

Fall 1997

An Administrative Guide for Developing A TECH PREP Program for Horticulture Education at South Kitsap High School

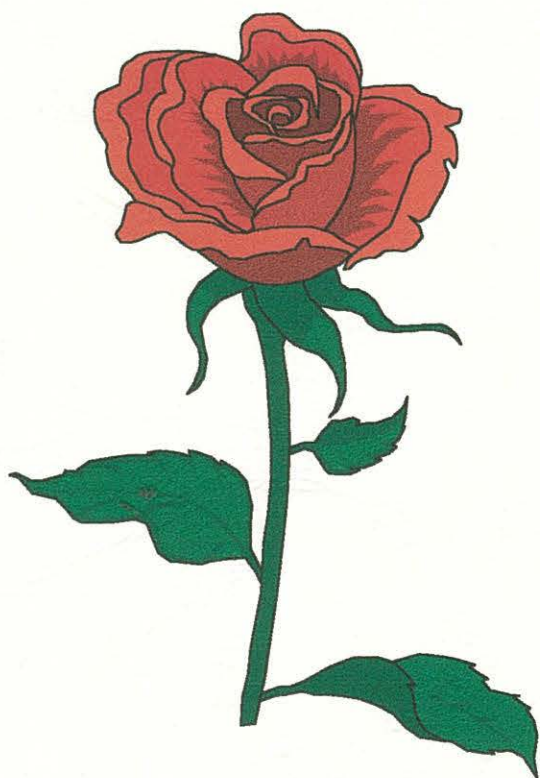
Patrick L. Oster

Follow this and additional works at: https://digitalcommons.cwu.edu/graduate_projects



Part of the [Curriculum and Instruction Commons](#), [Educational Assessment, Evaluation, and Research Commons](#), [Secondary Education Commons](#), and the [Vocational Education Commons](#)

TECH PREP
IN
HORTICULTURE



SOUTH KITSAP HIGH
SCHOOL

**An Administrative Guide for Developing
A TECH PREP Program for Horticulture Education
at South Kitsap High School**

**A Project Report
Presented to
The Graduate Faculty
Central Washington University**

**In Partial Fulfillment
of the Requirements for Degree of
Master of Education Administration**

**by
Patrick L. Oster
November, 1997**

**An Administrative Guide for Developing
A TECH PREP Program for Horticulture Education
for South Kitsap High School**

by

Patrick L. Oster

November, 1997

The purpose of this study was to develop a Tech Prep Program for horticulture education. This program focused on career goals of students enrolled at South Kitsap High School and South Seattle Community College. To accomplish this purpose, current research and literature on Tech Prep models, career paths, and the horticulture industry were reviewed. Additionally, selected materials were obtained from model Tech Prep programs throughout the State of Washington.

ACKNOWLEDGEMENTS

This work is dedicated to the Agriculture Educators in Washington State, for their continued support, encouragement and patience.

The writer also wishes to express his appreciation to Dr. Jack McPherson for his assistance and guidance in the preparation of this paper and my course of study in graduate school. In addition, my appreciation goes to Dr. Susan Madley and Dr. Franklin Carlson for their participation as members of my committee.

Finally, special appreciation is directed to Dale and Patricia Green of the South Kitsap School District for their assistance to this project.

TABLE OF CONTENTS

CHAPTER

1. Background of the Study.....	1
Introduction.....	1
Purpose of the Study.....	2
Limitations of the Study.....	2
Definitions of Terms.....	4
2. Review of Related Literature and Programs.....	7
Introduction.....	7
Current Research Regarding School to Work Transition, Tech Prep.....	7
Information Obtained from other Tech Prep Programs.....	14
Summary.....	17
3. Procedures of the Study.....	19
Need for the Study.....	20
Development of Support for the Study.....	21
Procedures.....	22
Development of the Articulation Agreement.....	23
Planned Implementation and assessment of the Study.....	24

4. The Project.....	..26
Part One - South Kitsap Horticulture Program Overview.....	P-4
Part Two - Survey of Landscape Industry.....	P-5
Part Three - Greenhouse Operations.....	P-6
Part Four - Fall Plant Identification.....	P-7
Part Five - Winter Plant Identification.....	P-8
Part Six - Spring Plant Identification.....	P-9
Part Seven - Principles of Horticulture Science.....	P-10
5. Summary, Conclusions and Recommendations.....	27
Summary.....	27
Conclusions.....	27
Recommendations.....	28
References	29
Appendix A: Horticulture Articulation Agreement.....	31
Appendix B: P.T.E. Portfolio.....	32

CHAPTER ONE

BACKGROUND OF THE STUDY

Introduction

All students in high school should be preparing for life and work after high school graduation. This assertion eliminates any justification for a “general plan” of studies that in theory “leads anywhere’ but in fact “leads nowhere.” Students should either be in a college-prep/baccalaureate plan or in a technical preparation plan. (Parnell, 1991)

In the above statement, Parnell made reference to an issue that has become a growing concern in our society. The need for career education and a plan that prepares students for the world of work, has been, and will continue to be a necessity. Recent information from the S.C.A.N.S. report shows that nearly 66 percent of high school dropouts come from the general education program. This indicates that students must have some further direction and alternative career options that focus on the relationship of academic subjects to application in career or vocational classes. In fact, the state of Washington has only just begun to understand this need by its development of the School to Work Transition and the Essential Learnings. Career education and skills education is fast becoming a priority for our students and their educators.

According to recent reports from our Washington’s fourth grade testing results, unless we change the direction of student’s education immediately, young people and those who employ them will pay a very high price for

competency. Tech Prep programs offer a solution to a growing dilemma. Our State Superintendent of Public Instruction along with our state Governor have not been willing to stand by and watch the demise of public education and neither should we. Education must change to meet the needs of a growing and changing society.

Purpose of the Study

The purpose of this study was to develop a Tech Prep Program for horticulture education. This program focused on career goals of students enrolled at South Kitsap High School and South Seattle Community College. To accomplish this purpose, current research and literature on Tech Prep models, career paths, and the horticulture industry were reviewed. Additionally, selected materials were obtained from model Tech Prep programs throughout the State of Washington.

Limitations of the Study

For purpose of this project, it was necessary to set the following limitations:

1. **Scope:** The program will be designed for implementation in grades 10-12 at South Kitsap High School, Port Orchard Washington.
2. **Research:** The amount of research and literature reviewed for the purpose of this study has been limited to the past ten (10) years.

Additionally, nine (9) selected institutions across the state were contacted

and invited to submit information and input in the development of a Tech
Prep agreement in horticulture.

These Institution were:

South Seattle Community College
Seattle, Washington.

Federal Way School District:
Federal Way, Washington

Highline School District
Seattle, Washington

Renton School District
Renton, Washington.

South Kitsap School District
Port Orchard, Washington.

Seattle School District
Seattle, Washington.

Seattle Community College District
Seattle, Washington.

Walla, Walla Community College
Walla, Walla, Washington.

The Watson Group, Educational Consultants
Seattle, Washington.

