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ACADEMIC EXCELLENCE THROUGH CAREER-TECHNICAL EDUCATION IN RIVERSIDE COUNTY REGIONAL OCCUPATIONAL PROGRAM COURSES

A Project

Presented to the

Faculty of

California State University,

San Bernardino

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

in

Education:

Career and Technical Education

---

by

Dorothy Anne Smith

September 2004

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September 2004

Approved by:

[redacted]

Joseph Scarcella, Ph.D., First Reader

4/14/04

Date

[redacted]

Ronald K. Pendleton, Ph.D., Second Reader

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ABSTRACT

Riverside County schools, along with those throughout the state of California, are facing increased pressure to raise the academic achievement of their students. The No Child Left Behind Act, the California Academic Performance Index, and the California High School Exit Exam are placing demands on schools to bring every student to a higher level of achievement.

This pressure is causing some school districts to drop career-technical education classes in an effort to increase remedial education with no increase in resources. However, career-technical education can actually help school districts in achieving their goals. In California, career-technical education is provided through the Regional Occupational Program (ROP).

The purpose of this project was to develop a handbook for Riverside County ROP instructors that ties common curriculum, specifically Career Preparation Standards, to the California Language Arts and Mathematics standards used as a basis for the California High School Exit Exam. The handbook further strives to give instructors ideas on how to best promote what their programs can provide schools and students.

ACKNOWLEDGMENTS

Joseph Scarcella Ph.D.

Timothy Thelander

Suzanne Potter, Teacher On Assignment

Regional Occupational Program Lead Teachers

DEDICATION

My Family

I appreciate your support and encouragement over the many years I have been in school.

My husband, Don

Without your support, encouragement, and understanding, it would have been a struggle to even achieve my associate's degree. You have always supported anything I wanted to do in every way possible. For this and many other reasons, I love you with all my heart.

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CHAPTER ONE

BACKGROUND

Introduction

In recent years, increased demands have been placed on schools to improve academic achievement. Nation-wide, the impending No Child Left Behind Act is putting pressure on schools to demonstrate that they are meeting the academic needs of all children. In California, the Academic Performance Index and the High School Exit Exam have caused school districts to look for innovative ways to increase the performance of their students (Porter, 2003). With a limited budget, many school districts are cutting programs that they perceive do not increase academic achievement. Career-technical Education administrators and teachers have always felt that their programs add to students' knowledge in basics skills. Now they are being asked to prove this assumption

Purpose of the Project

The purpose of this project was to develop a handbook for Regional Occupational Program (ROP) instructors in Riverside County, California. The handbook matched career preparation standards, common to all Riverside County ROP course outlines, with California's academic standards in

Language Arts and Mathematics. The handbook also included a section to help ROP instructors in promoting their programs with school administrators, counselors, parents, district administrators, and students.

Context of the Problem

The context of the problem was to address the image held by some high school administrators, counselors, parents, students, and school boards that career-technical education programs did not support academic achievement and, therefore, did not assist the schools in meeting their increased needs in this area. Schools were under pressure to increase academic achievement due to the enactment of three pieces of legislation: the impending federal No Child Left Behind Act, the state of California's Academic Performance Index; and California's High School Exit Exam.

Significance of the Project

The significance of the project was that due to the state of California's Academic Performance Index (API) and California High School Exit Exam (CAHSEE), plus the impending federal No Child Left Behind (NCLB) legislation, pressure has been placed on school districts to increase academic achievement. Many school districts were

requesting the removal of career-technical education classes from their campuses to make room for more academic-based classes. Career-technical education helped students, especially those who are typically low achievers, to increase academic achievement through the use of contextual based learning (Parnell, 1999). Therefore, career-technical education supported schools in improving student achievement. The handbook provided Lesson plan(s) for instructors that integrate academic standards into common curricula. The handbook further assisted instructors with methods for promoting the benefits of career-technical education in supporting the school district's goals.

Assumptions

The following assumptions were made regarding the project:

1. It was assumed that a handbook was needed to help Regional Occupational Program (ROP) instructors integrate academics into the common curricula that all ROP instructors are required to teach, specifically career preparation standards.

2. It was assumed that once the handbook had been created, ROP instructors and administrators throughout Riverside County would utilize the handbook to aid in integrating academics into the common curricula.
3. It was assumed that once the handbook had been created, it might be utilized throughout Riverside County to aid ROP instructors and administrators in promoting the fact that career-technical education did aid in increasing academic achievement.

Limitations and Delimitations

During the development of the project, limitations and delimitations were noted. These limitations and delimitations are presented in the next section.

Limitations

The following limitations apply to the project:

1. The Instructor's Handbook, Academic Excellence through Career-Technical Education in Riverside County ROP Courses, was developed for use by Riverside County ROP instructors and administrators.

Delimitations

The following delimitations apply to the project:

1. The Instructor's Handbook, Academic Excellence through Career-Technical Education in Riverside County ROP Courses, may be used by any career-technical education instructor or administrator.

Definition of Terms

The following terms are defined as they apply to the project.

Academic Performance Indicator - "The Academic Performance Index (API) is the cornerstone of California's Public Schools Accountability Act of 1999 (PSAA). The purpose of the API is to measure the academic performance and growth of schools. It is a numeric index (or scale) that ranges from a low of 200 to a high of 1000. A school's score or placement on the API is an indicator of a school's performance level. The interim statewide API performance target for all schools is 800. A school's growth is measured by how well it is moving toward or past that goal. A school's base year API is subtracted from its growth

API to determine how much the school grew in a year." (California Department of Education, 2003a, ¶ 1).

Applied Academics - The presentation of subject matter in a way that integrates a particular academic discipline (such as mathematics, science, or English) with personal workforce applications (Reynolds, 1995).

Career-technical Education (CTE) (formerly Vocational Education) - Any form of education designed primarily to prepare people for socially useful occupations requiring less than a baccalaureate degree and to help practitioners update their knowledge and skills for continuing in occupations that require less than a baccalaureate degree (Goetsch & Szuch, 1985).

Contextual Learning - "According to contextual learning theory, learning occurs only when students process new information or knowledge in such a way that it makes sense to them in their own frames of reference. This approach to learning and teaching assumes that the mind naturally seeks meaning in context--that is, in relation to the person's current environment--and that it does so by searching for relationships that make sense and appear useful" (Center for Occupational Research and Design, 2001, ¶ 5)

High School Exit Exam - The primary purpose of the California High School Exit Examination (CAHSEE) is to significantly improve pupil achievement in public high schools and to ensure that pupils who graduate from public high schools can demonstrate grade level competency in reading, writing, and mathematics. The CAHSEE helps identify students who are not developing skills that are essential for life after high school and encourages districts to give these students the attention and resources needed to help them achieve these skills during their high school years. Beginning in the 2005-2006 school year, no student will receive a public high school diploma without having passed the CAHSEE, as well as having met the district's requirements for graduation (California Department of Education, 2003b).

No Child Left Behind Act - Signed into law on January 8, 2002, this act is designed to change the culture of America's schools by closing the achievement gap, offering more flexibility, giving parents more options, and teaching students based on what works (U.S. Department of Education, 2002a).

Regional Occupational Program - Regional Occupational Programs (also known as Regional Occupational Centers

and Programs) provide upper level high school students (16 years of age) and adults with career and technical education for the purpose of: obtaining workforce skills; pursuing advanced training through postsecondary education; or, upgrading existing skills and knowledge (California Department of Education, 2003c).

ROPERS (Regional Occupational Program Expected Results for Students) - Regional Occupational Program Expected Schoolwide Learning Results were developed specifically for Riverside County Regional Occupational Program to meet the requirements for the Western Association of Schools and Colleges visit in February of 2003. On October 26, 2000, a committee of ROP staff (instructors, student services representatives and secretaries), students and a representative from the business community met to discuss development of our ESLRs (Riverside County Office of Education, 2003).

Vocational-Technical Education - The Perkins act defines vocational-technical education as organized educational programs offering sequences of courses directly related to preparing individuals for paid or unpaid employment in current or emerging occupations

requiring other than a baccalaureate or advanced degree (Office of Vocational and Adult Education, 2002).

Organization of the Thesis

The thesis portion of the project was divided into four chapters. Chapter One provides an introduction to the context of the problem, purpose of the project, significance of the project, limitations and delimitations and definitions of terms. Chapter Two consists of a review of relevant literature. Chapter Three documents the steps used in developing the project. Chapter Four presents conclusions and recommendations drawn from the development of the project. Appendix A of the project consists of a handbook for Riverside Country Regional Occupational Program instructors titled: Academic Excellence Through Career-Technical Education in Riverside County ROP Courses. Finally, the Project references.

CHAPTER TWO

REVIEW OF THE LITERATURE

Introduction

Chapter Two consists of a discussion of the relevant literature. The history and background of federal and state legislation as it affects career-technical education was discussed. The beginnings of the Regional Occupational Program (ROP) in California and Riverside County were covered. Current federal and state legislation and their affect on career-technical education were investigated. The benefits to students and schools of career-technical education were explored. Finally, career-technical education's use of applied academics or contextual learning and the benefits to students were discussed. Information was referenced through such sources as journals, books, Internet web pages, and professional associations.

History of Career-Technical Education

The history of career-technical education in our country provided an understanding of how this sector of our educational system evolved to what is utilized in 2004 for improving the technological skills of high school students and adult learners.

History of Federal Legislation

During the first decade of the twentieth century, fewer than 10 percent of school age children graduated from high school. Many did not see value in continuing their education due to a favorable environment for entering the work force. Approximately 90 percent of the population dropped out of high school, with almost half leaving school before sixth grade (Miller, 1985). In 1914, The Commission on National Aid to Vocational Education found that the public education system was not providing equal opportunities to all children. The commission felt that even though the schools were open to all, they weren't providing for everyone's needs and were planned primarily to serve the needs of those intending to go to college. Miller stated:

> Several additional benefits were expected as vocational education became a part of the system of public education. Not only would schools be meaningful for more students, but education for employment would help extend the years of education, thus increasing the level of citizenship of those persons. (p. 14)

In 1917 The Smith-Hughes Act was passed (Levine, 1965). This act provided a permanent annual distribution of $7,138,331 to the states to pay for career-technical education in agriculture, trades and industry. The Smith-Hughes Act was followed in 1936 by The George-Deen

Act, which authorized continuous annual appropriations for states and territories to develop career-technical education for the same areas as the Smith-Hughes Act and added occupations such as merchandizing. In 1946, the Vocational Education Act, also known as the George-Barden Act, was passed. This act increased the annual amount of money to $29,267,081 and added several new occupational categories. Since the Smith-Hughes Act of 1917, there have been 13 legislative reviews and revisions in career-technical education legislation (Fong, Goodwin, Silverberg, & Warren, 2002). The most recent legislation is the Carl D. Perkins Vocational and Technical Education Act of 1984.

The Carl D. Perkins Vocational and Technical Education Act was first passed in 1984 and reauthorized in 1998 (Association for Career and Technical Education, 2003). The legislation was scheduled for reauthorization in 2003 (Fong et al., 2002). According to California Department of Education [CDE] (2003d, ¶ 1), the purpose of the Carl D. Perkins Vocational and Technical Education Act was to: "...improve vocational and technical education programs. The primary focus is to develop challenging academic standards and promote the development of activities that integrate academic and vocational and

technical instruction." The Office of Vocational and Adult Education (2002) provided the following definition for vocational and technical education as follows:

> The Perkins Act defines vocational-technical education as organized educational programs offering sequences of courses directly related to preparing individuals for paid or unpaid employment in current or emerging occupations requiring other than a baccalaureate or advanced degree. Programs include competency-based applied learning which contributes to an individual's academic knowledge, higher-order reasoning, problem solving skills, and the occupational-specific skills necessary for economic independence as a productive and contributing member of society. (¶ 1)

Funds provided by the Perkins Act were distributed to the states. The states then distributed these funds based on priorities established by its approved plan for career-technical education. According to the Office of Vocational and Adult Education, career-technical education is significant for the following reasons:

1. The United States competes in a global economy. The purpose of the Perkins Act is to prepare a workforce with the academic and vocational skills needed to compete successfully in a world market.
2. Vocational-technical education allows students to explore career options and develop the skills they will need both in school and in the workplace.
3. Vocational-technical education's combination of classroom instruction, hands-on laboratory work, and on-the-job training meets students' different learning styles so that all may learn.

