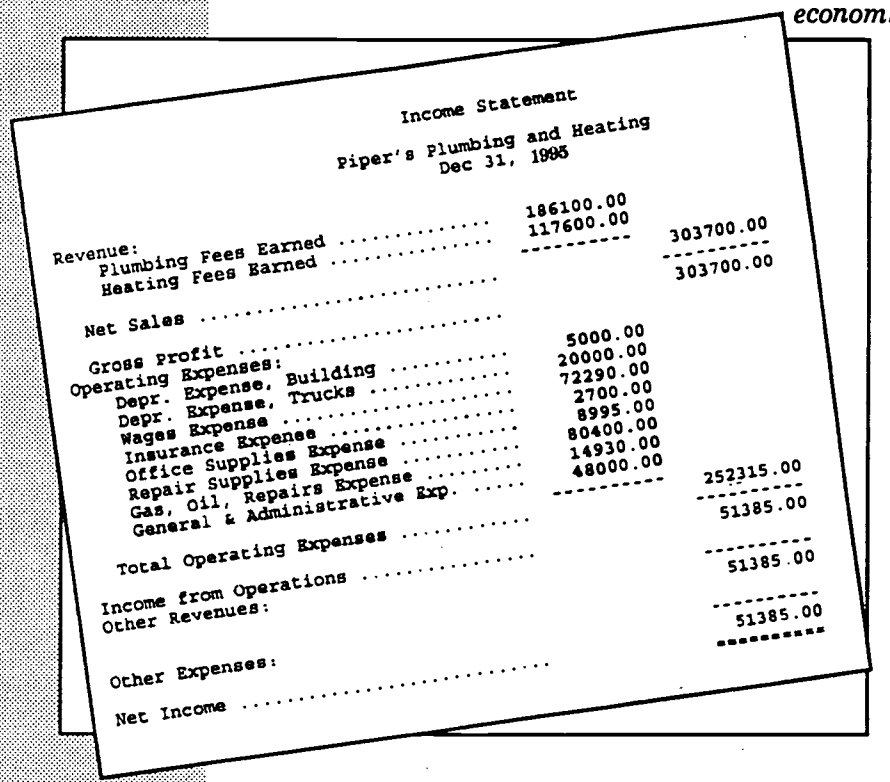
Students:

. . .demonstrate an understanding of business, marketing, and multinational economic concepts, perform business-related mathematical computations, and analyze/interpret business-related numerical information

. . .select, apply, and troubleshoot hardware and software used in the processing of business transactions

. . .prepare, maintain, interpret/analyze, and transmit/distribute information in a variety of formats while demonstrating the oral, nonverbal, and written communication skills essential for working in today's international service-/information-/technological-based economy

. . .demonstrate an understanding of the interrelatedness of business, social, and economic systems/subsystems.



Income Statement

Piper's Plumbing and Heating
Dec 31, 1995

Revenue:		
Plumbing Fees Earned	186100.00	
Heating Fees Earned	117600.00	
		303700.00
Net Sales		303700.00
Gross Profit		
Operating Expenses:		
Depr. Expense, Building	5000.00	
Depr. Expense, Trucks	20000.00	
Wages Expense	72290.00	
Insurance Expense	2700.00	
Office Supplies Expense	8995.00	
Repair Supplies Expense	80400.00	
Gas, Oil, Repairs Expense	14930.00	
General & Administrative Exp.	48000.00	
		252315.00
Total Operating Expenses		51385.00
Income from Operations		51385.00
Other Revenues:		
		51385.00
Other Expenses:		
Net Income		

Commentary

The Sample:

- shows the student can work with and interpret complex financial data in a job-like atmosphere
- illustrates the student can use business-related hardware and sophisticated software to perform complicated employment-like tasks and activities
- demonstrates the student can interpret, analyze, and use a variety of accounting source documents to develop and produce complex financial reports
- confirms the student can effectively work with realistic financial systems/subsystems and accounting software similar to that used in business accounting offices and departments.

Owner's Equity Statement

Piper's Plumbing and Heating
Dec 31, 1995

Capital-Bill Piper, 12/01/95		174600.00
Investments by owner	0.00	51385.00
Net Income	51385.00	225985.00
Total		30000.00
Less Owner's Withdrawals		195985.00
Capital-Bill Piper, 12/31/95		

Balance Sheet

Piper's Plumbing and Heating
Dec 31, 1995

Assets

Current assets:			
Cash	19445.00		
Office Supplies	730.00		
Repair Supplies	7600.00		
Prepaid Insurance	3800.00		
Total current assets		31575.00	
Long-term assets:			
Trucks	82000.00		
Accum. Depr., Trucks	(60000.00)		
Building	185000.00		
Accum. Depr., Building	(37000.00)		
Total long-term assets		170000.00	
Total assets			201575.00

Liabilities

Current liabilities:			
Accounts Payable	4000.00		
Wages Payable	990.00		
Unearned Heating Fees	600.00		
Total current liabilities		5590.00	
Total liabilities			5590.00

Owner's Equity

Capital-Piper, 12/31/95	195985.00		
Total equity			195985.00
Total liabilities and equity			201575.00

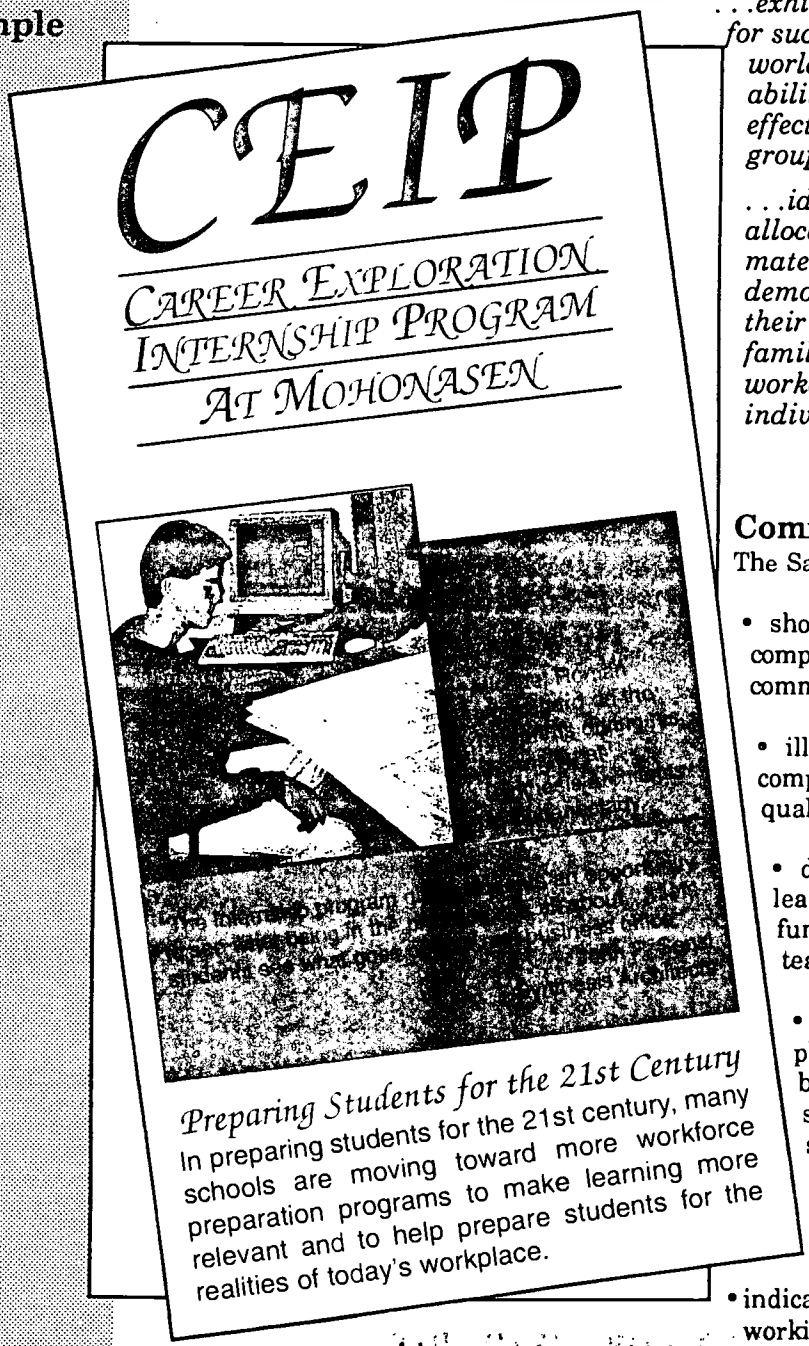
Standard 3b—Career Majors: Business/Information Systems

Experiential

Student Work Sample

Context

Eleventh- and twelfth-grade business and marketing education students were asked to design a promotional brochure for the high school's Career Exploration Internship Program (CEIP). The brochure was to be used to promote the internship program to parents, community organizations, businesses, and students.