Definition of Terms

Significant terms used in the context of this study have been defined as follows:

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 work-force applications (hands-on laboratories dealing with practical equipment and devices). (Hull & Parnell, 1991: pp. 84)
2. Articulation: A process of linking two or more educational systems within a community to help students make a smooth transition from one level to another without experiencing delays, duplication of courses, or loss of credit. (Hull & Parnell, 1991: pp. 42)
3. Articulation Agreement: A commitment to a program designed to provide students with a non-duplicative sequence of progressive achievement leading to competencies in a Tech Prep program. (SBTCC, 1997: pp. 5)
4. Career Cluster: Areas which involve applied academic courses as well as new general-technology courses to build a foundation for career-related skills. (Hull & Parnell, 1991: pp. 191)
5. Competency-Based Curriculum and Instruction: A method of education whereby skill and knowledge standards essential for employment and further education are determined by task analysis and have been

validated by business, labor and other technical experts. (SBTCC, 1997: pp. 5)

6. Consortium: A group of representatives from schools (high schools, community and technical colleges, private schools and colleges, Indian schools and colleges, four year universities, etc.) who are a part of the agreement for planning and operation of a Tech Prep program. (SBTCC, 1997: pp. 5)
7. Horticulture: The science of producing, processing, and marketing fruits, vegetables, and ornamental plants. (Cooper, 1995: pp. 7)
8. Horticulture Education: Courses designed to study the basic skills and principles of Ornamental Horticulture, Science, and Landscaping. Students will also be involved in greenhouse operations and management. (SKHS, 1997: pp. 94)
9. School-to-Work Transition: An educational system that provides for integration of school-based and work-based learning; integration of academic and vocational education, integration of secondary and post-secondary learning; paid work experiences for students; governance through multi-stakeholder partnerships; coordination of various education and training efforts; and challenging content, industry validated skills standards and portable credentials. (SBTCC, 1997: pp. 6)
10. Tech-Prep: A combined secondary and postsecondary program which: (SBTCC, 1997: pp. 7)

- a. Leads to an associate degree or two-year certificate.
- b. Provides technical preparation in at least on field of engineering technology, applied science, mechanical, industrial or practical art or trade, agriculture, health or business.
- c. Builds student competence in mathematics, science, and communications through a sequential course of study to include the applied academics.
- d. Technical content is provided in a competency-based format based on business and industrial standards.
- e. Leads to placement in employment at program completion at mid-level technological occupations.

11. Tech Prep Initiative: A House of Representative Bill (H.R. 22) introduced to break down the barriers between secondary and post-secondary institution, resulting in a coordinated, integrated, focused and challenging education program.

12. Technical Advisory Committee: A committee that represents a specific strand of education (drafting, electronics, agriculture, business management , etc.) and is responsible for providing advice to the Tech Prep consortium. This committee must be composed of equal numbers of business (employers) and labor (employee) representatives. (SBTCC, 1997: pp. 8)

CHAPTER TWO

REVIEW OF RELATED LITERATURE AND PROGRAMS

Introduction

The review of research and literature summarized in Chapter Two has been organized to address:

1. Current research regarding Tech Prep programs.
 - a. School-to-Work-Transition
 - b. Tech Prep and Educational Reform.
2. Information obtained from Tech Prep consortium participants.
3. Summary.

Data current primarily within the past ten (10) years was identified through a hand search of various sources including books and periodicals.

Current Research Regarding School to Work and Tech Prep

In 1916 John Dewey considered the awesome impact of early industrialism and said "Democracy has to be born anew in each generation, and education is its midwife." (Wirth, 1993) For many years we saw a society challenged by the era of industrialism only to fall prey to the new era of "Knowledge Workers." By the end of the century, knowledge workers will

make up a third or more of the work force in the United States. (Drucker, 1994) This new group is faced with challenges other eras did not have to deal with. The question is, can the industrial workers fill the shoes of the knowledge workers? The great majority of the new jobs require qualifications the industrial worker does not possess and is poorly equipped to acquire. They require a good deal of formal education and the ability to acquire and to apply theoretical and analytical knowledge. (Drucker, 1994)

It is important to understand what has caused this new postindustrial revolution. It is marked by three momentous developments. (Wirth, 1993: pp. 361)

1. The electronic computer revolution.
2. The emergence of a competitive global market.
3. The prospect of serious ecological damage.

These three factors are causing United States Corporations to fall behind in international competitiveness, not because of a shortage of skilled labor, but because corporate America is hiding decades of mismanagement behind the presumed faults of the education system. (Gray, 1993) This is not to say education has been meeting all the needs of society, but that they are making an effort. (Weisman, 1993) The potential of the more flexible networking technologies can be unlocked only if the organizational model under which educational institutions have operated for nearly a century is redesigned to uncap the potential of the people who will use the technologies. (O'Looney, 1993) There are many avenues that must be pursued to ensure that we are educating students to meet the needs of today's "knowledge workers" who will be facing the challenges of corporate America.

This literature review focused on two programs that have been developed to aid in the transition of students to the work environment.

1. The School-to-Work Opportunities Act.
2. Tech-Prep.

School-to-Work Opportunities Act

The purpose of the School-To-Work Opportunities Act is to assist students in preparing for future jobs by giving them timely and accurate career information along with the opportunity to obtain high levels of academic and technical skills. (Aring, 1993) According to a study done by the American Vocational Association, the School-to-Work system will provide secondary students with three educational and career alternatives: (A.V.A., 1994: pp. 19)

1. Attaining a high school diploma or an alternative diploma or certificate.
2. Going on to post secondary education to continue developing high levels of academic and technical skills.
3. Entering the world of work with the option of pursuing further education if desired.

In 1989, the US Department of Labor established an Office of Work-Based Learning. In doing so, the department endorsed the concept that students in the K-12 system can more easily learn a number of valuable skills when the classroom and work place setting are connected. (Aring, 1993) As educators, we need to look at the opportunities this program has to offer students. We need to break through the mindset that Vocational Education is narrow training for marginal students preparing for manual, low-status work. (Aring, 1993) the School-to-Work system is based on a few elements that will only benefit students as we prepare them for more meaningful careers. With that in mind, the following is a model that can be

used to implement this system. The key elements of the School-to-Work Opportunities Act, as paraphrased below are:

collaborative partnerships, integrated curriculum, technological advances, adaptable workers, comprehensive career guidance, work bases learning, and the step by step approach. (A.V.A., 1994)

1. **Collaborative Partnerships:**

Education must make connections with businesses in the community. They must work together to determine what is necessary for students who are entering the future workforce to learn.

2. **Integrated Curriculum:**

Jobs today are requiring a balance between the basic elements of education; reading, writing, math, and science, with technical skills. Our curriculum needs to include opportunities for students to apply basic learning with technical skills.

3. **Technological Advances:**

Each year we see new technological advances from areas ranging from agriculture to medicine. Students must be prepared to keep up with the fast pace of technology.

4. **Adaptable Workers:**

Today we are finding that workers will change occupations continually throughout life. Basic skills are needed so that workers will be able to adapt or change positions quickly and efficiently.

5. **Comprehensive Career Guidance:**

There must be ample guidance given to students. Business, industry, parents, teachers, counselors, administrators and community organizations need to be involved so students are organized and informed of opportunities that await them in the future workforce.

6. **Work Based Learning:**

It is important to understand that learning can and does take place outside the walls of the educational institution. Education must build partnerships with employers to allow students to gain practical work experience using what they have learned in the classroom as a foundation to their success in the workforce.

7. **Step by Step Approach:**

As students complete or exhibit a certain skill or level of skills, they should be awarded a certificate of completion. Then the student can take the next step in skill development. The student can work at their own pace completing as many skills as possible. These skill certificates can be useful when searching for jobs. They can prove competency in areas that may be required by an employer.

These Seven elements are the foundation to a radical new approach to education. The ultimate goal of this approach is to allow flexibility and adaptability to a changing environment. The vehicles of implementation of this program include Vocational Education as well as Basic Education.

Community, business, and education have acknowledged the importance of implementing plans like School-to-Work in the high schools of America. Another vehicle used to put these concepts into action is a program called Tech-Prep.

Tech-Prep

Tech-Prep is an integral part of the School-to-Work transition. Tech-Prep is a new educational reform idea that is hard to dispute. Integration of basic and applied studies, collaboration among teachers in all subject areas, employer involvement and articulation of course content both within and

between levels of schooling is the basis to this program. (Osbourne, 1994) Integration of the basic applied studies, and articulation between secondary and post secondary institutions serve as the cornerstones to Tech-Prep. The Tech Prep initiative was originally funded by the Carl Perkins Vocational and Applied Technology Act in 1992. Congress appropriated \$63,434,000 for this federal legislation. The purpose of the act was to make the United States more competitive in the world economy by developing the academic and occupational skills of all segments of the population.

The six main goals of Tech-Prep are: (Harris & Burkenholtz, 1994: pp. 11)

1. To provide a meaningful alternative to "College Prep."
2. To prepare students for employment or for further education toward and associate of applied science degree.
3. To strengthen secondary and post secondary technical programs.
4. To create a smooth transition from secondary to post secondary programs.
5. To give most students a strong academic foundation.
6. To increase the use of contextual learning in academic courses.