4. Vocational-technical education prepares participants for both postsecondary education and employment.
5. Vocational-technical education prepares individuals for the bulk of America's jobs. In 1996, only about 20% of America's jobs required a four-year college degree. But many jobs required some education beyond high school, often at the community college level. (¶ 4)

The Office of Vocational and Adult Education further stated that vocational-technical education has changed in several ways: (1) it incorporates school-based and work-based learning; (2) postsecondary education is essential for most occupations; (3) it now includes not only high schools but postsecondary education, including universities; and (4) it uses more technology.

History of California State Legislation

According to Appendix A of the CDE Operations Handbook for California's Regional Occupational Centers and Programs (2000), career-technical education in California was first recorded in 1854 with the creation of the Mechanics' Institute. In 1912, the state education agency was reorganized and a position of Commissioner of Industrial and Vocational Education was created. Career-technical education continued to develop and grow in California as federal legislation was enacted. Between 1920 and 1930, enrollment in career-technical education

courses increased seven times. Three areas of courses were offered: agriculture, trades and industries, and home economics. These areas were designated by the federal Smith-Hughes Act.

Three pieces of federal legislation in the 1960s had significant impact on career-technical education in both California and the rest of the nation. The Manpower Development and Training Act of 1962, the Vocational Education Act of 1963, and the Vocational Education Act of 1968 increased funding and expanded the categories of students who could be served by these funds (CDE, 2000). It was during this major growth that California passed legislation that established Regional Occupational Centers and Programs.

History of Riverside County Regional Occupational Program

The County-wide Vocational High School, Senate Bill 1379, of 1963 created Section 7450 of the California Education Code. The stated mission of this bill was in part to:

> ...serve the state and national interests in providing vocational and technical education to prepare students for an increasingly technological society in which generalized training and skills are insufficient to prepare high school graduates for the many employment opportunities which required special of technical training and skills. (CDE, 2000, A-5)

As of 2003, there were 73 Regional Occupational Centers and Programs in California, serving approximately 460,000 students each year. These programs and centers provide high school students and adults with career-technical education that enables them to: "1) enter the workforce with skills and competencies to be successful; 2) pursue advanced training in higher educational institutions; or 3) upgrade existing skills and knowledge" (CDE, 2003c, ¶ 1).

The first Regional Occupation Program in Riverside County was formed in 1971 by an agreement between the Hemet, San Jacinto, and Moreno Valley School Districts. In 1972, a countywide Regional Occupational Program was formed by the Riverside County Superintendent of Schools that all the school districts in the county supported (Heil, 1993). During the 2001-2002 school year, the Riverside County Regional Occupational Program served approximately 23,161 students at 62 locations (Long, 2003). As of 2004, courses are offered in 46 career/vocational subject areas (Schnack, 2004).

Factors Affecting Career-technical Education in California

"At the high school level, participation in vocational education is an elective choice that faces

increasing pressure from emphasis on academic improvement and testing" (Fong et al., 2002, p. xxiii). There are three major pieces of educational legislation that are affecting career-technical education in California: The Federal No Child Left Behind Act, the California Performance Accountability Program, and the California High School Exit Exam.

Federal No Child Left Behind Act

President George W. Bush had the following comments regarding the No Child Left Behind Act: "These reforms express my deep belief in our public schools and their mission to build the mind and character of every child, from every background, in every part of America" (U.S. Department of Education, 2002b, ¶ 1). According to the U.S. Department of Education (2002c) the purpose of the No Child Left Behind Act is to close the achievement gap among all children by incorporating accountability, flexibility, and choice in schools. Kucerik (2002) discusses the fact that the No Child Left Behind (NCLB) Act covers many facets of the education system, but the testing and accountability which will be used to measure academic achievement of students will likely have the greatest impact. The Act requires that each state develop challenging content and performance-based standards in

reading and Mathematics. The states must then implement annual testing to determine whether the standards are being met. The states must also report the results of these tests to the public and identify the results by race, ethnicity, disability, and limited English proficiency. Phelps (2002) states that:

> The goal that all students will be able to perform at proficient levels by 2014 means that states and locals will be intensely focusing on academic achievement. Some have forecasted that this focus on academics will result in a reduction of secondary CTE programs. In some states, we are already seeing increased academic courses for graduation, therefore reducing the time available to students to take career-technical courses. This falsely assumes that simply taking more academic courses will increase academic achievement. It also reinforces the unfortunate belief that students must take career-technical or academic education. (p. 6)

California's Performance Accountability Program

California's Education Code, Section 52051-52052.5, effective July 1, 1999, established the Public School Performance Accountability Program (State of California, Education Code, nd). This is a three-part legislation that includes the Academic Performance Index (API), the Immediate Intervention/Underperforming Schools Program, and the Governor's High Achieving/Improving Schools Program. The stated purpose of the API is "...to measure the performance of schools, especially the academic

performance of pupils, and to demonstrate comparable improvement in academic achievement by all numerically significant ethnic and socioeconomically disadvantaged subgroups within schools" (Section 52052, California Education Code, nd). The API is used to measure a school's progress in improving achievement for all students in general, and minority populations specifically. The Superintendent of Public Instruction, together with the State Board of Education, establishes annual percentage growth targets for all schools. Those schools meeting their growth target will be eligible for rewards through the Governor's Performance Award Program (Section 52052(C)d, California Education Code, nd).

According to Porter (2003) when writing for the online California Career Education Association Journal, the introduction of the Academic Performance Index is placing increased pressure on schools to ensure that students are taking courses that develop their academic skills. She further stated: "In some districts, this has resulted in replacing electives with remedial courses and/or increasing academic subject requirements for students" (Porter, 2003, ¶ 1).

California High School Exit Exam

California Education Code, Section 60851 (1999) states: "Commencing with the 2003-04 school year and each school year thereafter, each pupil completing grade 12 shall successfully pass the exit examination as a condition of receiving a diploma of graduation or a condition of graduation from high school." In July of 2003, the California State Board of Education postponed implementation of the High School Exit Exam for two years. The class of 2006 will now be the first class required to pass this exam to receive a high school diploma (CDE, 2003b).

Section 60853(b) of the California Education Code urges: "...a school district consider restructuring its academic offerings reducing the electives available to any pupil who has not demonstrated the skills necessary to succeed on the exit examination ..." and Section 60853(c) states: "...school districts are encouraged to use existing resources to ensure that all pupils succeed."

Porter (2003) states that schools do not always understand how ROCP courses can and do help students improve their academic skills. This lack of understanding causes counselors to remove academically challenged students from elective classes and to place them in

remedial classes in an effort to improve their academic success.

Benefits of Career-technical Education

The literature supports many benefits to schools and students from well-run career-technical education programs. These include three major benefits that were discussed in this paper: increased academic achievement, increased enrollment in post-secondary education, and reduced dropout rates.

Increased Academic Achievement

"Quality secondary vocational courses increase students' academic achievement" (Bottoms & Makin, 1998, p. 1). Bottoms further states that schools involved in the High Schools That Work program are finding that students who take an upgraded academic curriculum and a career concentration have higher achievement in reading, Mathematics, and science than those who have taken only the upgraded academic curriculum.

High Schools That Work is a school improvement program designed by the Southern Regional Education Board (SREB). The Southern Regional Education Board is the first interstate consortium for education in the United States. It was created in 1948 by 16 Southern states. The board's

purpose was to help government and education leaders work together with the goal of improving education and, thereby, the social and economic life of the region (Southern Regional Educational Board, 2003). Wonacott (2002a) writes that the curriculum for High Schools That Work calls for students to take a challenging course of study that includes two parts. The first part is an upgraded academic core including college-prep or honors courses. The second part includes career-technical education courses. The Southern Regional Education Board has documented achievement gains by career-technical education students who have participate in High Schools That Work.

Mitchell (2002) conducted an accountability research study of outcomes for California's Regional Occupational Centers and Programs (ROCPs). He found eight positive indicators. One of these was high school grade point average gains among students participating in career-technical education. He stated:

> On average, these students enter ROCP training programs with academic records that are well below those of a Control Group of their high school peers. Nevertheless, by the time they complete 12th grade they have raised their grade point averages by more than three-tenths of a point - a full one-tenth of a point more than a Control Group of similar students who did not take ROCP courses. (p. i)

Increased Enrollment in Post-Secondary Education

According to the U.S. Department of Education (Fong et al., 2002), there is evidence that students taking career-technical education courses are doing so to explore different careers for the purpose of selecting a college major.

Ries (2000) states that postsecondary enrollment rates have been raised at High Schools That Work sites. These sites partner academic classes with career-technical classes. Ries further states that students in these programs see that what they are learning is relevant to the skills they will need in future jobs and in postsecondary education, and that a strong career concentration encourages them to attend postsecondary education.

According to Lawrence (1997), career-technical education schools have broadened their curriculum so that students are no longer studying narrowly defined occupations. He further stated that many career-technical students go to college instead of directly to the work place.

Reduced Dropout Rates/Improved Attendance Rates

There is substantial proof that career-technical education can play a significant role in keeping students

in school, particularly those students who are at risk of dropping out (Wonacott, 2002b). After reviewing multiple studies, Wonacott states: "...CTE actually does play a role in reducing dropouts, especially among students who are at high risk of dropping out" (p. 4).

Ries (2000) noted that attendance and graduation rates had risen and dropout rates had fallen at High Schools That Work sites.

Mitchell (2002) stated that the rate of absenteeism for students in Regional Occupational Centers and Programs (ROCPs) is very different from the control group's absence rate. In 10th grade, ROCP students had a much higher rate of absenteeism than the control group. By 12th grade, the absence rate was 9.19 for ROCP students, while the control group's absence rate was 11.62 days per year.

Contextual Learning/Applied Academics

Cutsall (2003) declared that the purpose of career-technical education is to help students, workers and lifelong learners, regardless of age, to fulfill their working potential. To do this it must teach students academics that are relevant to the real world. This is referred to as contextual learning.

Parnell (1999) stated that career and technical teachers are experienced at teaching through the use of

contextual learning. He further stated: "Contextual learning and applied academics may be the answer to reaching all students and helping them excel in school and in their careers" (¶ 1).

According to Reynolds (1995), theorists in education have long believed that students should take a more active role in the learning process. By their very nature, career-technical education courses promote this practice. Porter (2003) maintains that Regional Occupational Centers and Programs (ROCP) have shown students how the academic skills they learn in school will apply to the real world through contextualized learning. Porter further states: "Career-technical courses that tell students what they need to know, teach them the skills in the context of a career choice, and assess them for mastery of required academic skills can be the best answer for students who have not succeeded previously in academic classes" (¶ 8).

Parnell (1999) describes a research project conducted by Oregon State University in which five high schools participated. The objective of the study was to incorporate contextual teaching techniques and contextual learning courses in the five schools. The schools were given funding and technical assistance to develop the curriculum.

The results of this research were measured in two ways: pre- and post-project feedback from teachers and students and pre- and post-project standardized testing. While the students were not overwhelmingly supportive of contextualized learning, there were some positive comments (Table 1).

Table 1. Contextual Learning Research Project (Student Responses)

Questions		Agreed	Disagreed	Didn't Know
I think I learned more in my contextual class than if the subject had been taught in the normal way	Physics	11	0	4
	English	15	5	2
If given a choice, I would take a contextual class versus a normally taught class.	Physics	8	1	6
	English	14	2	5
I did better in my contextual class than I normally do in my school classes.	Physics	3	2	10
	English	9	7	6

The teacher surveys pointed out advantages and disadvantages of contextual learning (Table 2).