Performance Indicators

Students:

. . .prepare, maintain, interpret/analyze, and transmit/distribute information in a variety of formats while demonstrating the oral, nonverbal, and written communication skills essential for working in today's international service-/information-/technological-based economy

. . .exhibit interpersonal skills essential for success in the multinational business world, demonstrate basic leadership abilities/skills, and function effectively as members of a work group or team

. . .identify, organize, plan, and allocate resources (e.g., financial, materials/facilities, human, time) in demonstrating the ability to manage their lives as learners, contributing family members, globally competitive workers, and self-sufficient individuals.

Commentary

The Sample:

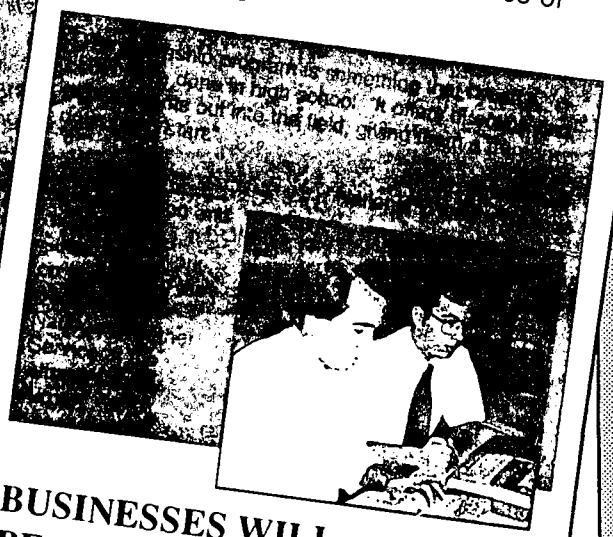
- shows the integration of students' computer, marketing, and communication skills
- illustrates the students' abilities in composing/producing a professional-quality promotional brochure
- demonstrates the students' leadership skills and their abilities in functioning as members of a work team
- highlights the students' abilities in planning and implementing a real-life business project according to a student-developed timeline and school-imposed financial budget
- shows the students' abilities to conduct appropriate research
- indicates the students' abilities in working with resource copy editors and printing professionals.

POSSIBLE CAREER AREAS TO EXPLORE...

- Accounting
- Architecture
- Auto Mechanics
- Bio-Medical Engineering
- Business Administration
- Child Care
- Communications
- Elementary Education
- Engineering
- Graphic Design
- Interior Design
- Journalism
- Law
- Medical Imaging
- Meteorology
- Nursing
- Pediatrics
- Physical Therapy
- Occupational Therapy
- Sports Medicine
- TV/Film
- Veterinary Medicine

BUSINESSES CAN EXPECT OUR STUDENTS TO...

- Develop a specific training plan
- Report when scheduled
- Be ready to learn
- Be responsible
- Appreciate the efforts and guidance of their mentors



BUSINESSES WILL BE ABLE TO...

- Participate in the school-to-work transitional process
- Collaboratively work with Mohonasen to help students develop a positive work ethic
- Contribute to the development of future employees and leaders
- Offer their expertise and knowledge to interested learners

Core

Student Work Sample

Context

This assignment was given to seniors enrolled in an integrated health careers exploration program. After reviewing codes of ethics from various sources, the students were asked to work in cooperative learning groups to develop a code of ethics for their class.

Performance Indicators

Students:

. . .know the importance of performing their role in the health care system in accordance with laws, regulations, policies, ethics, and the rights of clients.

NEW VISION CLASS
CODE OF ETHICS

The New Vision students agreed to maintain the following standards:

1. To maintain professional standards expected of a New Vision student.
2. To learn and implement properly the theory taught to the New Vision class.
3. To know, understand and stay within the New Vision guidelines.
4. To be courteous and empathetic to peers, staff, patients and visitors.
5. To maintain confidentiality and privacy regarding patients.
6. Not to accept gifts from patients.
7. To be dependable to report to New Vision assignments on time.
8. To work cooperatively with peers, instructors and staff
9. To maintain the New Vision Dress Code when at the VA Medical Center.
10. To maintain one's physical, mental and social health.
11. To properly care for all equipment and supplies.
12. To report any incident that involves me to my supervisor immediately.

Commentary

The Sample:

- shows that the students can differentiate between legal and ethical rules
- demonstrates that the students understand the importance of equitable treatment of all people
- indicates that the students can develop a code of ethics for class with application in a health care setting.

Core

Context

This assignment was given to a high school student enrolled in a health exploration program. The student was asked to write an essay describing the importance of understanding science concepts in the health care environment.

Performance Indicators

Students:

. . .apply knowledge/skills acquired in academic subjects to the health care environment.

Student Work Sample

USING SCIENCE CONCEPTS IN HEALTH CAREERS

To achieve a degree in a health-related field one must have knowledge of and experience in science. Whether it be biology, chemistry, physics or anatomy and physiology, science is a crucial part of the variety of health careers.

Biology is the study of life; the environment and the organisms within it. Understanding biology is important for understanding the basic principles of health. For instance, the microbiologist studies cells and their disorders. By understanding the building blocks of the human body, microbiologists can understand its malfunctions and obtain methods to correct them. The laboratory technician uses biology to help diagnose disease by means of identifying the pathogenic microorganisms from the environment that cause disease.

Another important science field for most health professionals to understand and utilize is chemistry. The aspect of chemistry known as organic chemistry deals with the make-up of natural compounds. It is important for the dietitians to know and understand these compounds so they are able to prescribe the best food and supplements for their patients' specific needs. Pharmacists particularly need to understand chemistry thoroughly. Since the body's functions are controlled by a series of chemical reactions chemistry is used by the pharmacists to help correct imbalances in the body. By using drugs to alter the body's chemistry the pharmacists are able to correct and control the body functions.

Physics is also important when dealing with health. Physics is the study of the world around us. Physics deals with the study of waves, electricity, and energy. These aspects of science are especially important to the Cardiologists and electrocardiogram technicians. The heartbeat is a series of electrical impulses. It is important for medical personnel to understand electricity so they can comprehend how the heart works and how to diagnose its disorders. EKG technicians study these impulses by studying the waves that these impulses make on the electrocardiogram. Nurses apply the theory of physics as they move patients. They need to know the methods that work with gravity so they do not hurt themselves or their patients.

Perhaps the most important aspect of science in the health field is anatomy and physiology. This science deals with the structures of the human body and how these structures work together to maintain body homeostasis. Since all health professions deal with keeping the human body healthy, it is crucial to understand body structure and function. Some professions particularly dealing with A&P are orthopedic doctors, muscle specialists, general physicians, pharmacists and nurses.

The study of sciences is an important part of all healthrelated fields. Biology, chemistry, physics, and anatomy and physiology are important to study and comprehend as they play a crucial role in understanding the human body and keeping it healthy.

Commentary

The Sample:

- shows the student understands that knowledge acquired in science classes is important for the world of work
- identifies areas of science that are pertinent to health careers
- shows that the student can present a coherent and informative essay on an issue related to a career major area.

Experiential

Student Work Sample

Context

In this activity, high school students in a dental assisting program were asked to design a presentation to be given to preschool and elementary grade students to help them understand proper dental care and cavity prevention methods.

Performance Indicators

Students:

. . . develop knowledge of the concept of optimal health and identify factors that affect health maintenance

. . .communicate information in a variety of formats and media.

Student Sample A

Posters illustrate cavity prevention and dental care.

Student Sample B

Two dental students use puppets to teach preschool students about the importance of good dental care.

Commentary

The Sample:

- illustrates that students can design and organize a presentation to instruct preschool and elementary students about preventive health practices such as proper dental care
- indicates that students can synthesize and adapt material to suit the audience
- shows that students can inform others of the importance of a dentist and dental assistant in the health care system.