With these goals in mind, Tech-Prep is a humanistic approach to teaching students and preparing them for the future work force. The Tech-Prep program prepares students who can analyze, diagnose, problem solve, and apply. (Mahler & Vold, 1994) A well-designed Tech-Prep education program provides students with a wide range of options. Graduating high school students can change their career orientation, choosing a different cluster of future occupations, elect to go to work immediately upon high school graduation, articulate to a post secondary institution, continue their

education at a baccalaureate institution, and transfer from a post secondary to baccalaureate institution. The result is that all students should be prepared to effectively enter the workforce.

According to Hull and Parnell (1991), Tech Prep has been implemented through a variety of means in many states. Any Tech prep initiative is based on several underlying principles:

1. Abandoning the assumption that a baccalaureate degree is the only degree of success.
2. Eliminating the general education track that consists of an irrelevant, unfocused education.
3. Expecting excellence at all levels.
4. Instituting goal-oriented programs that are flexible to meet students needs.
5. Integrating the liberal and performing arts to establish a more meaningful program of study.

The birth of these new programs and ideas prove that American education is dealing with a changing society. It is coping with the change from an industrial nation to a knowledge working nation. Education today is certainly not perfect. However, as the editor of Phi Delta Kappan magazine stated, "As far as the public mindset is concerned, we educators seemingly have less repair work to do than airline officials." (Gough, 1993)

Information obtained from Tech Prep consortium participants

Nine (9) selected institutions from across the Puget Sound were contacted and invited to submit information descriptive of their current programs. Specifically, information detailing the following program components was solicited.

1. Horticulture Education
2. Tech Prep Planning.

Institutions contacted included:

South Seattle Community College
Seattle, Washington.

Federal Way School District:
Federal Way, Washington

Highline School District
Seattle, Washington

Renton School District
Renton, Washington.

South Kitsap School District
Port Orchard, Washington.

Seattle School District
Seattle, Washington.

Seattle Community College District
Seattle, Washington.

Walla, Walla Community College
Walla, Walla, Washington.

The Watson Group, Educational Consultants
Seattle, Washington

An analysis of information obtained from the above institutions revealed that five (5) characteristics were generally common to all Horticulture programs. They included:

1. Applied Academic Curriculum: All of the nine institutions indicated that they incorporated applied academics to their horticulture program. Applied Math and Applied Biology were two courses all the programs implemented.
2. Career Education: Most of the institutions indicated that career planning was necessary for student success. No-one had a specific system however some utilized the career counselor while others used portfolios.
3. Leadership: Most of the institutions incorporated a leadership component within the curriculum. Most of the high school programs utilized the National FFA Organizations as the vehicle to promote and teach leadership.
4. Advisory Committee: A strong component of all of the programs was involvement with local advisory committees which consisted of local business employers and employees. Local committees were responsible for tasks such as:
 - a. Program and curriculum development.
 - b. Avenues for student placement in business locally.

- c. Providing resources for local programs for field trips, monetary support, plant material and other related supplies.
5. Student interest in Tech Prep: All of the institutions recognized the need for advanced opportunity and possible placement in the industry of horticulture through the use of a Tech Prep Program.

Summary

The research and literature summarized in Chapter Two supported the following themes:

1. Current research regarding School-to-Work transition which is a educational system that provides for the integration of academic and vocational education. This system would be successful through programs like Tech Prep that offer youth apprenticeship, cooperative education and career academics. This system helped educators address the following issues.
 - a. Collaborative Partnerships
 - b. Integrated Curriculum
 - c. Technological Advances
 - d. Adaptable Workers
 - e. Comprehensive Career Guidance
 - f. Work Based Learning
 - g. Step by Step approach
2. Tech Prep components, cited in the literature, were characterized by the following program components of Puget Sound horticulture programs.
 - a. Applied curriculum
 - b. Career education
 - c. Leadership
 - d. Advisory Committees

e. Student Interest in Tech Prep

CHAPTER THREE

Procedures of the Study

The purpose of this study was to develop a Tech Prep Program for horticulture education. This program focused on career goals of students enrolled at South Kitsap High School and South Seattle Community College. To accomplish this purpose, current research and literature on Tech Prep models, career paths, and the horticulture industry were reviewed. Additionally, selected materials were obtained from model Tech Prep programs throughout the State of Washington.

Chapter 3 contains background information describing:

1. Need for the Study
2. Development of support for the study
3. Procedures
4. Planned implementation and assessment of the project

Need for the Study

The idea for developing a Tech Prep agreement for horticulture between South Seattle Community College and South Kitsap High School was influenced by the following factors:

1. The writer, a certified agriculture educator, was searching for new avenues to increase educational opportunity for students enrolled in horticulture.
2. There were many job opportunities in the writer's community for students with proper education, training, and experience in horticulture.
3. The number of high school dropouts decrease when educational opportunities that interest students are available.
4. Horticulture students earn/receive college credit for information learned at high school when they transfer to community college.
5. Goal #4 of the Essential learnings: Understand the importance of work and how performance, effort, and decisions directly affect career and educational opportunities.

Development of Support for the Study

During the fall of 1995, the writer (Patrick L. Oster) began discussing plans for developing a Tech Prep agreement in the area of horticulture between South Kitsap High School and South Seattle Community College with Dale Green, (Vocational Director for the South Kitsap School District), Steve Wilson, (Principal of the South Kitsap High School), Ken Watson of the Watson group, (consultants for South Seattle Community College), and members of the South Kitsap Agriculture Education Advisory Committee. These individuals encouraged and supported the idea of developing an articulation agreement for the benefit of students who attend South Kitsap High School and wish to pursue post-secondary education in the field of horticulture. Through their recommendation, the agreement between South Seattle Community College and South Kitsap High School was developed and presented to the South Kitsap School District where it will be available to students enrolled in horticulture classes for the 1996-97 school year.

Input from the above named groups and individuals influenced the writer's decision to proceed with the development of a Tech Prep agreement in Horticulture for South Kitsap High School.

Procedures

To obtain background information regarding School-to-Work and Tech Prep programs, an Educational Resources Information Computer Center (ERIC) search was conducted and information from the Washington State Board for Community and Technical Colleges, (SBTCC) was reviewed on existing Tech Prep program development. Additionally a hand search of information was conducted along with solicitation of nine (9) selected educational institutions from around the Puget sound to determine existing programs and the need for Tech Prep programs. They were:

South Seattle Community College
Seattle, Washington.

Federal Way School District:
Federal Way, Washington

Highline School District
Seattle, Washington

Renton School District
Renton, Washington.

South Kitsap School District
Port Orchard, Washington.

Seattle School District
Seattle, Washington.

Seattle Community College District
Seattle, Washington.

Walla, Walla Community College
Walla, Walla, Washington.

The Watson Group, Educational Consultants
Seattle, Washington

Development of the Articulation Agreement

After conducting an ERIC, and hand search of related literature, and analyzing data solicited from nine (9) Puget Sound Area horticulture programs, a consensus determination was made by the Vocational Director of South Kitsap School District and South Seattle community College to design an agreed upon program for horticulture. This program focused on the six (6) program areas listed below, which have been detailed in Chapter Four.

1. Survey of Landscape Industry
2. Greenhouse Operations
3. Fall Plant Identification
4. Winter Plant Identification
5. Spring Plant Identification
6. Principles of Horticulture Science

Subsequent dialogue between the South Kitsap School District Professional and Technical Education department and South Seattle Community College, focused on the considerations of developing a Tech Prep in Horticulture program. Based upon mutual concern for the needs of students pursuing technical/professional programs and in an effort to provide a continuing articulated program that builds on past learning experiences and eliminates unnecessary duplication of instruction was developed. The

current course offering at South Kitsap High School and South Seattle Community College were aligned into the following six (6) program areas.