Table 2. Contextual Learning Research Project (Teacher Responses)

Advantages	Disadvantages
• Engages and motivates students • Improves student productivity • Does not require traditional texts • Improve attendance • Increases teacher and student energy levels	• Requires more planning time • Difficult to evaluate or measure effectiveness right away • Difficult to cover all the required material

The most promising aspect of this research was the test scores which showed averages scores on all tests to be as good as or better than the national average (Parnell, 1995).

Summary

The literature important to the project was presented in Chapter Two. The history and background of federal and state legislation as it affects career-technical education was discussed. The history of the Regional Occupational Program (ROP) in the state of California, and specifically in Riverside County, was covered. The current federal and state legislation, and their affects, on career-technical education were investigated. Benefits to students and schools of incorporating academics and career-technical

education were explored, specifically increased academic achievement, increased enrollment in postsecondary education, improved attendance rates, and lower drop out rates. Finally, the benefit of applied academics or contextual learning was examined. Information was referenced through such sources as journals, books, Internet web pages, and professional associations.

CHAPTER THREE

METHODOLOGY

Introduction

Chapter Three documented the steps used in developing the project. Specifically, the development of the curriculum was presented; the resources used were detailed; the methods of content validation were listed; the population served was discussed; and the outline for the pamphlet was introduced.

Development

This curriculum handbook was developed to align the Riverside County Regional Occupational Program (ROP) Career Preparation Standards with selected California Academic Standards for Language Arts and Mathematics, with particular emphasis on those standards addressed in the California High School Exit Exam. The ROP Career Preparation Standards cover seven areas which were included in all county ROP course outlines, regardless of career area. These standards, shown in Table 3, were adopted from standards developed by the California Association of Regional Occupational Centers and Programs (California Association of Regional Occupational Centers and Programs, 2001). They met skills identified as

Table 3. Riverside County Regional Occupational Program

Common Career Preparation Standards

Standard	Description of Student Behavior
Personal Skills	Designs ongoing personal skill development for improved employability, including maintaining a positive attitude, honesty, self-confidence, time management, and other positive traits.
Interpersonal Skills	Utilizes effective interpersonal skills, including conflict resolution and negotiation, while effectively accommodating group dynamics.
Academic Skills	Employs appropriate academic skills, critical thinking, and problem-solving for the workplace.
Effective Communication	Uses the principles of effective communication in written and verbal communications
Safety Issues	A. Recognizes occupational safety hazards, demonstrates appropriate prevention measures, and observes safety rules for the work environment.
	B. Successfully completes an occupational specific safety assessment.
	C. Identifies local Homeland Security and first responder agencies and methods of contact for each.
	D. Creates a personal home evacuation and emergency preparedness plan
	E. Recalls the emergency procedures for the school and/or workplace.
Career Paths	A. Identifies occupational career paths of interest and models effective strategies for obtaining employment.
	B. Composes accurate, effective job acquisition documents, including a job application, resume and cover letter; and employs appropriate follow-up techniques.
	C. Practices effective interviewing techniques.
	D. Recognizes behavior and attitudes that contribute to employee retention and promotion, and models appropriate worksite attire and appearance.
	E. Chooses and employs current technologies for the job search and application process.
Technology	Identifies, utilizes and adapts to changing technology.

necessary for workforce preparation by the Secretary's Commission on Achieving Necessary Skills (SCANS).

Resources and Content Validation

A variety of resources were used to gather and develop the lessons in the handbook, including: input from Riverside County Regional Occupational Program instructors and administrators; Internet searches; educational Web sites; and Lesson plan(s) designed specifically for this project. The content of these lessons was validated by comparing the lesson objectives with the California Language Arts and Mathematics standards. Particular attention was paid to those standards which are incorporated in the California High School Exit Exam. The lessons were reviewed and critiqued by the Riverside County Regional Occupational Program Lead Teachers and Teacher-on-Assignment for further validation.

Design

The handbook was designed to assist Riverside County Regional Occupational Program (ROP) instructors in delivering lessons that met both the ROP Career Preparation Standards and the California standards for Language Arts and Mathematics. The handbook was further designed to provide ideas to instructors on how to promote the fact that they teach to the California standards.

Because schools face increased pressure to improve academic achievement, ROP must take an active role to insure that school boards, administrators, parents, and counselors understand how ROP programs assist high school students to improve their academic achievement and meet the goals of secondary schools and school districts.

Each of the seven ROP Career Preparation Standards is addressed in the handbook with at least one sample lesson plan that provides the following: (1) major area; (2) lesson title;(3) key concepts or objectives; (3) career preparation standards (4) academic standards; (5) ROPERS; (6) teacher activities; (7) student activities; and (8) assessment.

Handbook Content

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    - A. What is the purpose of this handbook?
    - B. No Child Left Behind Act
    - C. California Academic Performance Index
    - D. California High School Exit Exam
    - E. Implications for Career-technical Education
3. Lesson Plan Design
4. Career Preparation Standards

A. Career Preparation Standard 1 - Personal skills

   i. Description

   ii. Lesson plan(s)

B. Career Preparation Standard 2 - Interpersonal skills

   i. Description

   ii. Lesson plan(s)

C. Career Preparation Standard 3 - Academic skills

   i. Description

   ii. Lesson plan(s)

D. Career Preparation Standard 4 - Effective communication

   i. Description

   ii. Lesson plan(s)

E. Career Preparation Standard 5 - Safety issues

   i. Description

   ii. Lesson plan(s)

F. Career Preparation Standard 6 - Career paths

   i. Description

   ii. Lesson plan(s)

G. Career Preparation Standard 7 - Technology

i. Description

ii. Lesson plan(s)

H. Promoting your program

i. Goals of Public Relations

ii. Who Do You Want to Reach?

iii. Methods for Getting Out the Word

5. California High School Exit Exam Language Arts Blueprint

6. California High School Exit Exam Mathematics Blueprint

7. References

8. Resources

Population Served

The project was developed for use by Riverside County Regional Occupational Instructors who must all teach certain common curriculum in their courses, specifically: Regional Occupational Program Expected Student Learning Results, Career Preparation Standards, and Orientation to the Regional Occupational Program. The project provided Lesson plan(s) for teaching Career Preparation Standards that meet the California academic standards in the Language Arts and Mathematics area. This project further

served the students who participate in Regional Occupational Program classes and the school districts by aiding in the increased academic achievement of the students served.

The focus of this project was to address the need for Regional Occupational Programs to contribute to increased academic achievement in the schools by teaching within the California standards for Language Arts and Mathematics, especially those standards used in the California High School Exit Exam.

Summary

The steps used to develop this project were outlined. The target populations for this project are Regional Occupational Program (ROP) instructors and students enrolled in ROP classes. Additionally, school administrators and counselors who are interested in raising the academic achievement and pass rates for students in their school are included in the target population. The curriculum development process including curriculum structure and content was presented.

CHAPTER FOUR

CONCLUSIONS AND RECOMMENDATIONS

Introduction

Included in Chapter Four was a presentation of the conclusions gleaned as a result of completing the project. Further, the recommendations extracted from the project are presented. Lastly, the Chapter concludes with a summary.

Conclusions

The conclusions extracted from the project are as follows:

1. Recent federal and state legislation, namely the No Child Left Behind Act, the California Academic Performance Index, and the California High School Exit Exam, have placed pressure on school districts and administrators to increase academic achievement of secondary school students.
2. Regional Occupational Programs (ROP), through the use of contextual learning/applied academics aid in increasing the academic achievement of students, especially those students who are not usually high achievers.

3. School districts and administrators are not always aware that ROP programs can assist in reaching their goals of increasing academic achievement.

Recommendations

The recommendations resulting from the project are as follows:

1. It is recommended that the project handbook be provided to all Regional Occupational Program (ROP) instructors to aid them in addressing the California standards in their classroom and in promoting their programs.
2. It is recommended that the project handbook be provided to ROP administrators and student service representatives.
3. It is recommended that the project handbook be provided to school administrators and counselors to make them aware of some of the many lessons taught in an ROP classroom and how these lessons incorporate California Language Arts and Mathematics standards.
4. ROP instructors, administrators, and student service representatives should promote their

programs so that school boards, school administrators, and counselors understand how the curriculum assists them in reaching their goals.

Summary

Chapter Four reviewed the conclusions extracted from the project. Lastly, the recommendations derived from the project were presented.

The recommendations will be forwarded to the Riverside County Regional Occupational Program director and administrators for their review.

APPENDIX

ACADEMIC EXCELLENCE THROUGH CAREER-TECHNICAL EDUCATION IN RIVERSIDE COUNTY ROP COURSES

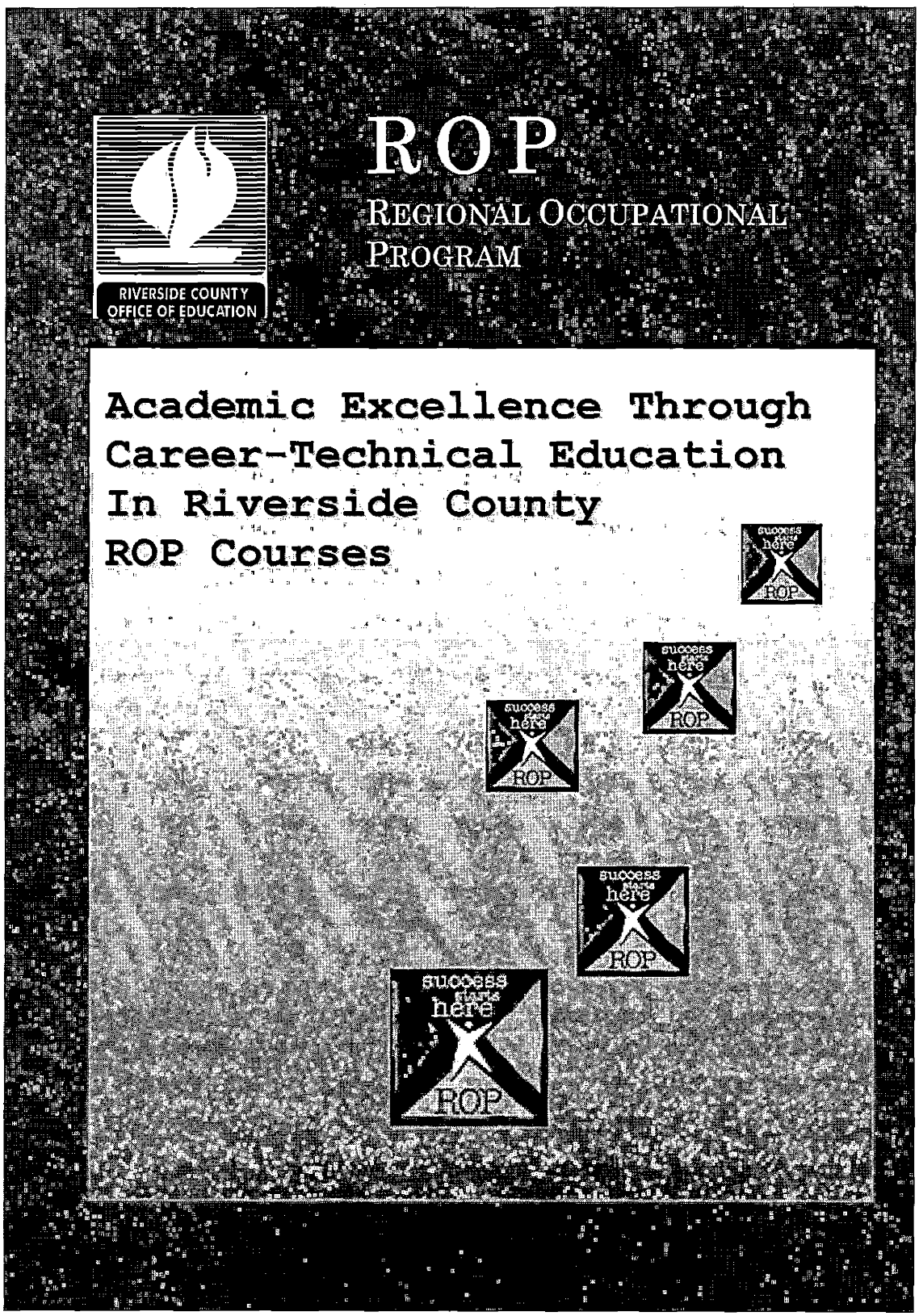

RIVERSIDE COUNTY
OFFICE OF EDUCATION
ROP
REGIONAL OCCUPATIONAL
PROGRAM
Academic Excellence Through
Career-Technical Education
In Riverside County
ROP Courses
success starts here
ROP

TABLE OF CONTENTS

INTRODUCTION

What is the purpose of this handbook?