Experiential

Student Work Sample

Context

Aviation students had to develop flight plans, research the weather via the Internet from Purdue University and the Duat Weather Service. The students performed weight and balance calculations and plotted weather maps, using paper and pencil. They performed manual navigation methods and basic flight planning procedures, using a navigation plotter and circular slide rule known as an E-GB.

Performance Indicators

Students:

. . .develop practical understanding of engineering technology through reading, writing, sample problem solving, and employment experiences

. . .demonstrate how all types of engineering/technical organizations, equipment (hardware/software), and well-trained human resources assist and expedite the production/distribution of goods and services

. . .demonstrate knowledge of planning, product development and utilization, and evaluation that meets the needs of industry.

FliteStar (V3.70) Flightplan 04/02/96

Name: S. Mroz
Aircraft: Learjet

Waypoint	MC / MH	Alt-Start / Alt-End	TAS / GS	Wind / Temp	Dist. Rem.	Time Rem.	Fuel Rem.	Actual ATE/FUEL
KEAU: LAT: N44 51.9 LON: W091 29.1								
MSA: 3600				** CLIMB **			217.6	
	103	907	273	210/26	10.2	00:02	3282.4	
	108	11000	279	13	135.5	00:23		
				** DESCEND **			449.6	
MSA: 3600					46.7	00:08	2832.8	
	103	11000	344	250/30	88.8	00:15		
	107	7000	350	-6				
KMFI: LAT: N44 38.2 LON: W090 11.3								
MSA: 4200				** DESCEND **			271.4	
	100	7000	328	210/26	28.7	00:05	2561.4	
	104	5000	341	1	60.1	00:10		
KSTE: LAT: N44 32.7 LON: W089 31.8								
MSA: 3700				** DESCEND **			593.5	
	94	5000	313	220/21	60.1	00:10	1967.9	
	98	695	324	5	0.0	00:00		
KGRB: LAT: N44 29.1 LON: W088 07.7								

Gross Weight: 11220
Amount Under Max Gross: 2280
Inches Aft of Datum: 249.7
Aircraft Moment: 2801540.0

Total Dist: 145.7
Total Time: 00:25
Total Fuel: 1532.2

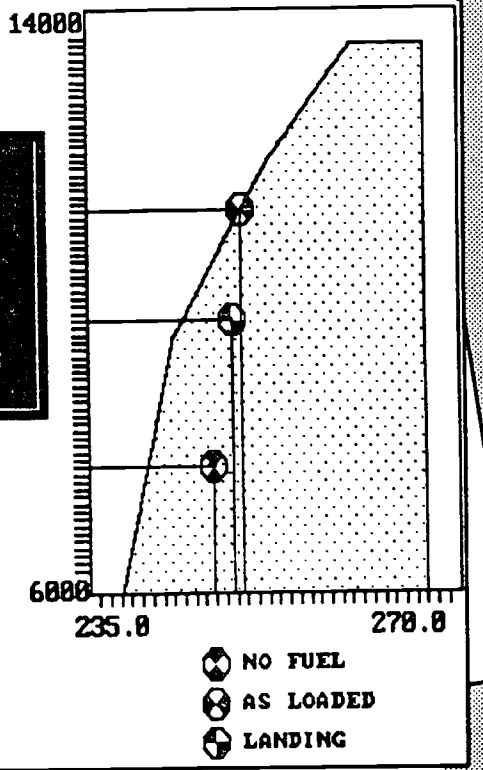
Commentary

The Sample:

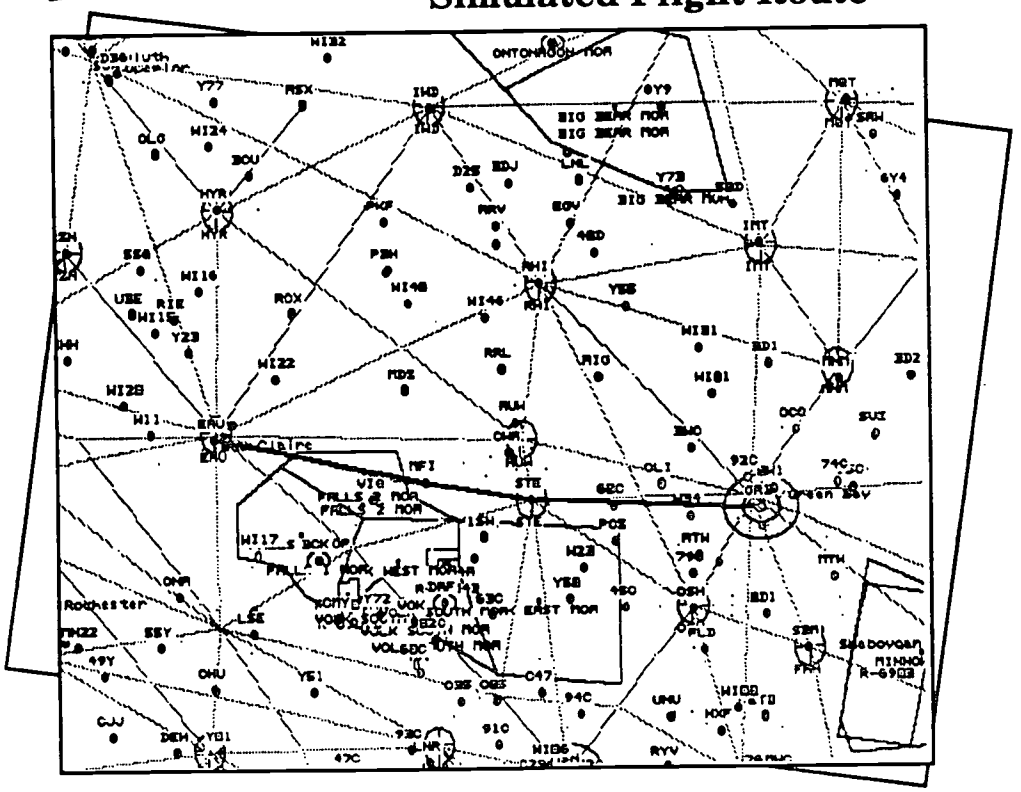
- demonstrates that students can perform weight and balance calculations relating to aircraft flight performance
- illustrates that students can develop a flight plan
- shows that students can interact with the technological equipment necessary to plot a flight plan.

Weight & Balance

Desc	Type	Weight
Empty Acft	other	6500
Pilot & Pass	other	400
Seat 2 & 3	pass	240
Seat 5 & 6	pass	350
Seat 7 & 8	pass	130
Baggage	bagg	100
Fuel	fuel	3500



Simulated Flight Route



Experiential

Student Work Sample

Context

An eleventh-grade student was presented with the following situation: a business had an original, not-to-scale drawing of a hinged bracket assembly. The business also had the actual hinged bracket assembly. The business requested an accurately scaled CAD drawing of the hinged bracket assembly on a "B" sized ANSI border, 11" x 17", with associated line weighing and appropriate CAD layering principles applied.