PLANNED IMPLEMENTATION AND ASSESSMENT OF THE STUDY

Accordingly, the Tech-Prep in Horticulture program in chapter four was presented to the South Kitsap Board of Directors in the spring of 1996 to be used during the 1996-97 school year. The program was piloted during that year and recommended to continue with help of a student portfolio that must be kept by the students and the horticulture instructor.

As a result of this study, a six-part Tech-Prep in horticulture program was developed for use at South Kitsap High School, Port Orchard, Washington to assist secondary students in focusing their career choice in the following areas.

1. Landscape Maintenance
2. Greenhouse Operations and Management
3. Plant Scientists
4. Horticulturists

Horticulture students as well as faculty will participate in ongoing assessment of the Tech-Prep in Horticulture program at South Kitsap High School. The assessment process will include periodic surveys of faculty,

students, and administrators. The input from the surveys will be considered and programs modified as needed.

CHAPTER FOUR

The Project

The Tech Prep in horticulture program for South Kitsap High School which was the subject of this project, has been presented in Chapter Four, in six (7) parts, to coincide with the six (6) program areas available to secondary students.

1. South Kitsap Horticulture Program Overview
2. Survey of Landscape Industry
3. Greenhouse Operations
4. Fall Plant Identification
5. Winter Plant Identification
6. Spring Plant Identification
7. Principles of Horticulture Science

AN ADMINISTRATIVE GUIDE FOR DEVELOPING A
TECH PREP PROGRAM FOR HORTICULTURE
EDUCATION AT SOUTH KTISAP HIGH SCHOOL

South Kitsap School District

South Kitsap High School

Grades 10-12

by

Patrick L. Oster

TABLE OF CONTENTS

Part One - <u>South Kitsap Horticulture Program Overview</u>	P-4
Survey of Landscape Industry.....	
Greenhouse Operations.....	
Fall Plant Identification.....	
Winter Plant Identification.....	
Spring Plant Identification.....	
Principles of Horticulture Science.....	
Part Two - <u>Survey of Landscape Industry</u>	P-5
Career Opportunities.....	
Necessary Training.....	
Washington State Requirements.....	
Part Three - <u>Greenhouse Operations</u>	P-6
Plant Anatomy.....	
Crop Production.....	
Pest Control.....	
Lighting and Heating Systems.....	
Business Management.....	
Part Four - <u>Fall Plant Identification</u>	P-7
Plant Identification.....	
Plant Classifications.....	

Environment Requirements.....	
Care and Use.....	
Part Five - <u>Winter Plant Identification</u>.....	P-8
Plant Identification.....	
Plant Classifications.....	
Environment Requirements.....	
Care and Use.....	
Part Six - <u>Spring Plant Identification</u>.....	P-9
Plant Identification.....	
Plant Classifications.....	
Environment Requirements.....	
Care and Use.....	
Part Seven - <u>Principles of Horticulture Science</u>.....	P-10
The Scientific Method.....	
Classification and Naming.....	
Ecology.....	
Basic Chemistry.....	
Roots, Stems, Leaves, and Flowers.....	
Fruits and Seeds.....	

SOUTH KITSAP SCHOOL DISTRICT

HORTICULTURE PROGRAM

PART ONE

PROGRAM OVERVIEW

The South Kitsap School District Horticulture Program detailed in Chapter 4 was the end product of a year long dialogue that involved Vocational Administrators and teachers from the South Kitsap School District and South Seattle Community College. The six program areas/components have been presented on the following pages.

South Kitsap Horticulture Program Overview

Survey of Landscape Industry

Greenhouse Operations

Fall Plant Identification

Winter Plant Identification

Spring Plant Identification.

Principles of Horticulture Science

SURVEY OF LANDSCAPE INDUSTRY

The Survey of Landscape program area includes competencies relating to:

Career options in plant science and educational requirements, salary ranges, and locations of employment, identifying local Landscape/Horticulture businesses, listing careers relating to the Horticulture Industry, determining availability of Horticulture related jobs in local community, writing a report identifying the educational training necessary for those careers, identifying availability of training, and finally identifying requirements of the industry to pass the Washington State Nursery and Landscaping test or the Landscape Maintenance Exam.

GREENHOUSE OPERATIONS

The Greenhouse Operations program area includes competencies relating to:

Plant Anatomy, Plant Propagation, Growth Requirements, Proper Watering, Ability to produce a Crop, Skills in Pest Control, Skills in Lighting, Skills in Heating and Systems, Greenhouse Electrical Maintenance, Basic Plumbing, and Money Management and Cost Analysis, Nursery Management, Leadership, Proficiency Awards, and Contests.

FALL PLANT IDENTIFICATION

The Fall Plant Identification program area includes competencies relating to:

Identification of 100 fall plant names, able to demonstrate correct pronunciation of the scientific names, able to identify plants by common names, able to identify each plant by classification, know specific characteristics, environmental requirements, size, leaf form and care and use of plants.

WINTER PLANT IDENTIFICATION

The Winter Plant Identification program area includes competencies relating to:

Identification of 100 winter plant names, able to demonstrate correct pronunciation of the scientific names, able to identify plants by common names, able to identify each plant by classification, know specific characteristics, environmental requirements, size, leaf form and care and use of plants.

SPRING PLANT IDENTIFICATION

The Spring Plant Identification program area includes competencies relating to:

Identification of 100 spring plant names, able to demonstrate correct pronunciation of the scientific names, able to identify plants by common names, able to identify each plant by classification, know specific characteristics, environmental requirements, size, leaf form and care and use of plants.

PRINCIPLES OF HORTICULTURE SCIENCE

The Principles of Horticulture Science program area includes competencies relating to:

Ability to demonstrate the use of the scientific method, able to classify and name plants, able to describe the ecology and climate of plants, able to articulate processes involved in primary/secondary succession, able to examine and describe biomes, understand basic chemistry, identify plant anatomy and roots, describe the structure of stems, describe the structure of leaves, describe the structure of flowers and describe the structure of fruits and seeds.

SOUTH KITSAP SCHOOL DISTRICT

HORTICULTURE PROGRAM

PART TWO

SURVEY OF LANDSCAPE INDUSTRY

The following competencies were developed in an agreement between South Kitsap School District and South Seattle Community College in order to award college credit and advanced placement in the horticulture program at South Seattle Community College. This section describes the Survey of Landscape Industry course. Students work at their own pace while enrolled in South Kitsap High Schools horticulture program. Students were rated by the instructor describing the competency level in each of the identified areas. A scale of 1-4 was used 1= No Exposure, 2 = Limited Exposure, 3 = Competent, and 4 = Can Train Others.

Survey of Landscape Industry

- Career Opportunities
- Necessary Training
- Washington State Requirements



TECHNICAL COMPETENCIES

Name _____ High School _____ Phone _____
 Address _____ City _____ Zip Code _____
 Social Security No: _____
 Date of Enrollment _____ Year in School _____ Year of Graduation _____
 Date of Withdrawal _____ Total Class Hours _____ Total O.J.T. Hours _____
 Date of Completion _____ Total Shop Hours _____
 Absences: 1st Sem. ___ 2nd Sem. ___
 Work Based Learning Experience _____

Rating Scale

- 1 = No Exposure
- 2 = Limited Exposure
- 3 = Competent
- 4 = Can Train Others

SURVEY OF LANDSCAPE INDUSTRY LHO 100 - 2 CREDITS

1 **2** **3** **4**

1. Gather Information about Career Options in Plant Science, and Educational Requirements, Salary Ranges, and Locations of Employment.

2. List 10 Local Landscape/Horticulture Businesses That Are Related to the Horticulture Industry.

3. List 15 Possible Careers Related to the Horticulture Industry.

4. Determine the Availability of Horticulture Related Jobs in Your Local Community, Region, and State.

5. Write a Report Identifying the Education and Training Necessary to Qualify for 10 Specific Horticulture Careers, Including Salary Ranges for Those Careers.

6. Identify the Availability of Horticulture/Landscape Education and Training in Post Secondary Education in Washington.

7. Identify the Requirements of the Industry to Pass the Washington State Nursery and Landscaping Test or the Landscape Maintenance Exam.