In recent years, three pieces of legislation have placed pressure on schools throughout California: The Federal No Child Left Behind Act, the California Academic Performance Index, and the California High School Exit Exam. In some cases, this pressure has caused schools to eliminate elective classes, including Regional Occupational Programs, to make room for remedial classes. The fact is, however, that career-technical education can help schools to meet their academic goals. The following paragraphs provide some background information on the legislation affecting secondary education in California and, therefore, our programs.

No Child Left Behind Act

According to the U.S. Department of Education (2002) the purpose of the No Child Left Behind Act is to close the achievement gap among all children by incorporating accountability, flexibility, and choice in schools.

The Act requires that each state develop challenging content and performance-based standards in reading and Mathematics. The states must then implement annual testing to determine whether the standards are being met. The states must also report the results of these tests to the public and identify the results by race, ethnicity, disability, and limited English proficiency.

California Academic Performance Index

California's Education Code, Section 52051-52052.5, effective July 1, 1999, established the Public School Performance Accountability Program (State of California, Education Code, nd). This three-part legislation includes the Academic Performance Index (API), the Immediate Intervention/Underperforming Schools Program, and the Governor's High Achieving/Improving Schools Program. The stated purpose of the API is "...to measure the performance of schools, especially the academic performance of pupils, and to demonstrate comparable improvement in academic achievement by all numerically significant ethnic and socioeconomically disadvantaged subgroups within schools (Section 52052, California Education Code, nd)." The API is used to measure a school's progress in improving achievement for all students in general, and minority populations specifically. The Superintendent of Public Instruction, together with the State Board of Education, establishes annual percentage growth targets for all schools. Those schools meeting their growth target will be eligible for rewards through the Governor's Performance Award Program (Section 52052(C)d, California Education Code, nd).

California High School Exit Exam

California Education Code, Section 60851 states: "Commencing with the 2003-04 school year and each school year thereafter, each pupil completing grade 12 shall successfully pass the exit examination as a condition of receiving a diploma of graduation or a condition of graduation from high school." In July of 2003, the California State Board of Education postponed implementation of the High School Exit Exam for two years. The class of 2006 will now be the first class required to pass this exam to receive a high school diploma (CDE, 2003).

Section 60853(b) states: "...a school district consider restructuring its academic offerings reducing the electives available to any pupil who has not demonstrated the skills necessary to succeed on the exit examination ..." and Section 60853(c) states: "...school districts are encouraged to use existing resources to ensure that all pupils succeed."

Implications for Career-technical Education

When discussing the implications of the No Child Left Behind Act, Phelps (2002) states that:

> The goal that all students will be able to perform at proficient levels by 2014 means that states and locals will be intensely focusing on academic achievement. Some have forecasted that this focus on academics will result in a reduction of secondary CTE programs. In some states, we are already seeing increased academic courses for graduation, therefore reducing the time available to students to take career-technical courses. This falsely assumes that simply taking more academic courses will increase academic achievement. It also reinforces the unfortunate belief that students must take career-technical or academic education" (p. 6)

According to Porter (2003) when writing for the online California Career Education Association Journal, the introduction of the Academic Performance Index is placing increased pressure on schools to insure that students are taking courses that develop their academic skills. She further stated: "In some districts, this has resulted in replacing electives with remedial courses and/or increasing academic subject requirements for students" (Porter, 2003, ¶ 1)

Porter (2003) further states that schools do not always understand how ROCP courses can and do help students to improve their academic skills. This lack of understanding causes counselors to remove academically challenged students from elective classes and places them in remedial classes in an effort to improve their academic success.

In summary, three pieces of legislation are forcing schools to increase the academic achievement of their students. Some schools do not understand how ROP classes can help them in reaching this goal.

This handbook was prepared to assist you in aligning our common curriculum, Career Preparation Standards, with the state standards used in the California High School Exit Exam and in promoting your program to the school administrators and counselors.

LESSON PLAN DESIGN

The Lesson plan(s) in this handbook were designed using elements from the WASC lesson plan adopted in 2002 the Riverside County ROP and those shown in *FAST: A Focused Approach to Standards and Testing* written by Eileen Warren and Lynne Vaughan in 2003. As always, these Lesson plan(s) can be modified to fit your teaching style and individual circumstances.

Each lesson plan includes the following components:

1. ***Major Area*** - Major area of instruction from your course outline, i.e., Career Preparation Standards

2. ***Lesson Title*** - A title that explains the focus of this lesson

3. ***Key Concepts or Objectives*** - What students should learn in this lesson

4. ***Career Preparation Standards*** - The standard addressed from the course outline

5. ***Academic Standards*** - The California Academic Standard being addressed in this lesson

6. ***ROPERS***: This section should include the Regional Occupational Program Expected Result for Students (ROPERS) addressed

7. ***Teacher Activities*** - Activities the teacher will perform to make this lesson successful

8. ***Student Activities*** - Activities students will perform to make this lesson successful.

9. ***Assessment*** - How will you assess if learning has taken place

The academic standards addressed by the Lesson plan(s) in this handbook were taken from the California Language Arts and Mathematics Blueprints for the California High School Exit Exam (CAHSEE) which you will find include in the back of this handbook. Particular emphasis was placed on the 12 language arts and 17 mathematics standards identified in *FAST: A Focused Approach to Standards and Testing* as those key standards which should be taught and assessed in non-core academic courses (Vaughan and Warren, 2003). English language arts and mathematics standards are more easily integrated into non-academic courses that those from science and social studies.

A sample of the lesson plan template is shown on the following page.

RIVERSIDE COUNTY OFFICE OF EDUCATION	***Major Area:***
	Lesson Title:

Key Concepts or Objectives:

-

Career Preparation Standards:

-

Academic Standards:

-

ROPERS:

-

Teacher Activities:

-

Student Activities:

-

Assessment:

-

(Sample Lesson Plan - Adapted from Integrating the CAHSEE Across the Curriculum)

CAREER PREPARATION STANDARDS

Career Preparation Standards for Riverside County ROP programs were taken from those listed by the California Association of Regional Occupational Centers and Programs (CAROCP). CAROCP developed their standards from those identified in the Career-technical Assessment Portfolio Project (C-TAP).

C-TAP was developed in 1990 by WestEd under a contract with the California Department of Education. The program was originally proposed as a performance-based certification system for vocational students, but has evolved into an assessment system to help instructors improve their classroom instruction (National Center for Research in Vocational Education, nd).

The career preparation skills listed are also identified as essential to workforce preparation by the Secretary's Commission on Achievement Necessary Skills (SCANS), a Department of Labor taskforce (California Association of Regional Occupational Centers and Programs, 2001a)

The ROP Career Preparation Standards are:

1. ***Personal Skills*** - Designs ongoing personal skill development for improved employability, including maintaining a positive attitude, honesty, self-confidence, time management, and other positive traits.

2. ***Interpersonal Skills*** - Utilizes effective interpersonal skills, including conflict resolution and negotiation, while effectively accommodating group dynamics.

3. ***Academic Skills*** - Employs appropriate academic skills, critical thinking, and problem-solving for the workplace.

4. ***Effective Communication*** - Uses the principles of effective communication in written and verbal communication.

5. ***Safety Issues***:

    A. Recognizes occupational safety hazards, demonstrates appropriate prevention measures, and observes safety rules for the work environment.

    B. Successfully completes an occupational specific safety assessment.

    C. Identifies local Homeland Security and first responder agencies and methods of contact for each.

D. Creates a personal home evacuation and emergency preparedness plan

E. Recalls the emergency procedures for the school and/or workplace.

6. ***Career Paths***:

A. Identifies occupational career paths of interest and models effective strategies for obtaining employment.

B. Composes accurate, effective job acquisition documents, including a job application, resume and cover letter; and employs appropriate follow-up techniques.

C. Practices effective interviewing techniques.

D. Recognizes behavior and attitudes that contribute to employee retention and promotion, and models appropriate worksite attire and appearance.

E. Chooses and employs current technologies for the job search and application process

7. ***Technology*** - Identifies, utilizes and adapts to changing technology.

On the following pages, you will find each Career Preparation Standard described in greater detail. You will also find Lesson plan(s) for each skill that meet the California Standards in Language Arts and Mathematics, with particular attention to those standards addressed in the California High School Exit Exam (CAHSEE).

CAREER PREPARATION STANDARD 1:
PERSONAL SKILLS

Designs ongoing personal skill development for improved employability, including maintaining a positive attitude, honesty, self-confidence, time management, and other positive traits.

This skill includes positive attitudes, self-confidence, honesty, responsibility, initiative, self-discipline, personal hygiene, time management, and the capacity for lifelong learning.

Major Area:
Career Preparation Standards

Lesson Title:
Key Personality Traits for Workplace Success

Key Concepts or Objectives:

- What personal traits do people successful in the workplace share?
- Why are these traits important to workplace success?
- How are these traits developed? (or measured?) (or recognized?)

Career Preparation Standards:

- Personal Skills - Designs ongoing personal skill development for improved employability

Academic Standards:

- RC 1.1, Identify and use literal and figurative meaning of words and understand word derivations
- RC 1.2, Distinguish between denotative and connotative meaning of words and interpret the connotative power of words.
- WS 1.5, Synthesize information from multiple sources and identify discrepancies and different perspective in each medium

ROPERS:

- Confident, Knowledgeable, Responsible, Team Player

Teacher Activities:

- Facilitate brainstorming activities on personal traits essential to workplace success
- Provide list of research resources for reading on personal skill
- Lecture and facilitate activity of vocabulary list, literal, figurative, denotative, and connotative meanings, and connection to synonyms
- Develop rubric for and model beginning examples for Personal Trait List
- Review expository essay writing

Student Activities:

- Brainstorm successful personal traits
- Compare and add to list from ROPERS chart and rubric
- Research writings from three sources to evaluate and determine key personal traits for workplace success vocabulary list
- Create list of key personal traits, with corresponding synonyms with similar connotations
- Write an expository essay synthesizing research findings on key personal success traits, and identify differences in perspectives encountered

Assessment:

- Student-generated list of key personal workplace success traits
- "Personal Trait & Synonym" chart
- Expository essay

(Sample Lesson Plan)

KEY PERSONAL TRAITS FOR WORKPLACE SUCCESS

SOURCE	DESCRIPTION	ADJECTIVE EQUIVALENT	SYNONYMS, Related Words
ROPERS	Confident	Confident	Self-assured, Secure, Self-confident, Unafraid,
ROPERS	Positive Attitude	Optimistic	Upbeat, cheerful, hopeful
ROPERS	Initiative	Self-initiating	Self-starting, Ambitious,
http://www.su.ukc.ac.uk/sdu/keyskills.html	Communication	Articulate	Communicatively versatile or proficient

Additional possibilities for online research:

- http://www.bls.gov/oco/ocos120.htm (Occupational Outlook Handbook)
- http://www.acinet.org/acinet/ (Career Info Net, Click on What It Takes for Personal Skills info)
- http://64.57.102.78/resourcelist.html (California Careers Resource List)

Also see pages 46-48 of the California Career Planning Guide for "Exploring Online"

CAREER PREPARATION STANDARD 2: INTERPERSONAL SKILLS

Utilizes effective interpersonal skills, including conflict resolution and negotiation, while effectively accommodating group dynamics.