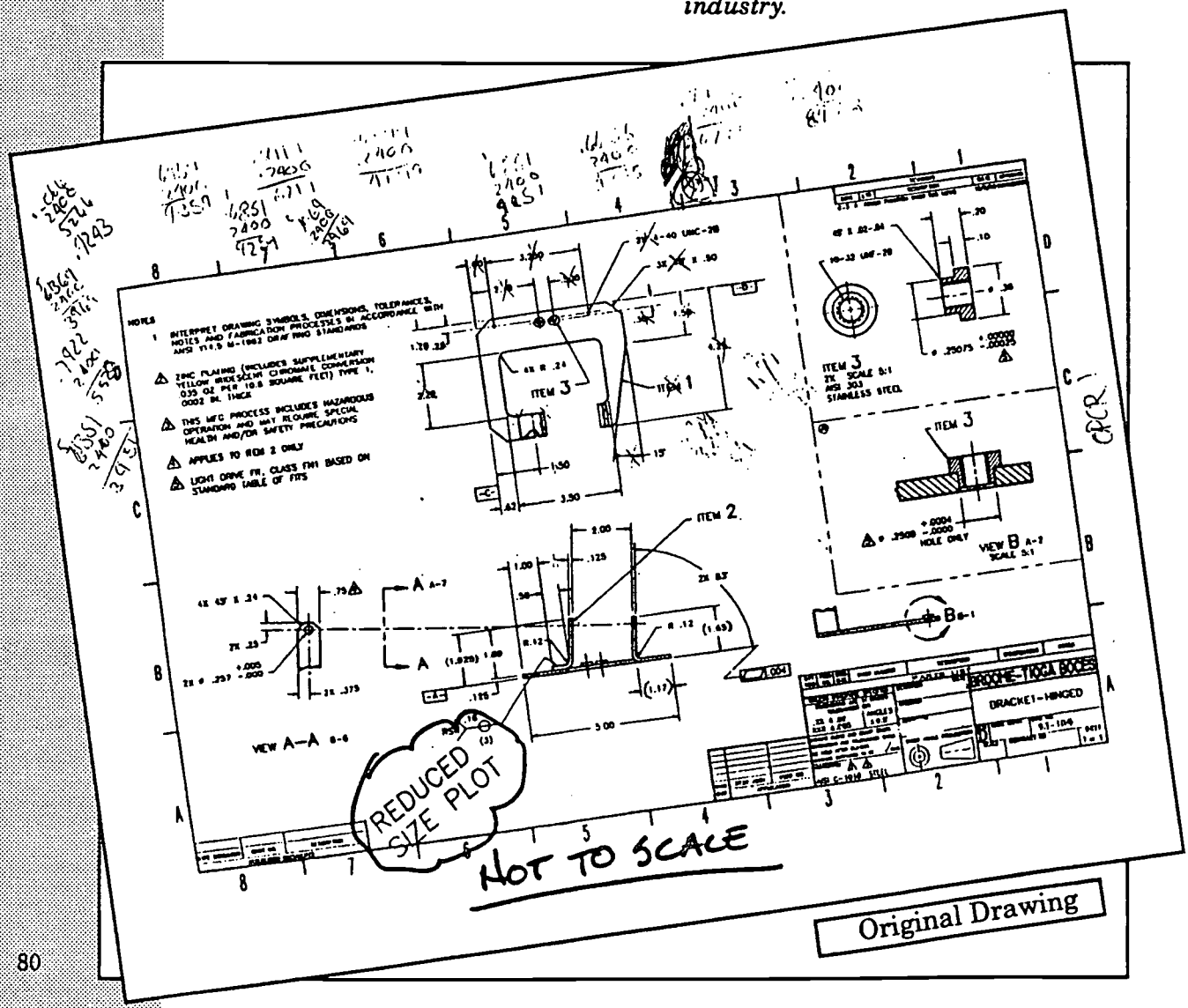
Performance Indicators

Students:

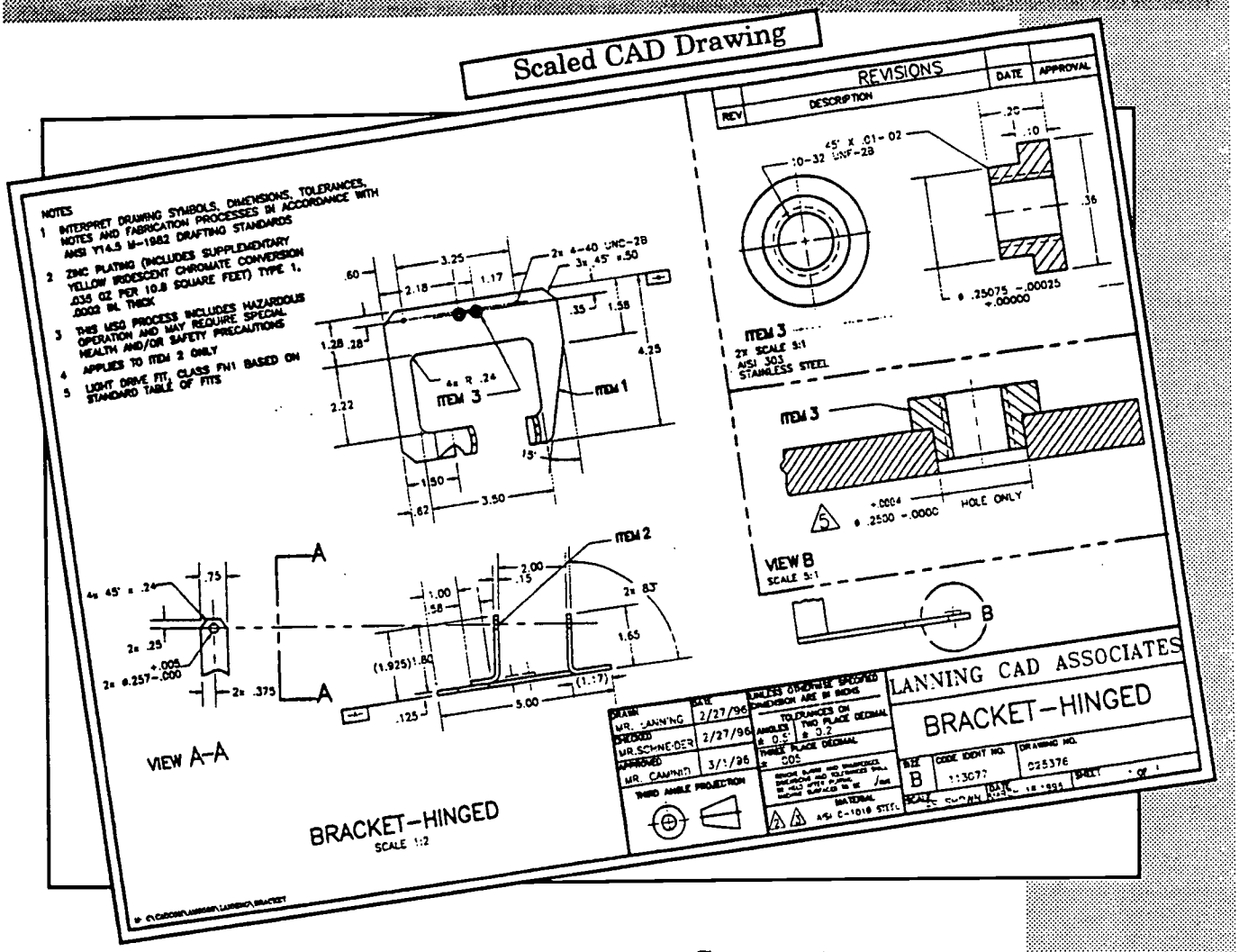
. . .develop practical understanding of engineering technology through reading, writing, sample problem solving, and employment experiences

. . .demonstrate how all types of engineering/technical organizations, equipment (hardware/software), and well-trained human resources assist and expedite the production/distribution of goods and services

. . .demonstrate knowledge of planning, product development and utilization, and evaluation that meets the needs of industry.



Scaled CAD Drawing



Commentary

The Sample:

- demonstrates the student's ability to use a computer system and related design software
- illustrates the student's skill in meeting recognized manufacturing design standards commonly used in industrial employment settings
- shows that the student can skillfully apply concepts of mathematics required in the engineering/technologies career major area.

Experiential

Context

This eleventh-twelfth-grade activity reflects a technical engineering problem posed to an electronics class. The engineering challenge is designed to have students work as a team to develop a working circuit from engineering specifications. The students will assemble a regulated AC-to-DC power supply from a parts list, using a block diagram.