SOUTH KITSAP SCHOOL DISTRICT

HORTICULTURE PROGRAM

PART THREE

GREENHOUSE OPERATIONS

The following competencies were developed in an agreement between South Kitsap School District and South Seattle Community College in order to award college credit and advanced placement in the horticulture program at South Seattle Community College. This section describes Greenhouse Operations course. Students work at their own pace while enrolled in South Kitsap High Schools horticulture program. Students were rated by the instructor describing the competency level in each of the identified areas. A scale of 1-4 was used 1= No Exposure, 2 = Limited Exposure, 3 = Competent, and 4 = Can Train Others.

Greenhouse Operations

- Plant Anatomy
- Crop Production
- Pest Control
- Lighting and Heating Systems



GREENHOUSE OPERATIONS LHO 111 - 4 CREDITS

1 2 3 4 grid of checkboxes

grid of checkboxes

grid of checkboxes

grid of checkboxes

grid of checkboxes

grid of checkboxes

grid of checkboxes

grid of checkboxes

grid of checkboxes

A.

Job Duty Plant Anatomy.

- 1. Describe Basic Parts of Plants and Describe Their Functions.
2. Dissect and Identify Parts of a Flower.
3. Name the Steps Involved in Pollination.
4. Name the Parts of a Seed and Describe the Functions of Each.

grid of checkboxes

B.

Job Duty Plant Propagation.

- 1. Take a Plant Cutting.
2. Define Plant Division and Separation.
3. Demonstrate Proper Seed Propagation.
4. Demonstrate Skill in Planting Plugs.

grid of checkboxes

C.

Job Duty Growth Requirements.

- 1. List and Define Functions of Three Major Plant Elements (N-P-K).
2. Interpret Fertilizer Labels.
3. Analyze Examples and Benefits of Organic and Inorganic Fertilizers.

grid of checkboxes

Job Duty

I.

Job Duty Skills in Cooling Systems.

- 1. Ability to Select Cooling Systems.
2. Identify and Describe Cooling Systems:
a. Fans.
b. Water Cooling Systems.
c. Shade Cloth.

J.

Job Duty Skills in Using Greenhouse Equipment.

- 1. Ability to Identify Fertilizing Equipment.
2. Ability to Identify Propagation Equipment.
3. Ability to Use Heat Control Equipment.
4. Ability to Label Equipment for Specific Use.

K.

Job Duty Skills in Labeling Crops.

- 1. Ability to Order Tags with Plug or Seed Orders.
2. Ability to Identify Labeling Techniques.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ments.

2. Demonstrate Skill in Fogging.
3. Ability to Use Drip Irrigation.
4. Ability to Hand Water.
5. Demonstrate the Use of a Water Schedule.

Job Duty

E. Ability to Produce a Crop.

1. Ability to Identify Propagation (i.e. cutting, seed, plug).
2. Ability to Maintain and Fertilize a Crop up to Sale/Completion.
3. Ability to Plant or Pot a Crop.
4. Ability to Market and Sell Products.

Job Duty

F. Skill in Pest Control.

1. Ability to Identify Plant Pests.
2. Ability to Identify Types of Pesticide Control.
3. Ability to Apply Pesticide.

Job Duty

G. Skill in Lighting.

1. Ability to Identify Plant Light Requirements.
2. Ability to Define Natural Lighting.
3. Ability to Define Artificial Lighting.
4. Ability to Use Shade Cloth.

Job Duty

H. Skills in Heating and Systems.

1. Demonstrate the Ability to Identify Plant Heat Requirements.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

Picture Tags, wrap tags, and Price Tags.

4. Ability to List Plant Requirements on Labels.

Job Duty

L. Mix Soil Media.

1. Ability to Identify Crop Soil Requirements.
2. Ability to Identify Types of Soil Medium.
3. Demonstrate Skill in Mixing Soil.
4. Ability to Sterilize Soil Through a Heating Process.
5. Ability to Define Parts of Soil Medium.
6. Ability to Identify Alternative Soil Medium (i.e. hydroponics).
7. Ability to Estimate Cost of Soil Medium.

Job Duty

M. Selection of Pots.

1. Ability to Select Size According to Greenhouse Space.
2. Ability to Select Container and Shape for Plant Resale.
3. Ability to Identify Different Types of Containers (i.e. plastic, clay, pulp).

Job Duty

N. Transplanting.

1. Ability to Transplant from Fog House or Misting Chamber to Flats or Containers.
2. Ability to Transplant from Seed Flats to Inserts.

1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

3. Ability to Transplant from Plugs to Containers.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

O. Job Duty
Greenhouse Electrical Maintenance.

1. Ability to Maintain Electrical Controls.
2. Ability to Maintain Wiring.
3. Demonstrate Skill with Electrical Safety.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

P. Job Duty
Basic Plumbing.

1. Ability to Solder Copper Pipe.
2. Ability to Thread Irrigation Pipe.
3. Ability to Weld Plastic Pipe.
4. Demonstrate Ability to Price and Select Proper Pipe.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

Q. Job Duty
Money Management and Cost Analysis.

1. Ability to Maintain Greenhouse Budget and Checkbook.
2. Ability to Analyze and Understand Basic Record Keeping.
3. Ability to Complete a Bid for a Horticulture Project.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

R. Job Duty
Work Ethic.

1. Demonstrate on a Daily Basis Good Work Habits (i.e. on time, good attitude, foresight, honesty).
2. Ability to Wear Proper Attire for the Job.
3. Ability to Follow Directions.
4. Ability to Ensure a Quality Project.
5. Ability to Communicate to Customers.

S. Job Duty
Types of Greenhouses.

1. Describe a Cold Frame/Lath House.
2. Identify the Following:
 - a. Quonset.
 - b. A-Frame.
 - c. Glass.
 - d. Fiberglass.
3. Identify Types of House Coverings.
4. Build a Model of a Greenhouse.

T. Job Duty
Tool Use and Safety.

1. Identify Proper Equipment Safety Manuals.



2. Skills to Read Safety Procedures for Equipment.
3. Skills to Operate Equipment in a Safe Manner.
4. Ability to Identify Pesticide Application Protection.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

U. Nursery Management.

1. Skills in Designing a Nursery.
2. Skills to Prepare a Nursery Plot.
3. Skills to Select a Nursery Stock.
4. Skills to Maintain Nursery Stock.
5. Skills to Market Nursery Stock.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

V. Leadership.

1. Analyze the Elements of Personal and Leadership Skills.
2. Interpret How Personal and Leadership Skills May Benefit You.
3. Skills to Develop Values, Missions and Goals of Leadership for the Horticulture Program.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

W. Proficiency Award.

1. Ability to Compete on the Basis of Proficiency.
2. Ability to Submit an Application for an Award.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

X. Contests.

1. Enter a Nursery/Landscape Contest at the Regional/State Level, if Available.
2. Conduct a Horticulture Demonstration for the Public.
3. Create a Landscape Design for Public View.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SOUTH KITSAP SCHOOL DISTRICT

HORTICULTURE PROGRAM

PART FOUR

FALL PLANT IDENTIFICATION

The following competencies were developed in an agreement between South Kitsap School District and South Seattle Community College in order to award college credit and advanced placement in the horticulture program at South Seattle Community College. This section describes the Fall Plant Identification course. Students work at their own pace while enrolled in South Kitsap High Schools horticulture program. Students were rated by the instructor describing the competency level in each of the identified areas. A scale of 1-4 was used. 1= No Exposure, 2 = Limited Exposure, 3 = Competent, and 4 = Can Train Others.

Fall Plant Identification

- Plant Identification
- Plant Classifications
- Environment Requirements
- Care and Use

FALL PLANT IDENTIFICATION LHO 115 - 4 CREDITS

1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

A. Identification of 100 Fall Plant Names.

1. Ability to Demonstrate Correct Pronunciation and Identification of 100 Fall Plants by Scientific Names, Including:

- a. Genus.
- b. Species.
- c. Origin of Names.
- d. Advantages and Disadvantages.