This skill includes the ability to work cooperatively, accept supervision, assume leadership roles, and show respect for others. This standard includes an understanding of sexual harassment laws and an appreciation of cultural diversity in the workplace.

Major Area:
Career Preparation Standards

Lesson Title:
Interpersonal Skills

Key Concepts or Objectives:

- Can your attitude have an effect on how you view your job?
- Can you make a difference in your place of employment?
- Can you make a difference in your relationships with others?

Career Preparation Standards:

- Interpersonal Skills - Utilizes effective interpersonal skills, including conflict resolution and negotiation, while effectively accommodating group dynamics
- Effective Communication – Uses the principles of effective communication in written and verbal communication
- Personal Skills – Designs ongoing personal skill development for improved employability, including maintaining a positive attitude, honesty, self-confidence, time management, and other positive traits

Academic Standards:

- RC2.7 – Critique the logic of functional documents by examining and analyzing for possible reader misunderstanding
- RC2.8 – Evaluate the credibility of an author's argument critiquing the comprehensiveness of evidence and connection of evidence to argument
- WS1.1 – Establish a controlling impression or coherent thesis that conveys a clear and distinctive perspective on the subject and maintains a consistent tone and focus throughout the piece of writing

ROPERS:

- Confident, Responsible, Team Players

Teacher Activities:

- Obtain the FISH video (available through RCOE Educational Resource Center)
- Prior to viewing, draw students' attention to the 4 concepts: Play, Make their Day, Be There, Choose Your Attitude. Provide FISH Concepts Handout (attached)
- After viewing, facilitate brainstorming on what students can do on the job or at school to improve their environment using these 4 concepts.

Student Activities:

- Watch the FISH video; use handout to take notes on the 4 concepts covered in the video
- Use the handout provided to write logic short forms on each of the 4 concepts

Assessment:

- Completed FISH Concepts Handout

(Sample Lesson Plan)

FISH Concepts Handout

The FISH video covers 4 concepts: Play, Make their Day, Be There, and Choose Your Attitude. As you watch the video, takes notes on each concept as follows:

1. **Play**

   Meaning

   What evidence is provided to support this concept?

2. **Make their day**

   Meaning

   What evidence is provided to support this concept?

3. **Be there**

   Meaning

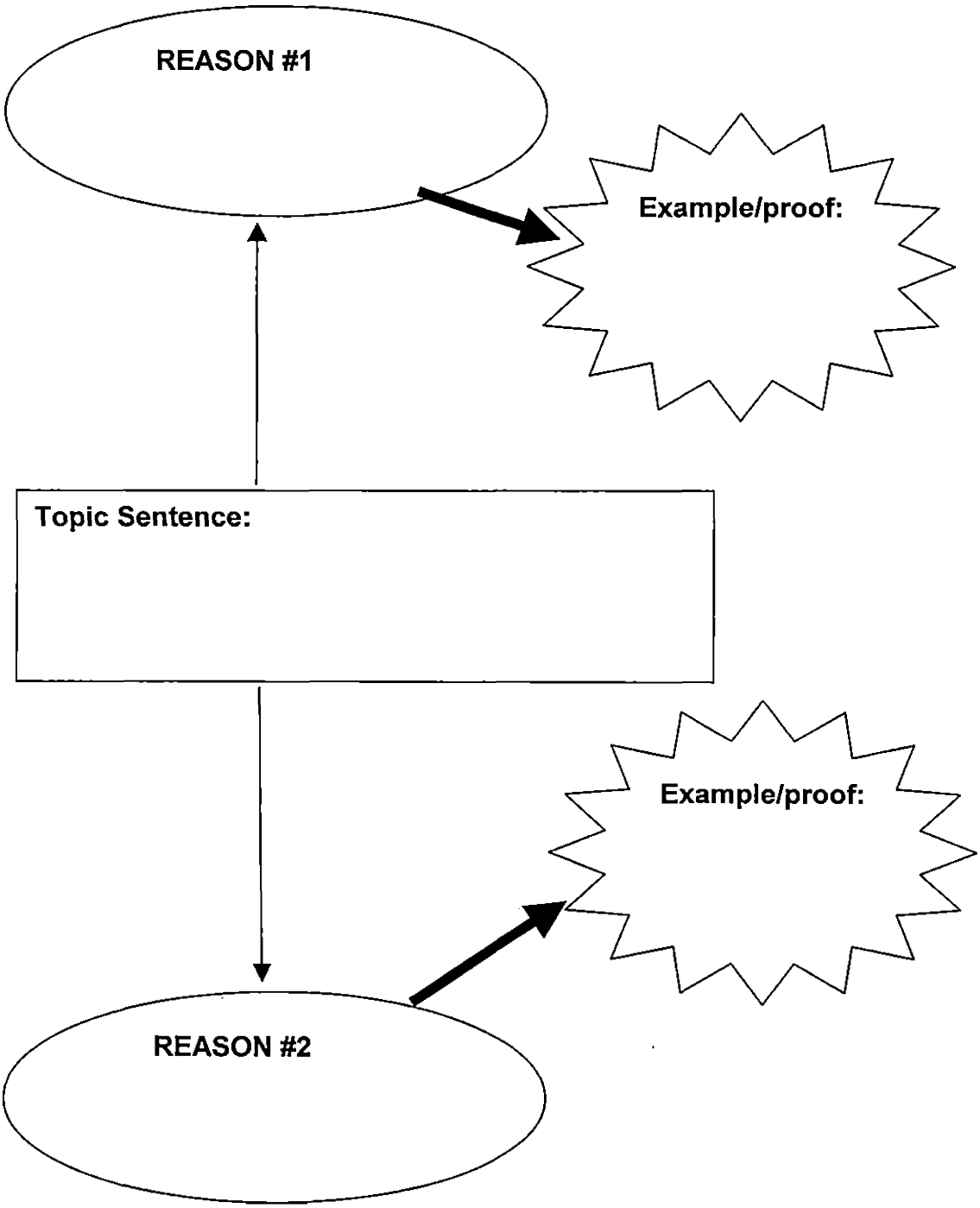
   What evidence is provided to support this concept?

4. **Choose your attitude**

   Meaning

   What evidence is provided to support this concept?

Use this form to write a logic short form for each of the 4 concepts covered in the FISH video.



CAREER PREPARATION STANDARD 3:
ACADEMIC SKILLS

Employs appropriate academic skills, critical thinking, and problem-solving for the workplace.

These skills include applying basic skills in order to calculate, estimate, measure, identify, locate, and organize information/data; interpret and follow directions from manuals, labels, and other sources; analyze and evaluate information and solutions.

RIVERSIDE COUNTY OFFICE OF EDUCATION	***Major Area:*** Career Preparation Standards
	Lesson Title: Vocabulary Development

Key Concepts or Objectives:

- Students will build ***Character Education*** vocabulary proficiency through word analysis, and exercises designed to improve their knowledge and fluency.

Career Preparation Standards:

- Academic Skills – Employs appropriate academic skills, critical thinking, and problem-solving for the workplace.

Academic Standards:

- Reading 1.0, Grades 9-12 (Word Analysis, Fluency, and Systematic Vocabulary Development)
  <u>or</u>
- RC 1.1 (Grades 9-10) Identify & use the literal and figurative meanings of words and understand word derivations
- RC 1.2 (Grades 9-10) Distinguishes between the denotative and connotative meanings of words and interprets the connotative power of words.

ROPERS:

- Knowledgeable (Academic Standards)

Teacher Activities:

- Provide link, or handouts from http://www.vocabulary.com/chared.html , along with guidance and timelines for completion of selected activities

Student Activities:

- Completion of a selection, or all, of the ***Character Education Vocabulary*** activities at http://www.vocabulary.com/chared.html

Assessment:

- Students use vocabulary words in original composition, essay, or sentences.

(Sample Lesson Plan)

(NOTE: This website contains a wealth of vocabulary acquisition activities that will help all Career-Technical Education students develop fluency and reading comprehension across all career pathways and subject areas.)

RIVERSIDE COUNTY OFFICE OF EDUCATION

Major Area:
Career Preparation Standards

Lesson Title:
Math in the Workplace

Key Concepts or Objectives:
The student will be able to:

- Figure yearly, monthly, weekly or hourly pay when given on variable
- Figure regular and overtime pay at the rate of 1.5 when given hourly wage, regular hours worked, and overtime hours worked.

Career Preparation Standards:

- Academic Skills - Employs appropriate academic skills, critical thinking, and problem-solving for the workplace.
- Career Paths - Chooses and employs current technologies for the job search and application process.

Academic Standards:

- NS1.2 - add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers.

ROPERS:

- Knowledgeable, Team Player

Teacher Activities:

- Provide handouts "How much do I make?"
- Explain how to compute yearly, monthly, weekly, and hourly pay when you have one variable.
- Provide handout "Can I have some overtime, please?"
- Discuss the concept of overtime and explain how it is calculated.

Student Activities:

- Calculate the missing entries on the handout "How much do I make?"
- Using a variety of research methods, find the yearly, monthly, weekly, or hourly salary for 4 additional career fields. Calculate the other 3 salaries based on the findings.
- Calculate the regular earnings, overtime earnings, and total earnings on the handout "Can I have some overtime, please?"

Assessment:

- Handout - "How much do I make?"
- Handout - "Can I have some overtime, please?"

(Sample Lesson Plan - Adapted from Integrating the CAHSEE Across the Curriculum)

How Much Do I Make?

Directions: Given the chart below, calculate the missing entries. One week has 40 hours of work, one year has 52 weeks. Round your answers to the nearest dollar.

Job	Yearly Salary	Monthly Pay	Weekly Pay	Hourly Pay
Architect	$35,000			
Librarian		$3,242		
Accountant/Auditor				$18
Air Traffic Controller			$929	
Human Service Workers		$1,683		
Teacher			$644	
News Reporter	$33,200			
Bank Teller				$8
Office Clerk		$1,632		
Secretary			$453	
Auto Mechanic		$4,583		
Woodworker	$22,430			
Truck Driver				$12

Can I Have Some Overtime, Please?

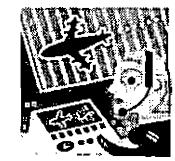
Directions: Complete the following charts. Use 1.5 as the overtime rate. Round answers to the nearest cent.

1. Suzanne Smith - Architect

Hourly Wage =	$17
Regular Hours =	40
Overtime Hours =	2.5

Regular Earnings =	$_____
Overtime Earnings =	$_____
Total Earnings =	$_____

2. Ana Ramirez - Air Traffic Controller



Hourly Wage =	$23
Regular Hours =	38
Overtime Hours =	4

Regular Earnings =	$_____
Overtime Earnings =	$_____
Total Earnings =	$_____

3. Brian Wilson - Teacher

Hourly Wage =	$16
Regular Hours =	40
Overtime Hours =	4.5

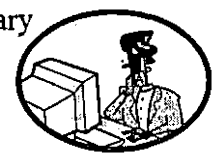
Regular Earnings =	$_____
Overtime Earnings =	$_____
Total Earnings =	$_____

4. Jonathan Brown - Bank Teller

Hourly Wage =	$8
Regular Hours =	32
Overtime Hours =	1.5

Regular Earnings =	$_____
Overtime Earnings =	$_____
Total Earnings =	$_____

5. Cheryl Jackson - Secretary



Hourly Wage =	$16.50
Regular Hours =	40
Overtime Hours =	0

Regular Earnings =	$_____
Overtime Earnings =	$_____
Total Earnings =	$_____

6. John Johnson - Auto Mechanic

Hourly Wage =	$17
Regular Hours =	40
Overtime Hours =	2.5

Regular Earnings =	$_____
Overtime Earnings =	$_____
Total Earnings =	$_____

CAREER PREPARATION STANDARD 4:
EFFECTIVE COMMUNICATION

Uses the principles of effective communication in written and verbal communications.