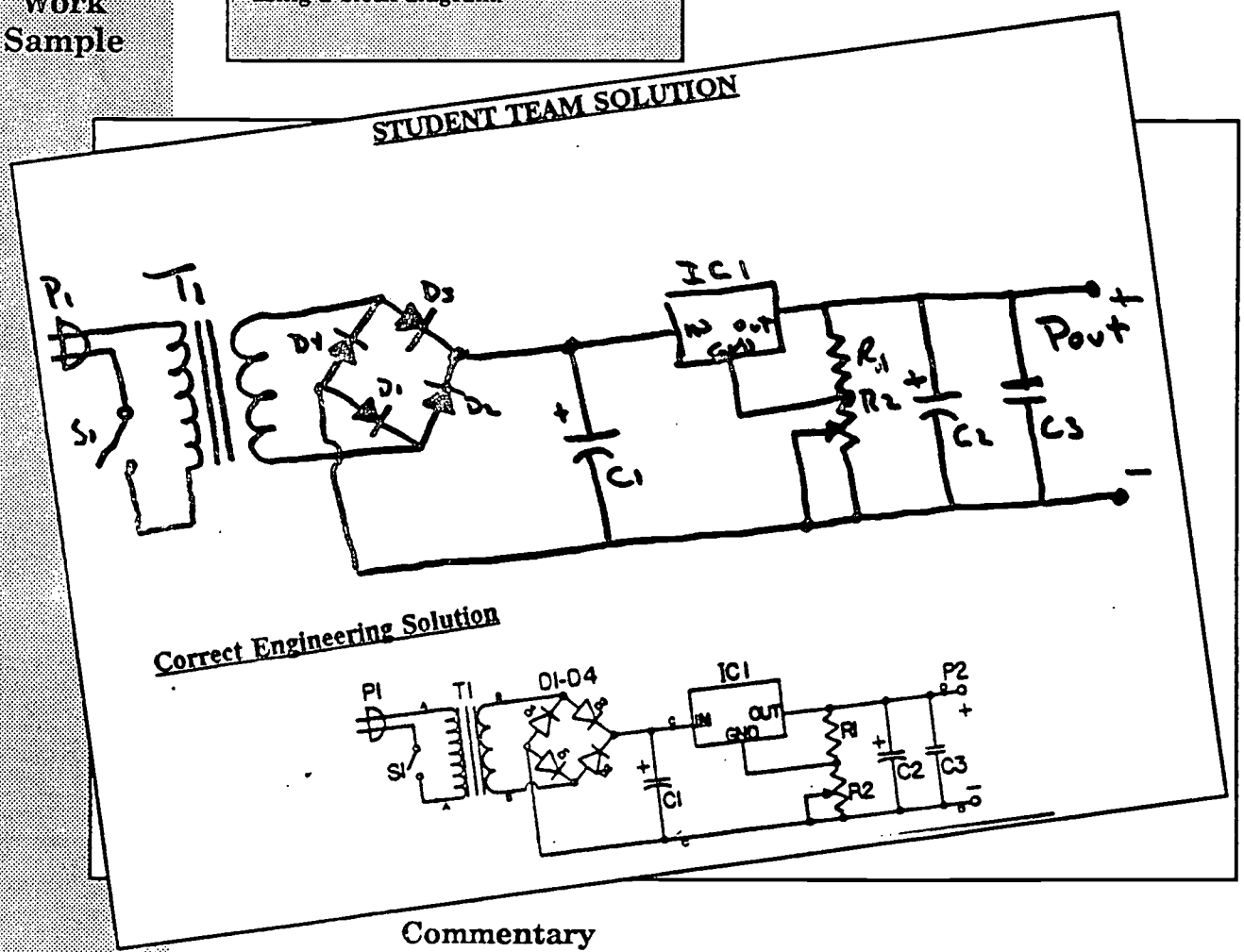
Performance Indicators

Students:

. . .develop practical understanding of engineering technology through reading, writing, sample problem solving, and employment experiences

. . .demonstrate knowledge of planning, product development and utilization, and evaluation that meets the needs of industry.

Student Work Sample



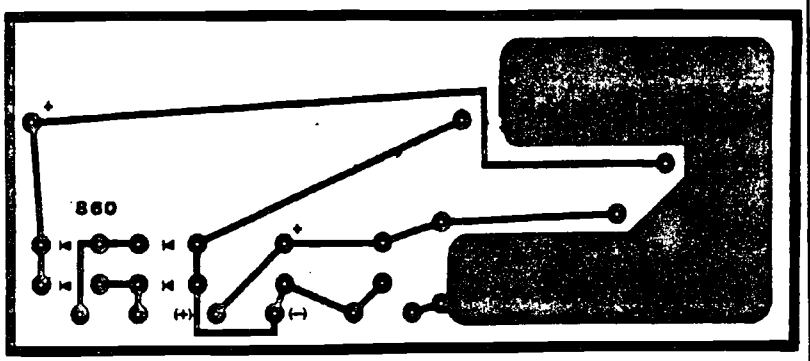
Commentary

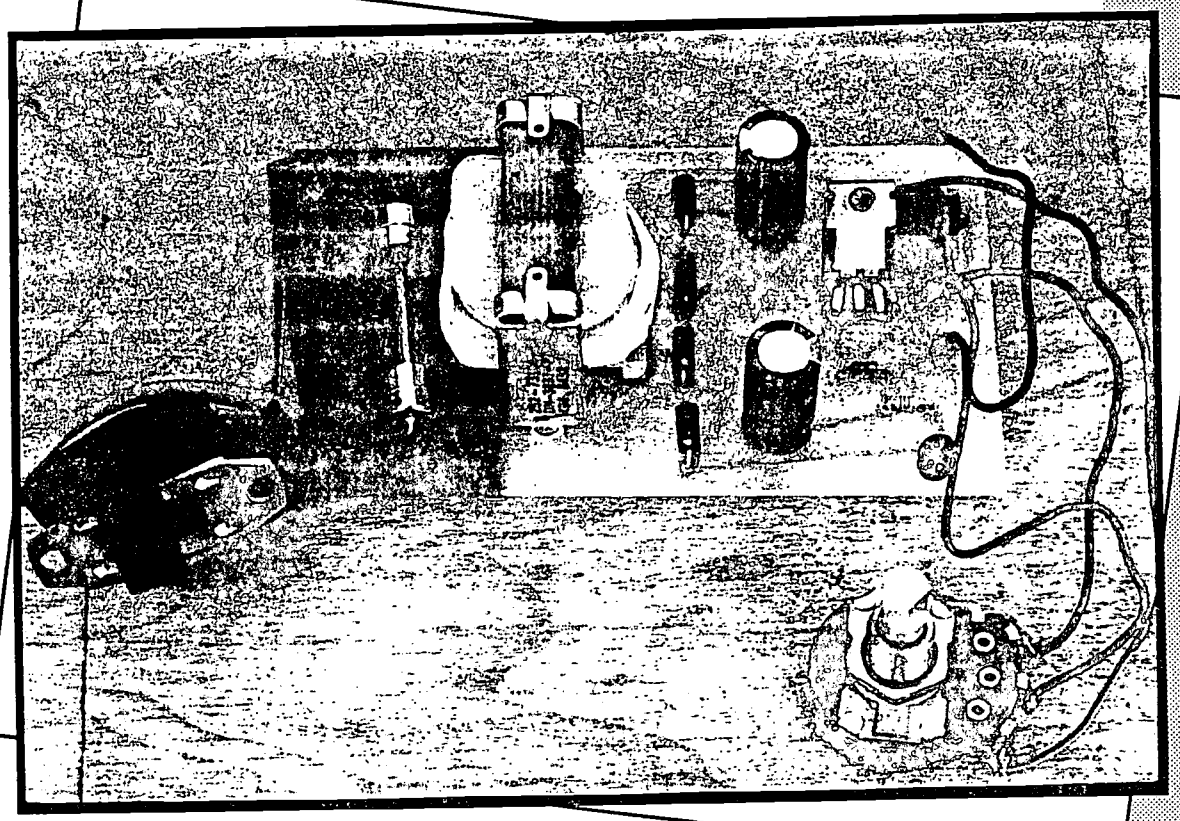
The Sample:

- demonstrates that students are able to use materials, tools, instruments, and equipment, and follow safety procedures
- shows the students' abilities to research and design a working circuit as members of a team
- shows that students arrived at an appropriate conclusion by building a working model.

Parts List and Block Diagram

C1 - 2000 TO 3000 uF Capacitor
C2 - 100 uF Capacitor
C3 - .1 uF Capacitor
D1 - D4 - 1N4003 Diode
IC1 - LM309K Regulator
P1 - AC Line cord
R1 - 470 Ω Resistor
R2 - 5KΩ Potentiometer
S1 - SPST Slide Switch
T1 - 117V to 18 - 22V at 1A.





Standard 3b—Career Majors: Human and Public Services

Core

Context

A home economics student had to prepare a resume and write a report about a successful job application/ employment experience, using computer technology.

Performance Indicators

Students:

. . .demonstrate effective communication skills needed to meet the expectations of human and public service consumers.

Student Work Sample

RESUME

Liza Jones
555A Computer Chip Road
Anytown, NY
(Telephone Number)

OBJECTIVE
I plan to continue my education working with children as an elementary teacher or as a child psychologist.