2. Ability to Identify All by Common Names, by Sight.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------



<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty
B. Classification.

Demonstrate and Identify Each Plant by Classification.

- a. Kingdom.
- b. Annual, Perennial, Biennial.
- c. Order.
- d. Family.
- e. Genus.
- f. Species.
- g. Variety.

1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty
C. Specific Characteristics.

1. Identify Each Plant by Reproduction Method (i.e. flowers, seeds).
2. Identify Propagation Methods for Each Plant (i.e. seed, cutting, division, layering).
3. Identify Each Plant for Hardiness Zone.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty
D. Environment Requirements.

1. Identify Soil Requirements for Each Plant.
2. Identify Exposure Preference.
3. Identify Feeding Requirements for Each Plant.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty
E. Size.

1. Identify Ultimate Spread for Each Plant.
2. Identify Ultimate Height for Each Plant.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty
F. Leaf Form.

1. Identify Leaf Form for Each Plant (i.e. oval, needle, cordate, ovate, round, spatulate, lanceolate, linear, or wedge shape).
2. Identify Leaf Arrangement (i.e. alternate, opposite, whorled, alternate compound, pinnate compound, and palmate).
3. Identify Plants That Are Deciduous-Broadleaf or Narrow Leaf.
4. Identify Plants That Are Evergreen-Broadleaf or Narrow Leaf.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty
G. Care and Use.

1. Identify General Care for Each Plant.
2. Demonstrate Correct Pruning.
3. Explain Use in Landscape (i.e. erosion control, privacy, weed control, ornamental, shade).

SOUTH KITSAP SCHOOL DISTRICT

HORTICULTURE PROGRAM

PART FIVE

WINTER PLANT IDENTIFICATION

The following competencies were developed in an agreement between South Kitsap School District and South Seattle Community College in order to award college credit and advanced placement in the horticulture program at South Seattle Community College. This section describes the Winter Plant Identification course. Students work at their own pace while enrolled in South Kitsap High Schools horticulture program. Students were rated by the instructor describing the competency level in each of the identified areas. A scale of 1-4 was used 1= No Exposure, 2 = Limited Exposure, 3 = Competent, and 4 = Can Train Others.

Winter Plant Identification

- Plant Identification
- Plant Classifications
- Environment Requirements
- Care and Use

WINTER PLANT IDENTIFICATION LHO 116 - 4 CREDITS

1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

A. Identification of 100 Winter Plant Names.

1. Ability to Demonstrate Correct Pronunciation and Identification of 100 Winter Plants by Scientific Names, Including:
 - a. Genus.
 - b. Species.
 - c. Origin of Names.
 - d. Advantages and Disadvantages.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

2. Ability to Identify All by Common Names, by Sight.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

B. Classification.

Demonstrate and Identify Each Plant by Classification.

- a. Kingdom.
- b. Annual, Perennial, Biennial.
- c. Order.
- d. Family.
- e. Genus.
- f. Species.
- g. Variety.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

C. Specific Characteristics.

1. Identify Each Plant by Reproduction Method (i.e. flowers, seeds).
2. Identify Propagation Methods for Each Plant (i.e. seed, cutting, division, layering).
3. Identify Each Plant for Hardiness Zone.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

Job Duty

D. Environment Requirements.

1. Identify Soil Requirements for Each Plant.
2. Identify Exposure Preference.
3. Identify Feeding Requirements for Each Plant.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

E. Size.

1. Identify Ultimate Spread for Each Plant.
2. Identify Ultimate Height for Each Plant.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

F. Leaf Form.

1. Identify Leaf Form for Each Plant (i.e. oval, needle, cordate, ovate, round, spatulate, lanceolate, linear, or wedge shape).
2. Identify Leaf Arrangement (i.e. alternate, opposite, whorled, alternate compound, pinnate compound, and palmate).

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------



<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Identify Plants That Are Deciduous-Broadleaf or Narrow Leaf.
4. Identify Plants That Are Evergreen-Broadleaf or Narrow Leaf.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty
G. Care and Use.

1. Identify General Care for Each Plant.
2. Demonstrate Correct Pruning.
3. Explain Use in Landscape (i.e. erosion control, privacy, weed control, ornamental, shade).

SOUTH KITSAP SCHOOL DISTRICT

HORTICULTURE PROGRAM

PART SIX

SPRING PLANT IDENTIFICATION

The following competencies were developed in an agreement between South Kitsap School District and South Seattle Community College in order to award college credit and advanced placement in the horticulture program at South Seattle Community College. This section describes the Spring Plant Identification course. Students work at their own pace while enrolled in South Kitsap High Schools horticulture program. Students were rated by the instructor describing the competency level in each of the identified areas. A scale of 1-4 was used 1= No Exposure, 2 = Limited Exposure, 3 = Competent, and 4 = Can Train Others.

Spring Plant Identification

- Plant Identification
- Plant Classifications
- Environment Requirements
- Care and Use

1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

- A. Identification of 100 Spring Plant Names.
1. Ability to Demonstrate Correct Pronunciation and Identification of 100 Spring Plants by Scientific Names, Including:
 - a. Genus.
 - b. Species.
 - c. Origin of Names.
 - d. Advantages and Disadvantages.
 2. Ability to Identify All by Common Names, by Sight.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

- B. Classification.
- Demonstrate and Identify Each Plant by Classification.
- a. Kingdom.
 - b. Annual, Perennial, Biennial.
 - c. Order.
 - d. Family.
 - e. Genus.
 - f. Species.
 - g. Variety.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

- C. Specific Characteristics.
1. Identify Each Plant by Reproduction Method (i.e. flowers, seeds).
 2. Identify Propagation Methods for Each Plant (i.e. seed, cutting, division, layering).
 3. Identify Each Plant for Hardiness Zone.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

- D. Environment Requirements.
1. Identify Soil Requirements for Each Plant.
 2. Identify Exposure Preference.
 3. Identify Feeding Requirements for Each Plant.



<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty
E. Size.

1. Identify Ultimate Spread for Each Plant.
2. Identify Ultimate Height for Each Plant.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty
F. Leaf Form.

1. Identify Leaf Form for Each Plant (i.e. oval, needle, cordate, ovate, round, spatulate, linear, or wedge shape).
2. Identify Leaf Arrangement (i.e. alternate, opposite, whorled, alternate compound, pinnate compound, and palmate).
3. Identify Plants That Are Deciduous-Broadleaf or Narrow Leaf.
4. Identify Plants That Are Evergreen-Broadleaf or Narrow Leaf.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty
G. Care and Use.

1. Identify General Care for Each Plant.
2. Demonstrate Correct Pruning.
3. Explain Use in Landscape (i.e. erosion control, privacy, weed control, ornamental, shade).

SOUTH KITSAP SCHOOL DISTRICT

HORTICULTURE PROGRAM

PART SEVEN

PRINCIPLES OF HORTICULTURE SCIENCE

The following competencies were developed in an agreement between South Kitsap School District and South Seattle Community College in order to award college credit and advanced placement in the horticulture program at South Seattle Community College. This section describes the Principles of Horticulture Science course. Students work at their own pace while enrolled in South Kitsap High Schools horticulture program. Students were rated by the instructor describing the competency level in each of the identified areas. A scale of 1-4 was used 1= No Exposure, 2 = Limited Exposure, 3 = Competent, and 4 = Can Train Others.