This standard includes effective oral and written communication, listening skills, following and giving directions, requesting and giving information, asking questions. Under this area fall business letters, memos, written estimates, and reports, as well as telephone and other customer service skills.

RIVERSIDE COUNTY OFFICE OF EDUCATION

Major Area:
Career Preparation Standards

Lesson Title:
Effective Communication and Interviewing

Key Concepts or Objectives:
The student will be able to:

- Identify common interview questions.
- Evaluate common interview questions to identify the underlying reason for the question (denotative versus connotative vocabulary).
- Develop appropriate personal responses.
- Check responses for supportive examples.

Career Preparation Standards:

- Effective Communication - Uses the principles of effective communication in written and verbal communications.
- Career Paths - Practices effective interviewing techniques.

Academic Standards:

- RC1.2 - Distinguish between the denotative and connotative meanings of words and interpret the connotative power of words.
- WC1.3 - Understanding of proper English usage of grammar, paragraph and sentence structure, diction and syntax.

ROPERS:

- Confident, Knowledgeable, Team Player

Teacher Activities:

- Provide ROP Job Search Handbook, The Interview, pages 30-36.
- Facilitate discussion of commonly asked interview questions and the underlying reason for those questions.

Student Activities:

- Read pages 30-36, ROP Job Search Handbook
- Brainstorm as a class, what other questions might be asked and why they may be asked. Look for questions that would be specific to occupational cluster.
- Create a list of 5 most commonly asked interview questions.
- Analyze questions for underlying reason employers ask each question.
- Develop appropriate personal response.
- Write or type the 5 questions, the underlying reasons for the questions, and the responses to each.

Assessment:

- Written activity, graded for completeness and grammar, spelling, syntax and sentence structure.

(Sample Lesson Plan)

CAREER PREPARATION STANDARD 5:
SAFETY ISSUES

A. ***Recognizes occupational safety hazards, demonstrates appropriate prevention measures, and observes safety rules for the work environment.***

B. ***Successfully completes an occupationally specific safety assessment.***

C. ***Identifies local Homeland Security and first responder agencies and methods of contact for each.***

D. ***Creates a personal home evacuation and emergency preparedness plan.***

E. ***Recalls the emergency procedures for the school and/or workplace.***

This includes the safe operation of equipment, proper handling of hazardous materials, appropriate attire and safety accessories, avoidance of physical injuries, interpretation of warning and hazard signs and terminology, and following and understanding safety-related directions. It is important that safety lessons be identified to students and that safety be continually reinforced orally, in lessons, and through shop/classroom signs.

Major Area:
Career Preparation Standards

Lesson Title:
Emergency evacuation plans for school and home

Key Concepts or Objectives:

- Why is an emergency plan necessary?
- What are the primary concerns addressed in an emergency plan?
- What procedures will our class follow during a drill, practice or real?
- What things should be considered when designing an emergency plan for your home?

Career Preparation Standards:

- CPS 7D, Creates a personal home evacuation and emergency preparedness plan.
- CPS 7E, Recalls the emergency procedures for the school and/or workplace.

Academic Standards:

- MG1.2, Construct and read drawings and models made to scale

ROPERS:

- Confident, Knowledge, Responsible, Team Players

Teacher Activities:

- Facilitate brainstorming to answer key concepts
- Provide school map
- Provide paper, rulers, and color pencils for creating home evacuation plan

Student Activities:

- Brainstorm reasons for an emergency plan and important issues to consider when creating an evacuation plan
- Illustrate classroom evacuation plan on map
- Draw home evacuation plan, estimating and labeling distance from each bedroom to exit to be used for evacuation.

Assessment:

- Map of school evacuation plan
- Map of home evacuation plan

(Sample Lesson Plan)

CAREER PREPARATION STANDARD 6:
CAREER PATHS

A. ***Identifies occupational career paths of interest and models effective strategies for obtaining employment.***

B. ***Composes accurate, effective job acquisition documents, including a job application, resume and cover letter; and employs appropriate follow-up techniques.***

C. ***Practices effective interviewing techniques.***

D. ***Recognizes behavior and attitudes that contribute to employee retention and promotion, and models appropriate worksite attire and appearance.***

E. ***Chooses and employs current technologies for the job search and application process.***

This includes traditional job preparation skills, such as resumes, application forms, cover letters, sources of employment information, and interviewing skills, but also includes an overview of the industry and an understanding of labor market trends. It should also include an understanding of the importance of basic skills to the field and options for further training. Students should learn to develop a portfolio and should take responsibility for further professional growth.

Major Area:
Career Preparation Standards

Lesson Title:
Occupational Career Paths

Key Concepts or Objectives:

- How can you find information about various careers: such as; employment outlook, necessary training and education, major duties, working conditions, earning potential?
- What factors are the most important to consider when making a career decision?

Career Preparation Standards:

- Career Paths A - Identifies occupational career paths of interest and models effective strategies for obtaining employment.
- Academic Skills - employs appropriate academic skills, critical thinking, and problem-solving for the workplace.

Academic Standards:

- WS1.1, Establish a thesis that conveys clear perspective on the subject and maintain consistent tone and focus.
- RC2.1 - Analyze the structure and format of functional workplace documents.

ROPERS:

- Confident, Knowledge, Team Player

Teacher Activities:

- Facilitate brainstorming activities on factors important in making a decision about future careers
- Provide Internet access to www.bls.gov/oco
- Provide guidance on using the Web site
- Provide handout - Career Decision Rubric

Student Activities:

- Brainstorm factors important in making a decision about future careers
- Research important aspects of 3 careers online
- Use the Career Decision Rubric to record findings.
- Write an expository essay synthesizing research findings and identify which career best fits with goals, aptitude, and educational plans.

Assessment:

- Expository essay
- Career Decision Rubric

(Sample Lesson Plan)

Career Decision Grid

Job Title	1.	2.	3.			
Factors Important in Career Decisions						

CAREER PREPARATION STANDARD 7:
TECHNOLOGY

Identifies, utilizes and adapts to changing technology.

Students should understand the role of technology in their chosen field and should be able to use all appropriate technology. Students should also feel confident in their ability to learn new technology by generalizing from what they know, adapting skills to new situations, and identifying and using sources of information and of further learning.

Major Area:
Career Preparation Standards

Lesson Title:
Technology and Your Career

Key Concepts or Objectives:

- How has technology changed/improved you planned career field?
- What technological changes do you expect in the future?
- What specific technology changes would you like to see and why?

Career Preparation Standards:

- Technology – Identifies, utilizes, and adapts to changing technology.
- Effective Communication – Uses the principles of effective communication in written and verbal communication

Academic Standards:

- WS1.1 – Establish a thesis that conveys clear perspective on the subject and maintain consistent tone and focus.
- WS1.3 – Use clear research questions and suitable research methods to get and present evidence from primary and secondary sources.
- WS1.4 – Develop main ideas within the composition body through supporting evidence.
- WS1.9 – Revise writing to improve logic, coherence, perspective, word choice, and tone—considering the audience and purpose.

ROPERS:

- Confident, Responsible, Knowledgeable, Team Players

Teacher Activities:

- Provide Internet and PowerPoint access (library, media center).
- Lead students in brainstorming for a definition of technology and on technology improvements, past and future, for the specific occupational area being taught.
- Provide grading rubric for PowerPoint presentation
- Provide assistance where needed on creating a PowerPoint presentation.

Student Activities:

- Brainstorm a definition for technology. Use a dictionary or the Internet to validate your definition.
- Using Internet, library research, brainstorming, list past technology changes for occupational field.
- Working in teams of 2-3, create PowerPoint presentation describing/discussing technology changes that have occurred, those you expect to occur, and at least one change you would like to see.
- Using the grading rubric, peer review the presentation of another team.
- Edit your presentation based on peer review and present the presentation to the class.

(Sample Lesson Plan)

PROMOTING YOUR PROGRAM

As ROP instructors, we are all aware of the benefits our classes have to offer students. Unfortunately, not everyone realizes the value of our programs, not only for the student but for the schools. We must, therefore, take an active role in promoting what we do. This is when Public Relations becomes part of our job.

Goals of Public Relations

"PR (Public Relations) is a mechanism for defining and conveying the image you want to project" (California Regional Occupational Centers and Programs, 2001b). CAROCP further lists the following goals for public relations:

1. Highlight organization's accomplishments
2. Explain policy
3. Build support for program, products, or services
4. Project favorable image in positive light
5. Earn confidence
6. Influence public opinion

Who Do You Want to Reach

Some of the people that you will want to reach with the message that Career-technical Education/ROP programs can help students to achieve academic excellence include:

1. Principals
2. Assistant Principals
3. Learning Directors/Vice Principals
4. Learning Coordinators/Counselors
5. Parents
6. School board members
7. School district administrators
8. Students

Methods for Getting Out the Word

The methods you use to get the word out will differ depending on your personality, your district, and your location; however, some possibilities are as follows:

1. Show this handbook to your school site administrators and learning directors.

2. Work within your department to let other teachers know what you do. Ask them to spread the word to students.

3. Take advantage of the school newspaper to write articles about your classes that may be seen by administrators, parents, students, and other school employees.

4. Take advantage of newsletters sent home to parents.

5. Be an advisor for a club or student organization.

6. Post flyers during Spring registration, Back to School Night, Open House, Fall Registration, etc.

CAHSEE Language Arts Blueprint*

Revised July 2003

California Content Standard	Number and Type of Items
Reading (Grades Nine and Ten with two standards from Grade Eight as noted†)	**45** Multiple-choice Items Total
1.0 Word Analysis, Fluency, and Systematic Vocabulary Development Students apply their knowledge of word origins to determine the meaning of new words encountered in reading materials and use those words accurately.	*7* Multiple-choice Items
1.1 Identify and use the literal and figurative meanings of words and understand word derivations.	5
1.2 Distinguish between the denotative and connotative meanings of words and interpret the connotative power of words.	2
1.3 Identify Greek, Roman, and Norse mythology and use the knowledge to understand the origin and meaning of new words (e.g., the word narcissistic drawn from the myth of Narcissus and Echo).	0
2.0 Reading Comprehension (Focus on Informational Materials) Students read and understand grade-level-appropriate material. They analyze the organizational patterns, arguments, and positions advanced. The selections in *Recommended Literature, Grades Nine Through Twelve* (1990) illustrate the quality and complexity of the materials to be read by students. In addition, by grade twelve, students read two million words annually on their own, including a wide variety of classic and contemporary literature, magazines, newspapers, and online information. In grades nine and ten, students make substantial progress toward this goal.	18 Multiple-choice Items
Structural Features of Informational Materials	
†8.2.1 Compare and contrast the features and elements of consumer materials to gain meaning from documents (e.g., warranties, contracts, product information, instruction manuals).	1
2.1 Analyze the structure and format of functional workplace documents, including the graphics and headers, and explain how authors use the features to achieve their purposes.	3

† *Eighth-grade content standard.*

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CAHSEE Language Arts Blueprint*
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California Content Standard	Number and Type of Items
2.2 Prepare a bibliography of reference materials for a report using a variety of consumer, workplace, and public documents.	0
Comprehension and Analysis of Grade-Level-Appropriate Text	
2.3 Generate relevant questions about readings on issues that can be researched.	0
2.4 Synthesize the content from several sources or works by a single author dealing with a single issue; paraphrase the ideas and connect them to other sources and related topics to demonstrate comprehension.	3
2.5 Extend ideas presented in primary or secondary sources through original analysis, evaluation, and elaboration.	3
2.6 Demonstrate the use of sophisticated learning tools by following technical directions (e.g., those found with graphic calculators and specialized software programs and in access guides to World Wide Web sites on the Internet).	0
Expository Critique	
2.7 Critique the logic of functional documents by examining the sequence of information and procedures in anticipation of possible reader misunderstandings.	3
2.8 Evaluate the credibility of an author's argument or defense of a claim by critiquing the relationship between generalizations and evidence, the comprehensiveness of evidence, and the way in which the author's intent affects the structure and tone of the text (e.g., in professional journals, editorials, political speeches, primary source material).	5