EDUCATION
WEST HIGH SCHOOL
Sequences;
3 years in English
3 years in Social Studies
2 years in Spanish
2 years in Math
2 years in Science

PERSONAL/CIVIC
•AIDS Walkathon -Spring 1995
Five mile walk to benefit AIDS research
•Welcome Crew Member 1995
Organized activities for incoming freshman
•Student Council Member 1993-1996
•Homeroom Representative 1995-1996
•In progress of working with Kids Escaping Drugs
Telethon-March 1996

JOB SKILLS
Sales Associate for **Hall's** -Fall 1995
Duties:
- Welcoming customers
- Assisted customers about product information
- Accumulated , organized, and updated reports of all stock
- Worked on an electronic cash register

Associate of **North Americare Park** - formally Pilot Field April 6, 1995 - September 14, 1995
Duties:
- Prepared food of various kinds
- Organized and stocked inventory
- Calculated the stand's productivity
- Served customers
- Cashed out customers

Commentary

The Sample:

- demonstrates the student's ability to write a resume detailing current work experience, skills, abilities, and interests
- is well organized with sufficient supporting detail
- illustrates the student's technical and processing knowledge (e.g., use of spell checks, punctuation, thesaurus, format, and other editorial tools).

Student Commentary on Successful Job Application and Employment

In early December I had an open interview at Media Play. There were several positions open for Christmas help. I decided to take my resume which we had worked on in our Independent Living class.

During the interview, Mike, one of the managers, had asked me to tell him a little about myself. I immediately took out my resume, handed it to Mike and began to talk about myself. I found it very easy to talk about my accomplishments and past experience because of my resume. Mike was very impressed with the organization of my resume. He asked me questions pertaining to my experience and I felt very confident and reassured when answering him.

My resume made me feel relaxed about talking about myself. It was a guideline that I could follow and fall back on if I ran out of things to say, but I never did run out of things to say. There was always something to expand on or something Mike wanted to know more about.

Resumes are great tension releases, everything you need or want to talk about is already pre-thought and well organized. Resumes show that you are confident and well-prepared. Because of my resume I received the job. I would encourage anyone who has a job interview to make up a well prepared resume. It doesn't take very long and it could get you the chance to get your foot in the door and begin a great job. Also, your resume boosts your self-esteem, makes you realize all of your achievements and gives you an opportunity to talk about yourself and overall you feel 100% better regardless if you get the job or not, you feel better knowing all you have done.

Standard 3b—Career Majors: Human and Public Services

Specialized

Context

In this project, students in a human services course invited eighth-grade students to participate in a "shadowing day" to learn what a normal day in high school was like.

Performance Indicators

Students:

. . .demonstrate how to interact effectively and sensitively with others

. . .apply personal and resource management skills.

Student Work Sample

Family & Consumer Sciences Department
Careers in Human Services
Eighth Grade Shadowing Day - 1995
Evaluation Form

Please respond to the following questions regarding eighth grade shadowing day. Please be specific and complete.

1. What did you expect the high school to be like *before* you came to visit on shadowing day?
I wasn't sure.

2. How did you spend your shadowing day? Fill in the chart below:

Period	Escort	Class Visited
1	Lori	Typing
2	Lori	Comp. Room
3	Entire class	CHS-reception
4	Rose	S-H (tour)
5	Rose	Govem.
6 (Lunch)	Rose	French
7	Rose	Creative Express.
8	Lori	Child Phys.

What was your favorite class of the day? Tell why it was your favorite.
My favorite class was Creative Expressions because I got to participate.

What was your least favorite time of the day? Why?
My least favorite was Computer Room, she normally had English, but it was free period. And there was nothing I could do.

Commentary

The Sample:

- demonstrates how the student worked to contribute to a positive high school environment
- shows the students' consideration for the needs of eighth graders in formulating the project
- indicates that responses will be used to set goals for future transition projects.

3. Do you think the shadowing day was a valuable way for you to become more familiar with the high school? Explain.
Yes, I feel more comfortable with the halls, and I know more.

4. How do you think the high school students felt about having you visit? Explain.
They seemed surprised, but they were neat.

How did you feel while you were here? Explain.
I felt comfortable.

5. If we were to plan a shadowing day for future eighth graders, what could we do to make it better? If you have specific ideas, we would appreciate them.
I think that it was fine.

What other types of opportunities could the high school offer to make it easier for you to come here next year?
Have more shadowing days.

6. What are your impressions of the high school now that you have spent an entire day here?
It's not as big.

7. Do you have more questions about high school life? Please write them in the space below. Students in *Careers in Human Services* will respond to each question you have, and send the answers to you in your homeroom.

THANK YOU FOR PARTICIPATING IN
EIGHTH GRADE SHADOWING DAY!
WE'LL SEE YOU IN THE FALL.

Experiential

Student Work Sample

Context

Students in an eleventh-twelfth-grade independent living class were asked to plan a hands-on activity which involves working with growing children to produce a collaborative project. This activity, called "Stone Soup," gives high school students the opportunity to communicate with and nurture young children.

Performance Indicators

Students:

. . .demonstrate effective communication skills needed to meet the expectations of human and public services consumers

. . .understand the process of human growth and development and its influence on client needs

. . .demonstrate how to interact effectively and sensitively with others

. . .solve problems, set goals, and make decisions in order to provide services to best meet the needs of others.

I learned that teaching is not only helping students learn, but also dealing with their everyday problems. Teaching is a very strenuous job. It is interesting, fun and exciting, yet it is also very frustrating and stressful. A teacher must have motivation to help a child and a lot of dedication to his/her job.

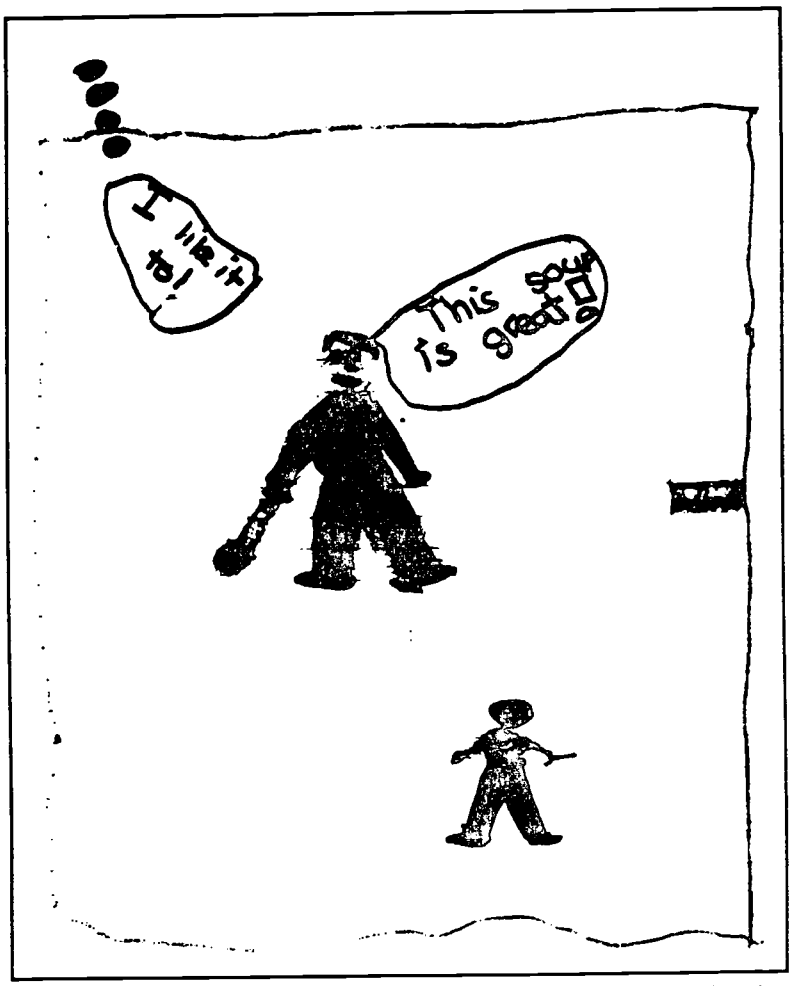
I enjoyed working with the students one on one. I especially enjoyed working with one little boy. Although he was slow in doing his work, knowing that I could help him made me and him feel good. I think the one thing I learned about myself is how attached you become to these students. I feel like they are my own kids and knowing that you can help them is the best feeling in the world.