Principles of Horticulture Science

- The Scientific Method
- Classification and Naming
- Ecology
- Basic Chemistry
- Roots, Stems, Leaves, and Flowers
- Fruits and Seeds

1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

A. The Scientific Method.

1. Ability to Demonstrate the Use of the Scientific Method.
 - a. State the Problem.
 - b. Gather Information.
 - c. Form a Hypothesis.
 - d. Perform an Experiment.
 - e. Make an Evaluation/Conclusion.
2. Perform Investigations Concerning Plants Using the Scientific Method.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

B. Classification/Naming.

1. Ability to Describe Why Taxonomy Is Important to the Plant Kingdom.
2. Ability to Utilize a Dichotomous Key to Identify a Plant Species.
3. Demonstrate Why Scientific Names Are Important.
4. Demonstrate the Proper Usage of Scientific Names.
5. Ability to Apply Common Names to Appropriate Plants.
6. Can Explain the Limitations of the Common Name.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

Job Duty

C. Ecology-Climate.

1. Ability to Explain the Importance of Water in Determining Plant Growth.
2. Ability to Identify Plants with Xerophyte, Hydrophyte and Mesophyte Characteristics.
3. Interpret Temperature's Role in the Rate of Moisture Availability/Chemical Reaction Rate.
4. Identify Light's Role in Plant Determination, Recognizing That Some Plants Require More Light Than Others.
5. Interpret Different Scenarios, and Determine the Limiting Factor in Each.

Job Duty

D. Ecology-Succession.

1. Articulate Processes Involved in Primary Succession (determine the physical formation of soils; explain the process of species invasion of a previously unoccupied area).
2. Articulate Processes Involved in Secondary Succession (determine the different mature and immature ecosystems encountered during the process of going from an immature to a mature ecosystem).

Job Duty

E. Biomes.

1. Ability to Utilize the Term Biome Correctly.
2. Ability to Utilize the Eight Terrestrial Biomes.
3. Ability to Determine the Type of Plant Found within Each of the Different Terrestrial Biomes.
4. Ability to Examine Different Ecological Problems Associated with Each Terrestrial Biome.
5. Ability to Identify Aquatic Biomes.
6. Ability to Determine the Type of Plant Found within Each of the Different Aquatic Biomes.
7. Ability to Examine Different Ecological Problems Associated with Each Aquatic Biome.



1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

F. Basic Chemistry.

1. Interpret Correct Organic Compounds in a Plant Cell.
2. Ability to Determine Structure/Chemistry of Carbohydrates, Protein and Lipids.
3. Ability to Calculate the Role of Enzymes in Organic Chemical Reactions.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

G. Plant Anatomy-Roots.

1. Ability to Identify Basic Internal Root Anatomy.
2. Ability to Explain the Function of Each Internal Part of a Root.
3. Ability to Determine the Types of Root Systems.
4. Ability to Identify Basic External Root Systems.
5. Ability to Explain Functions of Each External Part of a Root.
6. Ability to Identify at Least Four Specialized Types of Roots.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

H. Structure of Stems.

1. Ability to Identify Basic Internal Stem Anatomy.
2. Ability to Explain the Function of Each Internal Part of a Stem.
3. Ability to Identify Basic External Stem Anatomy.
4. Ability to Explain the Function of Each External Part of a Stem.
5. Ability to Correctly Identify Monocotyledonous from Dicotyledonous Stems.
6. Explain Secondary Growth.
7. Identify at Least Four Specialized Types of Stems.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

I. Structure of Leaves.

1. Identify Basic Internal Leaf Anatomy.
2. Ability to Explain the Function of Each Internal Part of a Leaf.
3. Ability to Identify Basic External Leaf Anatomy.
4. Ability to Explain Functions of Each External Part of a Leaf.
5. Ability to Identify at Least Two Specialized Types of Leaves.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty

J. Structure of Flowers.

1. Ability to Identify Basic Internal Flower Anatomy.
2. Ability to Explain the Function of Each Internal Part of a Flower.
3. Ability to Identify Basic External Flower Anatomy.
4. Ability to Explain the Function of Each External Part of a Flower.
5. Identify the Complete Sexual Cycle of an Angiosperm.



1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Identify Complete from Incomplete Flowers and Perfect from Imperfect.
7. Correctly Utilize the Terms Monoecious and Dioecious.
8. Identify Different Inflorescence.
9. Ability to Determine Possible Vectors of Pollination by Observing Flowers.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Duty
K. Structure of Fruits/Seeds.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. Identify Simple from Compound Fruits.
2. Identify and Recognize the Function of the Basic Internal Anatomy of a Fruit.
3. Ability to determine the Type of Fruit by Using a Dichotomous Key.
4. Identify and Recognize the Function of the Basic Internal Anatomy of a Seed.
5. Demonstrate Familiarity with Seed/Fruit Dispersal Agents.
6. Recognize Steps/Agents Involved in Seed Germination.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECCOMONDATIONS

Summary

The purpose of this study was to develop a Tech Prep Program for horticulture education. This program focused on career goals of students enrolled at South Kitsap High School and South Seattle Community College. To accomplish this purpose, current research and literature on Tech Prep models, career paths, and the horticulture industry were reviewed. Additionally, selected materials were obtained from model Tech Prep programs throughout the State of Washington.

Conclusions

Conclusions reached as a result of this project study were:

1. Tech Prep is currently leading the United States in educational reform, and has a positive effect on curriculum and methods of instruction.
2. A Tech Prep in horticulture program effects the intensity, motivation, and relevancy of students enrolled in a horticulture course. It encourages students to continue post-secondary education leading to a college degree.

3. The Tech Prep in horticulture program developed as a result of this study, will serve as a valuable tool for the Professional Technical Education department of horticulture at South Kitsap High School.

Recommendations

As a result of this project, the following recommendations have been suggested:

1. Selected secondary students at South Kitsap High school will engage, document and utilize the Tech Prep in horticulture program to earn college credit at South Seattle Community College.
2. The results of the Tech Prep in horticulture program may be used as a model by other school districts and professional organizations.
3. Faculty members at South Kitsap High school will obtain proper training in Tech Prep and the use of the horticulture program.

REFERENCES

- Aring, M. (1993, January). "What the "V" Word is Costing Americas Economy," Phi Delta Kappan, Vol. 74, pp. 396-404.
- A.V.A. Guide to the School-to Work Opportunities Act, (1994). American Vocational Association.
- Billings, J. (1997, August). Essential Learnings: "Education Reform, Achieving the Goals." Superintendent of Public Instruction.
- Drucker, P. (1994, November). "The Age of Social Transformation," The Atlantic Monthly, pp. 41-45.
- Gough, P. (1993, October). "A Matter of Mindset," Phi Delta Kappan, Vol. 75, pp. 99.
- Gray, K. (1993, January). "Why We Will Lose: Taylorism in America's High Schools." Phi Delta Kappan, Vol. 74, pp. 370-374.
- Harris, C. and Birkenholz, R. (1994, January). "Implementation Strategies for Tech-Prep." Agricultural Education Magazine. Vol. 66, pp. 10-12.
- Hull, D. and Parnell, D. (1991). Tech Prep Associate Degree: A Win/Win Experience. Waco, Texas: Center for Occupational Research and Development.
- Mahler, M. and Vold, L. (1994, January). "Tech Prep- A Flood of Change," Agricultural Education Magazine, Vol. 66, pp. 7-9.
- O'Looney, J. (1993, January). "Redesigning the Work of Education," Phi Delta Kappan, Vol. 74, pp. 375-381.
- Osbourne, E. (1994, January). "Articulation and Integration - The Keys to Tech Prep," Agricultural Education Magazine. Vol. 66, pp.3.

Washington State Board for Community and Technical Colleges (1997, May). TheTech Prep Project pp. 1-4.

Weisman, J. (1993, January). "Skills in the School: Now It's Business' Turn," Phi Delta Kappan. Vol. 74, pp. 367-369.

Wirth, A. (1993, January). "Education and Work: The Choices we Face," Phi Delta Kappan. Vol. 74, pp. 360-366.