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California Content Standard	Number and Type of Items
3.0 Literary Response and Analysis Students read and respond to historically or culturally significant works of literature that reflect and enhance their studies of history and social science. They conduct in-depth analysis of recurrent patterns and themes. The selections in *Recommended Literature, Grades Nine Through Twelve* illustrate the quality and complexity of the materials to be read by students.	**20** Multiple-choice items
Structural Features of Literature	
3.1 Articulate the relationship between the expressed purposes and the characteristics of different forms of dramatic literature (e.g., comedy, tragedy, drama, dramatic monologue).	2
3.2 Compare and contrast the presentation of a similar theme or topic across genres to explain how the selection of genre shapes the theme or topic.	0
Narrative Analysis of Grade-Level-Appropriate Text	
3.3 Analyze interactions between main and subordinate characters in a literary text (e.g., internal and external conflicts, motivations, relationships, influences) and explain the way those interactions affect the plot.	2
3.4 Determine characters' traits by what the characters say about themselves in narration, dialogue, dramatic monologue, and soliloquy.	2
3.5 Compare works that express a universal theme and provide evidence to support the ideas expressed in each work.	2
3.6 Analyze and trace an author's development of time and sequence, including the use of complex literary devices (e.g., foreshadowing, flashbacks).	2
3.7 Recognize and understand the significance of various literary devices, including figurative language, imagery, allegory, and symbolism, and explain their appeal.	2

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California Content Standard	Number and Type of Items
3.8 Interpret and evaluate the impact of ambiguities, subtleties, contradictions, ironies, and incongruities in a text.	2
3.9 Explain how voice, persona, and the choice of a narrator affect characterization and the tone, plot, and credibility of a text.	2
3.10 Identify and describe the function of dialogue, scene designs, soliloquies, asides, and character foils in dramatic literature.	1
Literary Criticism	
†8.3.7 Analyze a work of literature, showing how it reflects the heritage, traditions, attitudes, and beliefs of its author. (Biographical approach)	3 (Tasks that assess the three different approaches will be rotated across test forms.)
3.11 Evaluate the aesthetic qualities of style, including the impact of diction and figurative language on tone, mood, and theme, using the terminology of literary criticism. (Aesthetic approach)	
3.12 Analyze the way in which a work of literature is related to the themes and issues of its historical period. (Historical approach)	
Writing (Grades Nine and Ten)	**27** Multiple-choice items
1.0 Writing Strategies Students write clear, coherent, and focused essays. The writing exhibits students' awareness of audience and purpose. Essays contain formal introductions, supporting evidence, and conclusions. Students progress through the stages of the writing process as needed.	12 Multiple-choice items
Organization and Focus	
1.1 Establish a controlling impression or coherent thesis that conveys a clear and distinctive perspective on the subject and maintain a consistent tone and focus throughout the piece of writing.	3
1.2 Use precise language, action verbs, sensory details, appropriate modifiers, and the active rather than the passive voice.	3

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California Content Standard	Number and Type of Items
Research and Technology	
1.3 Use clear research questions and suitable research methods (e.g., library, electronic media, personal interview) to elicit and present evidence from primary and secondary sources.	0
1.4 Develop the main ideas within the body of the composition through supporting evidence (e.g., scenarios, commonly held beliefs, hypotheses, definitions).	2
1.5 Synthesize information from multiple sources and identify complexities and discrepancies in the information and the different perspectives found in each medium (e.g., almanacs, microfiche, news sources, in-depth field studies, speeches, journals, technical documents).	1
1.6 Integrate quotations and citations into a written text while maintaining the flow of ideas.	0
1.7 Use appropriate conventions for documentation in the text, notes, and bibliographies by adhering to those in style manuals (e.g., *Modern Language Association Handbook, The Chicago Manual of Style*).	0
1.8 Design and publish documents by using advanced publishing software and graphic programs.	0
Evaluation and Revision	
1.9 Revise writing to improve the logic and coherence of the organization and controlling perspective, the precision of word choice, and the tone by taking into consideration the audience, purpose, and formality of the context.	3
2.0 Writing Applications (Genres and Their Characteristics) Students combine the rhetorical strategies of narration, exposition, persuasion, and description to produce texts of at least 1,500 words each. Student writing demonstrates a command of standard American English and the research, organizational, and drafting strategies outlined in Writing Standard 1.0.	Essay Item

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California Content Standard	Number and Type of Items
Using the writing strategies of grades nine and ten outlined in Writing Standard 1.0, students:	√
2.1 Write biographical ~~or autobiographical~~ narratives ~~or short stories~~:	
a. Relate a sequence of events and communicate the significance of the events to the audience.	
b. Locate scenes and incidents in specific places.	
c. Describe with concrete sensory details the sights, sounds, and smells of a scene and the specific actions, movements, gestures, and feelings of the characters; use interior monologue to depict the characters' feelings.	
d. Pace the presentation of actions to accommodate changes in time and mood.	
e. Make effective use of descriptions of appearance, images, shifting perspectives, and sensory details.	
2.2 Write responses to literature:	√
a. Demonstrate a comprehensive grasp of the significant ideas of literary works.	
b. Support important ideas and viewpoints through accurate and detailed references to the text or to other works.	
c. Demonstrate awareness of the author's use of stylistic devices and an appreciation of the effects created.	
d. Identify and assess the impact of perceived ambiguities, nuances, and complexities within the text.	
2.3 Write expository compositions, including analytical essays and research reports:	√
a. Marshal evidence in support of a thesis and related claims, including information on all relevant perspectives.	

√ Covered on this exam.

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b. Convey information and ideas from primary and secondary sources accurately and coherently.	
c. Make distinctions between the relative value and significance of specific data, facts, and ideas.	
~~d. Include visual aids by employing appropriate technology to organize and record information on charts, maps, and graphs.~~	
e. Anticipate and address readers' potential misunderstandings, biases, and expectations.	
f. Use technical terms and notations accurately.	
2.4 Write persuasive compositions:	√
a. Structure ideas and arguments in a sustained and logical fashion.	
b. Use specific rhetorical devices to support assertions (e.g., appeal to logic through reasoning; appeal to emotion or ethical belief; relate a personal anecdote, case study, or analogy).	
c. Clarify and defend positions with precise and relevant evidence, including facts, expert opinions, quotations, and expressions of commonly accepted beliefs and logical reasoning.	
d. Address readers' concerns, counterclaims, biases, and expectations.	
2.5 Write business letters:	√
a. Provide clear and purposeful information and address the intended audience appropriately.	
b. Use appropriate vocabulary, tone, and style to take into account the nature of the relationship with, and the knowledge and interests of, the recipients.	
c. Highlight central ideas or images.	

√ Covered on this exam

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d. Follow a conventional style with page formats, fonts, and spacing that contribute to the documents' readability and impact.	
2.6 Write technical documents (e.g., a manual on rules of behavior for conflict resolution, procedures for conducting a meeting, minutes of a meeting):	
a. Report information and convey ideas logically and correctly.	
b. Offer detailed and accurate specifications.	
c. Include scenarios, definitions, and examples to aid comprehension (e.g., troubleshooting guide).	
d. Anticipate readers' problems, mistakes, and misunderstandings.	
1.0 Written and Oral English Language Conventions Students write and speak with a command of standard English conventions.	15 Multiple-choice items
Grammar and Mechanics of Writing	
1.1 Identify and correctly use clauses (e.g., main and subordinate), phrases (e.g., gerund, infinitive, and participial), and mechanics of punctuation (e.g., semicolons, colons, ellipses, hyphens).	5
1.2 Understand sentence construction (e.g., parallel structure, subordination, proper placement of modifiers) and proper English usage (e.g., consistency of verb tenses).	5
1.3 Demonstrate an understanding of proper English usage and control of grammar, paragraph and sentence structure, diction, and syntax.	5
Manuscript Form	
1.4 Produce legible work that shows accurate spelling and correct use of the conventions of punctuation and capitalization.	0
1.5 Reflect appropriate manuscript requirements, including title page presentation, pagination, spacing and margins, and integration of source and support material (e.g., in-text citation, use of direct quotations, paraphrasing) with appropriate citations.	0

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1 Essay – Randomly rotate all categories of writing for each test administration

From standards 2.2 or 2.3

Response to Literature or Analytic Essay (Expository Writing)

From standards 2.1, 2.4, or 2.5

Biography, persuasion, business letter

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CAHSEE Mathematics Blueprint*

Revised July 2003

California Content Standard	Number of Items
Grade 6—Statistics, Data Analysis, and Probability	**8 Items Total**
1.0 Students compute and analyze statistical measurements for data sets:	
1.1 Compute the ~~range,~~ mean, median, and mode of data sets.	3
1.2 Understand how additional data added to data sets may affect these computations of measures of central tendency.	0
1.3 Understand how the inclusion or exclusion of outliers affects measures of central tendency.	0
1.4 Know why a specific measure of central tendency (mean, median, mode) provides the most useful information in a given context.	0
2.0 Students use data samples of a population and describe the characteristics and limitations of the samples:	
2.1 Compare different samples of a population with the data from the entire population and identify a situation in which it makes sense to use a sample.	0
2.2 Identify different ways of selecting a sample (e.g., convenience sampling, responses to a survey, random sampling) and which method makes a sample more representative for a population.	0
2.3 Analyze data displays and explain why the way in which the question was asked might have influenced the results obtained and why the way in which the results were displayed might have influenced the conclusions reached.	0
2.4 Identify data that represent sampling errors and explain why the sample (and the display) might be biased.	0
2.5 Identify claims based on statistical data and, in simple cases, evaluate the validity of the claims.	1

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CAHSEE Mathematics Blueprint*

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California Content Standard	Number of Items
3.0 Students determine theoretical and experimental probabilities and use these to make predictions about events:	
3.1 Represent all possible outcomes for compound events in an organized way (e.g., tables, grids, tree diagrams) and express the theoretical probability of each outcome.	1
3.2 Use data to estimate the probability of future events (e.g., batting averages or number of accidents per mile driven).	0
3.3 Represent probabilities as ratios, proportions, decimals between 0 and 1, and percentages between 0 and 100 and verify that the probabilities computed are reasonable; know that if P is the probability of an event, $1-P$ is the probability of an event not occurring.	2
3.4 Understand that the probability of either of two disjoint events occurring is the sum of the two individual probabilities and that the probability of one event following another, in independent trials, is the product of the two probabilities.	0
3.5 Understand the difference between independent and dependent events.	1
Grade 7—Number Sense	**14 Items Total**
1.0 Students know the properties of, and compute with, rational numbers expressed in a variety of forms:	
1.1 Read, write, and compare rational numbers in scientific notation (positive and negative powers of 10) with approximate numbers using scientific notation.	1
1.2 Add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers.	3
1.3 Convert fractions to decimals and percents and use these representations in estimations, computations, and applications.	2

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CAHSEE Mathematics Blueprint*

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California Content Standard		Number of Items
1.4	Differentiate between rational and irrational numbers.	0
1.5	Know that every rational number is either a terminating or repeating decimal and be able to convert terminating decimals into reduced fractions.	0
1.6	Calculate the percentage of increases and decreases of a quantity.	1
1.7	Solve problems that involve discounts, markups, commissions, and profit, and compute simple and compound interest.	2
2.0	Students use exponents, powers, and roots, and use exponents in working with fractions:	
2.1	Understand negative whole-number exponents. Multiply and divide expressions involving exponents with a common base.	1
2.2	Add and subtract fractions by using factoring to find common denominators.	1
2.3	Multiply, divide, and simplify rational numbers by using exponent rules.	1
2.4	Use the inverse relationship between raising to a power and extracting the root of a perfect square integer; for an integer that is not square, determine without a calculator the two integers between which its square root lies and explain why.	1
2.5	Understand the meaning of the absolute value of a number; interpret the absolute value as the distance of the number from zero on a number line; and determine the absolute value of real numbers.	1