(work done by an eleventh-grade student)

Commentary

The Sample:

- demonstrates the student's ability to identify strengths and areas for further development in relation to human service career readiness
- demonstrates effective communication skills
- shows that the student helped the younger children exhibit positive behaviors
- illustrates that the student can apply the concept of nurturing to human and public services occupations through volunteer work in a child-related facility
- indicates that contributing to a positive environment enables all groups to be productive and fulfilled.



(work done by an elementary student)

Dear Teacher,

Thank you for letting us do this project with you and your home economics class. We really enjoyed it. I hope you liked it. At first the soup didn't look good. But that was before we cooked it! After we cooked it it looked, smelled and tasted good. Everybody that ate some liked it! I ate three bowls. Tomorrow I am going to have some more. That soup is so good. I could eat a whole pot of it if I had room for it. Did you try any? I'm so glad that I got your recipe. Now I can make it home whenever I want to. I liked everything in the soup except the green beans. But the rest was great!

Core

Student Work Sample

Context

Eleventh-grade students in an Environmental Science class, as a lab exercise, were given a fresh sample of creek water to observe algae growth when phosphate and nitrate compounds were added. This lab activity allowed students to set up and conduct controlled experiments in order to observe and determine what changes occur in pond water as a result of the addition of phosphate and nitrate. Students were assigned to groups of five or six.

Performance Indicators

Students:

. . .demonstrate a solid base of knowledge and skills in natural and agricultural sciences

. . .prepare, maintain, interpret, and disseminate quantitative and qualitative pieces of information relating to the natural and agricultural sciences.

Name _____ LAB-AIDS® INC., 1976 Date _____

DAY	CONTROL #1	#2	#3	#4	#5	#6	#7
1	nothing observed	nothing observed	nothing observed	nothing observed	nothing observed	nothing observed	nothing observed
2	more bubbles than others slight yellow/green	bubbly / yellow/green color slight	Bubbly / yellow green color slight	bubbly / more yellow/ green color	bubbly / more yellow/ green color	bubbly / more yellow/ green color	bubbly / slight yellow/ green color
3	has the most bubbles slightly yellow/ green	Fewer bubbles same color	Fewer bubbles Same color	Fewer bubbles same color	fewer bubbles same color	fewer bubbles Same color	fewer colors same color
4	Same as before	Same as before	Same as before	algae present (most)	algae present (most)	Slight algae present	Slight algae present
5	Still bubbly	Small amount of Slight algae yellow/green color	Small amount of Slight algae yellow/green color	2nd most algae	most algae	Slight algae present	Slight algae present
6	Same as before	Same as before	Same as before	Same as before	Same as before	Same as before	Same as before
7	11	11	11	11	11	11	11
8							
9							
10							

DATA CHART

Commentary

The Sample:

- shows that students set up an experiment and recorded daily observations
- shows that students organized, recorded, and interpreted data of algae growth
- demonstrates that students arrived at an appropriate conclusion
- shows that students were able to work together as members of a team
- demonstrates simple agricultural-related science concepts and interpreting data
- indicates that students understand how nitrates and phosphates affected algae growth.

LAB-AIDS® #20 POLLUTANT EFFECTS OF PHOSPHATES AND NITRATES KIT

Student Worksheet and Guide

Algae, which are normally present in fresh water will undergo a series of changes when phosphate and nitrate compounds are added. These changes can influence the quality of the entire body of water.

This lab activity allows you to set up and conduct controlled experiments in order to observe and determine what changes occur in pond water as a result of the addition of nitrate and phosphate.

You will be assigned to a group of six (6) students and your group will conduct the activity with a sample of fresh water from any nearby waterway or with a sample provided by your instructor.

PROCEDURE:

The following is the procedure each group of six (6) students should follow:

1. The group obtains 7 clear testing containers. Each student is responsible for one testing container.
2. Label the containers with the pressure sensitive labels (one label/container) numbers 1–7. (#1 will be the control.)
3. Place 90 ml of fresh water from any nearby waterway into each testing container (recording the date and location of the collection on the data sheet).
4. Add the nitrate and phosphate "pollutants" to the containers carefully (counting the drops) each day for a period of 10 days according to the schedule to the right.
5. Place a piece of paper towelling on each container and place the containers in a well lighted area.
6. Even though you have set up only one of the containers, you are responsible for recording in the data chart observations of all 7 containers of your group.

Container	Solutions Added Daily
#1	Nothing added – CONTROL
#2	9 drops phosphate solution
#3	18 drops phosphate solution
#4	9 drops nitrate solution
#5	18 drops nitrate solution
#6	9 drops phosphate and nitrate solution
#7	18 drops phosphate and nitrate solution

WATER SAMPLE:

Date collected 3/13/96 Location collected Griffin creek

General appearance of sample: relatively clear

Note in the data chart the appearance of the samples and any changes that may occur in the sample and the control in the appropriate spaces. (Comments may range from "no change" to "cloudier appearence," "green color," or for that matter, any subjective interpretation.)

OBSERVATIONS AND INTERPRETATIONS:

1. How many days did it take to observe changes in the algae content of the control (#1)? _____ in sample #2? 5 : #3? 5 : #4? 4 : #5? 4 : #6? 4 : #7? 4

2. How would you describe the algae content of container #2 as compared to #1 (control) after 10 days? Container #2 has a slight discoloration, no bubbles, and slight algae growth, where as #1 is clear, no bubbles, and no algae. Container #4 has definite algae growth and no bubbles

Container #6 as compared to #1 after 10 days? Container #6 has some algae growth and no bubbles

Container #6 as compared to #2 and #4 after 10 days? Container #6 has more algae growth than container #2, but less than container #4

3. Was the algae content of:

Container #2 similar or different from the algae content of container #3 after only five days? similar

Container #4 similar or different from the algae content of container #5 after only five days? similar

Container #6 similar or different from the algae content of container #7 after only five days? similar

4. What factors may have contributed to your observations? The plastic sheet magnifying the light.

Name _____ Date _____

Standard 3b—Career Majors: Natural and

Specialized

Context

This ninth-grade report was prepared in response to a new high school FFA program called "Adopt-A-Classroom." The purpose of the program is to teach elementary students about various aspects of agriculture. High school FFA members come into individual classrooms each month to teach students about agricultural-related activities.

Performance Indicators

Students:

. . .demonstrate a solid base of knowledge and skills in natural and agricultural sciences

. . .prepare, maintain, interpret, and disseminate quantitative and qualitative pieces of information relating to the natural and agricultural sciences.

Student Work Sample

Do Worms Really Eat Garbage?

Do worms really eat my garbage? Yes, they do and a whole lot more. They can take decaying organic material such as leaves and wood, and turn it into a nutrient-rich soil superb for house and vegetable plants. This is the age of organics and earthworms can be a beneficial part of our lives.

Before we begin, I would like to give you two vocabulary words that will make the understanding of my presentation easier. They are "vermicomposting" and "worm castings." Vermicompost is a more general term than worm castings. A casting is the material deposited after it's moved through the worm's digestive tract. Vermicompost also contains worm castings, but also consists of partially decomposed bedding and organic waste.

Let's now begin with the two different species of earthworms. They are the red-worm and nightcrawler. Redworms are the best to use in a home vermicomposting system for a number of reasons. They produce large amounts of organic material in their natural habitats of manure, compost piles, and decaying leaves. They also reproduce well in small, confined areas. Some common names you may have heard of for the redworm are "manure worm," "red wiggler," or "red hybrid." The scientific name for the redworm is Eisenia foetida. The other worm is called the nightcrawler. It is quite different from the redworm. The scientific name for it is Lumbricus terrestris. You may have heard it referred to as the rainworm or dewworm. This species is by far the most studied of the 3000 species found on our planet. The nightcrawlers are not said to be a very good worm for a home vermicomposting system for a number of reasons, but I have successfully raised them for about 6 months now and they are actually doing better than my redworms. When you see glops of coiled dirt on the ground, these are the castings and where the entrance is to their burrow. Nightcrawlers aid greatly in soil fertility, aeration, and water retention.

To me, the life cycle of the earthworm is very interesting. Worms are hermaphrodites, but need another to reproduce with. After the two worms have bred, they each form a swollen region near their heads. They soon shed this and each region tapers off to be about 1/8" inch long. These are called cocoons. From each cocoon, two or three baby worms hatch and look like white wriggling threads. Over the next two months, the young worms will eat and grow, and then in about two months, they will reach sexual maturity where they can breed and repeat the cycle.

When performing life cycles, different worms prefer different containers and beddings. If you're using redworms, they like a shallow, large surface container. It should have a large surface area because redworms tend to be surface feeders. It should be shallow, eight inches or less, because the bedding could squeeze the air

out of the bottom layers and develop an awful smelling, anaerobic condition. You need an aerobic environment where oxygen is present throughout the bedding. Oxygen is needed not only for the worms, but also for the millions of microorganisms that aid in the breaking down of food wastes.

In your container, the worms need a bedding that they can move freely through. After a while, all the bedding will be turned to worm castings. Some of the best types of beddings for redworms are shredded paper, manure, leaf mole and peat moss. I use a 50/50 blend of machine-shredded paper and peat moss. For redworms, it is not good to use soil or dirt because redworms are naturally found in decaying vegetation such as rotting logs, manures, and fallen leaves.

Next, we will discuss the types of food redworms will eat. They absolutely love vegetable wastes such as apples, coffee grounds, corn meal, breads, cucumbers, and many more. You may have noticed there is no meat on my list. Rotting meat can produce foul-smelling odors. Mice and rats may also go after the meat, and even eat your worms! Worms will eat meat, but it takes them quite a while.

Never use non-biodegradable structures such as plastics, aluminum foil, and glass because they can be harmful both to you and to your worms. When burying food, you can bury it many different ways. I dig trenches across the width and down the length of the worm box. After you have placed the garbage in the trenches, cover it up; the worms will find it. Be careful not to add too much food or the worms and microorganisms will not be fast enough to eat it all, causing odor. If you don't overload the system, the odor will be very low or not even there. My vermicompost actually smells kind of sweet!

When composting with worms, you have one of three goals. They are to produce fishing worms, worm castings for plants or a continuous supply of fishing worms and vermicompost. I am a "middle-of-the-roader". About every four months, I prepare fresh bedding and separate the worms from the old bedding.

Now, I shall discuss adding the vermicompost and castings to plants. When using vermicompost, use sparingly and selectively. It is loaded with humus, worm castings, and decomposing matter. Use it in the bottom of holds when planting vegetables in your garden, or as a topdress on houseplants and vegetables. When using worm castings, you should be careful not to add too much to one plant because all the minerals present may turn to salt and inhibit the growth of the plant. Studies have shown that a diluted mix or worm castings with peat moss and perlite and better for plants than straight castings or straight peat moss. The plants with the three-part combination appeared to be more lush, and their growth was far more vigorous.

Earthworms play an important role in turning decaying organic material into a fertile soil. You may not see them at work, but they're there. The next time you get ready to step on one or put it on a hook, I'll bet you'll think twice about the value of earthworms!

Thank you! Are there any questions?

Commentary

The Sample:

- demonstrates the student's ability to communicate, orally and in writing, and work with younger students in an agricultural experience program
- shows the student's ability to conduct research for an extensive report
- indicates the student's knowledge of food waste composting, including the process called vermiculture.

Standard 3b—Career Majors: Natural and

Experiential

Student Work Sample

Context

A student in an agriculture education class conducted an experiment to determine if passing air through a high-voltage current will increase nitrate levels in the soil. The high-voltage current was created by using graphite electrodes to simulate lightning and a fan and sprinkler system to simulate wind and rain.

Performance Indicators

Students:

. . .demonstrate a solid base of knowledge and skills in natural and agricultural sciences

. . .demonstrate the ability to use technology to assist in production and distribution of food goods and services of today's agricultural industries

. . .prepare, maintain, interpret, and disseminate quantitative and qualitative pieces of information relating to the natural and agricultural sciences.

Applicant's Story: Indicate pertinent information relative to your agriscience project. Summarize how you selected your project, your personal management decisions, accomplishments, failures, any unusual events or circumstances affecting this enterprise and your current status and future goals.

Upon reading an article in our local newspaper in which David Mengel, Purdue University professor of agronomy, claimed that lightning triggers plant growth through converting nitrogen into ammonia, I began to wonder about other positive effects that lightning might have on the soil and plant growth. After much research on the subject, I came to the conclusion that the chemical reaction that lightning produces in the atmosphere could possibly be replicated in a controlled environment, and thus raise the nitrate level in the soil which would also stimulate plant growth under proper growing conditions.

After researching the subject, I began formulating designs for the miniature greenhouses. I determined that I would test the nitrate level and pH of the soil, runoff water, and incoming water. I decided to run my tests weekly and monitor the plants each day. I developed a chart to record my data on. I chose a fast growing corn for my experiment and determined the frequency of the electrodes and precipitation.

The data that I recorded showed the experiment plants that were exposed to electrified air, had consistently higher nitrate levels in the soil and water, which supported my hypothesis. Although the nitrate levels were higher in the experiment, the control plants had a healthier appearance. This may have been due to a lower temperature in the experiment as a result of venting the experiment outside the greenhouse and the control into the greenhouse, to prevent the airflows from mixing and being pulled back into the control. The frequency of the precipitation provided by the sprinklers had to be adjusted because the plants were becoming oversaturated. Initially the sprinklers were turned on with the electrodes in order to bring the electrified air into the soil.

Commentary

The Sample:

- demonstrates the student used learned knowledge on the natural process of nitrogen fixation by lightning to develop and conduct an extensive experiment to test a hypothesis related to soil nitrate levels
- shows the student applied technological knowledge and skills
- indicates the student applied various core- and specialized-level information management/ communications knowledge through a laboratory simulation.

The Electric Greenhouse

Abstract

The "Electric Greenhouse"
The Effect of Nitrogen Fixing Lightning on Soil Nitrate Levels

Date: March - 1995

Purpose Statement: The purpose of this study is to determine whether or not passing air through a high-voltage current, created by using graphite electrodes to simulate lightning and a fan and sprinkler system to simulate wind and rain, will increase nitrate levels in the soil.

Hypothesis or Question: Will the natural process of nitrogen fixation by lightning be duplicated in an enclosed environment by passing air through a high-voltage current and simulating precipitation and wind with a sprinkler and fan result in higher soil nitrate levels?

Type of Research: Experimental

Population or Sample Used: Pioneer variety corn was grown in a mixture of 2/3 sand and 1/3 Hyponex potting soil. The soil was tested for nitrate and pH levels weekly. The nitrate levels and pH of the runoff and incoming water were also measured weekly for a total of 7 weeks.

Findings: The nitrate levels of the experimental plants were consistently higher than those of the control in both the soil and water. At one point the soil nitrate level of the experiment was higher than the starting point. The pH level showed little variance. The plants in the control had a healthier appearance than the experimental although they were about the same height.

Recommendations: Although a control was used, I would recommend a third setup with a known fertilizer value for an additional comparison. I would also recommend starting the experiment with a higher nitrate level. Research should be done to determine the effects of arc length on the process of nitrogen fixing and to measure the effects of the voltage and frequency of the electrodes.

The Electric Greenhouse

nitrate levels measured in parts per million — Pioneer Variety Corn 3861

DATE	TIME	TEMP.	HUMIDITY	PH SOIL for control/experiment	PH WATER Runoff	Nitrate SOIL [illegible]	Nitrate H_2O Runoff	PH H_2O	Nitrate H_2O	Outside weather conditions	Observations
Mon. 1/4/93	2:40	72°	44	7.2	—	35-20-15	—	7.3	8	Cloudy Rain .75" low 36° high 52°	planted 7 3861 corn seeds
				7.2	—	35-20-15	—	7.3	8		planted 7 3861 corn seeds
Tues. 1/5/93										Cloudy rain 1.6" low 25° high 53°	
Wed 1/6/93										Cloudy Snow .25" low 29° high 33°	
Thurs 1/7/93										mostly Sunny low 29° high 36°	
Fri 1/8/93										Cloudy then clear Snow 2" low 11° high 32°	1st plant growth noted - 7 plants / 8 plants
Sat. 1/9/93										Sunny low 1° high 17°	

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