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CAHSEE Mathematics Blueprint*

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Grade 7—Algebra and Functions	17 Items Total
1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:	
1.1 Use variables and appropriate operations to write an expression, an equation, an inequality, or a system of equations or inequalities that represents a verbal description (e.g., three less than a number, half as large as area A).	2
1.2 Use the correct order of operations to evaluate algebraic expressions such as $3(2x+5)^2$.	1
1.3 Simplify numerical expressions by applying properties of rational numbers (e.g., identity, inverse, distributive, associative, commutative) and justify the process used.	0
1.4 Use algebraic terminology (e.g., variable, equation, term, coefficient, inequality, expression, constant) correctly.	0
1.5 Represent quantitative relationships graphically and interpret the meaning of a specific part of a graph in the situation represented by the graph.	3
2.0 Students interpret and evaluate expressions involving integer powers and simple roots:	
2.1 Interpret positive whole-number powers as repeated multiplication and negative whole-number powers as repeated division or multiplication by the multiplicative inverse. Simplify and evaluate expressions that include exponents.	1
2.2 Multiply and divide monomials; extend the process of taking powers and extracting roots to monomials when the latter results in a monomial with an integer exponent.	1

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California Content Standard		Number of Items
3.0	Students graph and interpret linear and some nonlinear functions:	
3.1	Graph functions of the form $y=nx^2$ and $y=nx^3$ and use in solving problems.	1
3.2	Plot the values from the volumes of three-dimensional shapes for various values of the edge lengths (e.g., cubes with varying edge lengths or a triangle prism with a fixed height and an equilateral triangle base of varying lengths).	0
3.3	Graph linear functions, noting that the vertical change (change in *y*-value) per unit of horizontal change (change in *x*-value) is always the same and know that the ratio ("rise over run") is called the slope of a graph.	2
3.4	Plot the values of quantities whose ratios are always the same (e.g., cost to the number of an item, feet to inches, circumference to diameter of a circle). Fit a line to the plot and understand that the slope of a line equals the quantities.	1
4.0	Students solve simple linear equations and inequalities over the rational numbers:	
4.1	Solve two-step linear equations and inequalities in one variable over the rational numbers, interpret the solution or solutions in the context from which they arose, and verify the reasonableness of the results.	3
4.2	Solve multistep problems involving rate, average speed, distance, and time or a direct variation.	2

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California Content Standard	Number of Items
Grade 7—Measurement and Geometry	**17 Items Total**
1.0 Students choose appropriate units of measure and use ratios to convert within and between measurement systems to solve problems:	
1.1 Compare weights, capacities, geometric measures, times, and temperatures within and between measurement systems (e.g., miles per hour and feet per second, cubic inches to cubic centimeters).	2
1.2 Construct and read drawings and models made to scale.	1
1.3 Use measures expressed as rates (e.g., speed, density) and measures expressed as products (e.g., person-days) to solve problems; check the units of the solutions; and use dimensional analysis to check the reasonableness of the answer.	2
2.0 Students compute the perimeter, area, and volume of common geometric objects and use the results to find measures of less common objects. They know how perimeter, area and volume are affected by changes of scale:	
2.1 Use formulas routinely for finding the perimeter and area of basic two-dimensional figures and the surface area and volume of basic three-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms, and cylinders.	3
2.2 Estimate and compute the area of more complex or irregular two- and three-dimensional figures by breaking the figures down into more basic geometric objects.	2
2.3 Compute the length of the perimeter, the surface area of the faces, and the volume of a three-dimensional object built from rectangular solids. Understand that when the lengths of all dimensions are multiplied by a scale factor, the surface area is multiplied by the square of the scale factor and volume is multiplied by the cube of the scale factor.	1

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California Content Standard		Number of Items
2.4	Relate the changes in measurement with a change of scale to the units used (e.g., square inches, cubic feet) and to conversions between units (1 square foot = 144 square inches or [1 ft^2] = [144 in^2], 1 cubic inch is approximately 16.38 cubic centimeters or [1 in^3] = [16.38 cm^3]).	1
3.0	Students know the Pythagorean theorem and deepen their understanding of plane and solid geometric shapes by constructing figures that meet given conditions and by identifying attributes of figures:	
3.1	Identify and construct basic elements of geometric figures (e.g., altitudes, mid-points, diagonals, angle bisectors, and perpendicular bisectors; central angles, radii, diameters, and chords of circles) by using a compass and straightedge.	0
3.2	Understand and use coordinate graphs to plot simple figures, determine lengths and areas related to them, and determine their image under translations and reflections.	2
3.3	Know and understand the Pythagorean theorem and its converse and use it to find the length of the missing side of a right triangle and the lengths of other line segments and, in some situations, empirically verify the Pythagorean theorem by direct measurement.	2
3.4	Demonstrate an understanding of conditions that indicate two geometrical figures are congruent and what congruence means about the relationships between the sides and angles of the two figures.	1
3.5	Construct two-dimensional patterns for three-dimensional models, such as cylinders, prisms, and cones.	0
3.6	Identify elements of three-dimensional geometric objects (e.g., diagonals of rectangular solids) and describe how two or more objects are related in space (e.g., skew lines, the possible ways three planes might intersect).	0

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CAHSEE Mathematics Blueprint*

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California Content Standard	Number of Items
Grade 7—Statistics, Data Analysis, and Probability	**4 Items Total**
1.0 Students collect, organize, and represent data sets that have one or more variables and identify relationships among variables within a data set by hand and through the use of an electronic spreadsheet software program:	
1.1 Know various forms of display for data sets, ~~including a stem-and-leaf plot or box-and-whisker plot;~~ use the forms to display a single set of data or to compare two sets of data.	2
1.2 Represent two numerical variables on a scatterplot and informally describe how the data points are distributed and any apparent relationship that exists between the two variables (e.g., between time spent on homework and grade level).	2
1.3 Understand the meaning of, and be able to compute the minimum, the lower quartile, the median, the upper quartile, and the maximum of a data set.	0
Grade 7—Mathematical Reasoning	**8 Items Total Plus Integrated into Other Strands**
1.0 Students make decisions about how to approach problems:	
1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.	2
1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.	1
1.3 Determine when and how to break a problem into simpler parts.	0

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CAHSEE Mathematics Blueprint*

Revised July 2003

California Content Standard		Number of Items
2.0	Students use strategies, skills, and concepts in finding solutions:	
2.1	Use estimation to verify the reasonableness of calculated results.	2
2.2	Apply strategies and results from simpler problems to more complex problems.	0
2.3	Estimate unknown quantities graphically and solve for them by using logical reasoning and arithmetic and algebraic techniques.	1
2.4	Make and test conjectures by using both inductive and deductive reasoning.	1
2.5	Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.	0
2.6	Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.	0
2.7	Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.	0
2.8	Make precise calculations and check the validity of the results from the context of the problem.	0
3.0	Students determine a solution is complete and move beyond a particular problem by generalizing to other situations:	
3.1	Evaluate the reasonableness of the solution in the context of the original situation.	0
3.2	Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.	0
3.3	Develop generalizations of the results obtained and the strategies used and apply them to new problem situations.	1

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CAHSEE Mathematics Blueprint*

Revised July 2003

California Content Standard	Number of Items
Algebra I	**12 Items Total**
1.0 Students identify and use the arithmetic properties of subsets of integers and rational, irrational, and real numbers, including closure properties for the four basic arithmetic operations where applicable:	
1.1 Students use properties of numbers to demonstrate whether assertions are true or false.	0
2.0 Students understand and use such operations as taking the opposite, finding the reciprocal, and taking a root~~, and raising to a fractional power~~. They understand and use the rules of exponents.	1
3.0 Students solve equations and inequalities involving absolute values.	1
4.0 Students simplify expressions before solving linear equations and inequalities in one variable, such as $3(2x-5) + 4(x-2) = 12$.	2
5.0 Students solve multistep problems, including word problems, involving linear equations and linear inequalities in one variable and provide justification for each step.	1
6.0 Students graph a linear equation and compute the x- and y-intercepts (e.g., graph $2x + 6y = 4$). ~~They are also able to sketch the region defined by linear inequality (e.g., they sketch the region defined by $2x + 6y < 4$).~~	2 (1 graphing item; 1 computing item)
7.0 Students verify that a point lies on a line, given an equation of the line. Students are able to derive linear equations. ~~by using the point-slope formula.~~	1
8.0 Students understand the concepts of parallel lines ~~and perpendicular lines~~ and how their slopes are related. ~~Students are able to find the equation of a line perpendicular to a given line that passes through a given point.~~	1

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California Content Standard	Number of Items
9.0 Students solve a system of two linear equations in two variables algebraically and are able to interpret the answer graphically. Students are able to solve a system of two linear inequalities in two variables and to sketch the solution sets.	1
10.0 Students add, subtract, multiply, and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques.	1
11.0 Students apply basic factoring techniques to second- and simple third-degree polynomials. These techniques include finding a common factor for all terms in a polynomial, recognizing the difference of two squares, and recognizing perfect squares of binomials.	0
12.0 Students simplify fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms.	0
13.0 Students add, subtract, multiply, and divide rational expressions and functions. Students solve both computationally and conceptually challenging problems by using these techniques.	0
14.0 Students solve a quadratic equation by factoring or completing the square.	0
15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.	1
16.0 Students understand the concepts of a relation and a function, determine whether a given relation defines a function, and give pertinent information about given relations and functions.	0
17.0 Students determine the domain of independent variables and the range of dependent variables defined by a graph, a set of ordered pairs, or a symbolic expression.	0

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California Content Standard	Number of Items
18.0 Students determine whether a relation defined by a graph, a set of ordered pairs, or a symbolic expression is a function and justify the conclusion.	0
19.0 Students know the quadratic formula and are familiar with its proof by completing the square.	0
20.0 Students use the quadratic formula to find the roots of a second-degree polynomial and to solve quadratic equations.	0
21.0 Students graph quadratic functions and know that their roots are the x-intercepts.	0
22.0 Students use the quadratic formula or factoring techniques or both to determine whether the graph of a quadratic function will intersect the x-axis in zero, one, or two points.	0
23.0 Students apply quadratic equations to physical problems, such as the motion of an object under the force of gravity.	0
24.0 Students use and know simple aspects of a logical argument:	
24.1 Students explain the difference between inductive and deductive reasoning and identify and provide examples of each.	0
24.2 Students identify the hypothesis and conclusion in logical deduction.	0
24.3 Students use counterexamples to show that an assertion is false and recognize that a single counterexample is sufficient to refute an assertion.	0
25.0 Students use properties of the number system to judge the validity of results, to justify each step of a procedure, and to prove or disprove statements:	
25.1 Students use properties of numbers to construct simple, valid arguments (direct and indirect) for, or formulate counterexamples to, claimed assertions.	0

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CAHSEE Mathematics Blueprint*

Revised July 2003

California Content Standard	Number of Items
25.2 Students judge the validity of an argument according to whether the properties of the real number system and the order of operations have been applied correctly at each step.	0
25.3 Given a specific algebraic statement involving linear, quadratic, or absolute value expressions or equations or inequalities, students determine whether the statement is true sometimes, always, or never.	0

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RESOURCES

Association for Career and Technical Education – www.acteonline.org. Select Resource Center on left side navigation bar.

California Department of Education - www.cde.ca.gov

California Department of Education, Academic and Career Integration Unit - www.cde.ca.gov/shsd/aci

California Department of Education, Curriculum and Instruction Resources - www.cde.ca.gov/ci

California Department of Education, CAHSEE Resources - www.cde.ca.gov/statetests/cahsee/resources.html

California Association of Regional Occupational Centers and Programs - www.carocp.org

Horizons Electronic Lesson Plan Resource – www.horizonshelpr.org. Horizons is a partnership established to support all students from pre-kindergarten through adult, in preparing them for success in the world of work, higher education and lifelong learning.

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