Appendix A

Horticulture Articulation Agreement

SOUTHWEST KING COUNTY TECH PREP CONSORTIUM

HORTICULTURE ARTICULATION AGREEMENT

Based upon mutual concern for the needs of students pursuing technical/professional programs and in an effort to provide a continuing articulated program that builds on past learning experiences and eliminates unnecessary duplication of instruction, the following are agreements to which we mutually subscribe in order to implement a student-based Tech Prep program:

1. Continuous Progress: Students who learn and demonstrate competence should be provided an opportunity to pursue learning on the basis of a continuum of skills and knowledge from their introductory courses (as early as Grade 9) until they have completed a training program (approximately Grade 14) or until they have achieved a desired training objective, employable skills, and/or the Associate Degree.
2. Competency-Based Learning Approach: Students should be involved in an instructional program which is based upon the attainment of competencies, rather than merely spending time in a classroom. This instructional approach operates under the following assumptions: that learning relies considerably upon the individual resourcefulness of the student, that the instructor acts as a facilitator and resource person, and that the student proceeds at their own pace based on individual learning style and application of previously learned skills and knowledge.
3. Curriculum: While there appears to be significant benefit to the student and the instructional process to adopt a common curriculum, this agreement is based upon mastery levels as developed by the faculty members of the represented institutions. These mastery levels will signify the attainment of competencies needed by students to progress through the training process, allowing flexibility as to the individual instructional techniques used within individual schools.
4. Applied Academics: The integration of instruction in academics, applied academics and technical skills is an integral part of this agreement, and will be facilitated by each party signing this agreement.

5. Student Competency Profile: A student record and measure of competencies will be recorded on a profile statement which will transfer with the student to other institutions. The profile will reflect the degree of attainment each student has achieved in the various skills as identified by the faculty members. Initial entry level skills will be identified and noted on the student profile.

6. Rating of Progress: Competencies will be rated using a scale which has been defined and validated by program instructors and members of their advisory committees. A recommended scale might be:

- 1 – Exposure Only
- 2 – Limited Practice
- 3 – Moderately skilled
- 4 – Skilled
- 5 – Can Train Others

The above scale is only a suggested method of assessing student progress. Components of the scale could vary depending upon standards and expectations within the industry. For example, some programs may choose to eliminate the "no exposure" level or use problem solving or analyzing data/information as one of the higher level components of the scale. Whatever method is used, the program instructors and advisory committees must define mastery in terms of the scale. It is then assumed in order for a student to progress to the next level of skill development, he or she must obtain the Mastery rating on the Competency Profile, i.e. "3". Rating above the Mastery level should be transferred at above average levels of development.

7. Advancement: Enrollment and progress in technical/professional programs will not be based upon a system of quarterly classes, but shall be based upon computed competency units consisting of pre-determined levels of knowledge and skills.

8. Evaluating Student Progress: Evaluation of student progress shall be based upon demonstrated cognitive knowledge at a minimum level of competency, and the satisfactory demonstration of the ability to perform the task in a practical environment. Student evaluation will reflect the attainment of minimum levels of performance, before proceeding to more technically difficult skills development.

9. Matriculation Procedures: Students with acceptable ratings on the Student Competency Profile will be accepted for advanced placement at all of the Highline, Federal Way, Renton, South Kitsap and South Central School District High Schools, the Sea-Tac Occupational Skills Center, and South Seattle Community College. Beginning with the 1995-1996 school year and thereafter, all students satisfactorily completing skills competencies in the articulated programs will be accepted at the appropriate level of skill development by the other schools participating in this agreement.

10. Satisfactory Transfer Status & Awarding of College Credits: Students from area Tech Prep high schools and the Occupational Skills Center will be eligible for advanced placement in the respective South Seattle Community College program. The level of advanced placement will directly relate to competencies demonstrated prior to entering the college program. Such students will present the college advisor with a student portfolio which will include a competency profile and resume for advanced placement. College credit can be awarded utilizing the college's advanced placement procedure for sequential classes. Because each high school will have different curricula and equipment, a reasonable structured agreement with each school will be developed. The amount of time the student may have put into the high school program, and other factors will need to be considered; however, it should be possible to say satisfactory completion of specific segments at each high school equals specific classes at South Seattle Community College.

11. Transfer of Students Who Are Working Toward Competencies: In order to encourage the post-secondary training of high school graduates whose Student Competency Profile rating does not meet the standards for transfer of credit, the college instructor may continue with the students training at the existing level until an acceptable level of competence and credit are obtained. The articulated agreement recognizes the importance of assisting students, including those eligible students with disabilities, toward competency levels that could lead to employment.

12. Tech Prep Standing Committee: The faculty representatives of the institutions signing this agreement will meet no less than one time per year for the specific purpose of discussing any particular issues or problems that may arise in the articulation process. These meetings should include appropriate industry representatives, vocational directors, and other administrators in order to provide for the timely review of the assurances set forth in this agreement. These meetings should address marketing strategies, instructional improvement, technical assistance, student follow-up, competency levels, enrollment levels, articulation with Advisory Committees, and a review of the transfer agreement. During the first year of this agreement, this standing committee should meet at least quarterly.

13. Marketing and Promoting Tech Prep: These technical/professional programs, in cooperation with the business and industries in the community, have determined that a need exists to encourage and promote careers in these areas. It is important to provide information to students and their parents about the opportunities available in these career areas. The institutions participating in this agreement commit to joint marketing efforts to provide students realistic information about the importance of career choice, educational preparation for work, and the values of Tech Prep.

14. Counseling and Advising: Appropriate counseling and advising of students is very important to the success of this Tech Prep agreement. The institution signing this agreement will provide necessary in-service training to counselors and advisors in order to assure that students have every opportunity to make good decisions concerning their future employment.

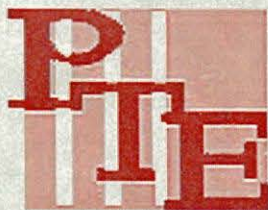
15. Good Faith Agreement: The institutions signing this agreement enter into this consortium in order to provide the best possible instruction to the students. The members of this consortium will operate in good faith and do everything possible to assure that this articulated, competency-based curriculum will be successful.

HIGH SCHOOL	COLLEGE
High School 2-year Horticulture Program	LHO 100 2 credits
	LHO 111 4 credits
	LHO 115 4 credits
	LHO 116 4 credits
	LHO 117 4 credits
	LHO 150 3 credits
Applied Math	MAT 111 5 credits
Business Communications	ENG 105 3 credits
Principles of Technology	PHY 111 5 credits
Accounting 1st year	ACC 110 5 credits

Appendix B

Professional Technical Education Portfolio

SOUTH KITSAP HIGH SCHOOL



Professional Technical Education

PROFESSIONAL TECHNICAL EDUCATION PORTFOLIO

**SOUTH KITSAP HIGH SCHOOL
PROFESSIONAL DEVELOPMENT PORTFOLIO RUBRIC**

CONTENT	Beginning	Proficient	Strong
LETTERS	Introduces self, career goals and personal goals	Relates to specific training plan for achieving goals	Summarizes specific skills and abilities and relates portfolio work to industry
RÉSUMÉ & APPLICATION	Chronological and up-to-date: Name/address/phone Work History Education Interests Free of spelling, punctuation & Grammatical errors Printed on quality paper	Clearly states job/career objective Identifies transferable job skills	Connects transferable and specific job skills to career goals Reflects achievements Industry specific format
REFERENCES	Lists 3-5 professional references including: Name Title Company Address & phone	List 3-5 references, including both personal and professional Identifies connection with references One letter of recommendation	Includes 3 letters of recommendation to match reference page
COMPETENCY / CAPACITY PROFILE	Is included in portfolio	Is included and is up-to-date	Includes additional self-statement, summary of accomplishments, and profile
WORK SAMPLES Vocational Program Specific: Photos, videos, written work, art work, computers disks.	Sample/s of work	Sample/s of work with documentation of entry-level performance	Sample/s with self-assessment and ability statement exceeding entry
ENHANCEMENT / WORK BASED LEARNING	Reflected in résumé: name of site, duties and responsibilities Training Agreement & Evaluation	Letters of Recommendation and evaluations	Letters of recommendation, evaluations applicable to industry, self-assessment and training plan
AWARDS & COMMUNITY SERVICE	Participates in community service and classroom leadership activities	Shows specific examples of receiving awards and recognition from the school and community	Student plans, organizes and sets into action a community service project, including journal, time log and self-assessment
CAREER EXPLORATION	Samples of WOIS, Choices, Careers, & Occupational Outlook Handbook ect.	Written career exploration project	Job Shadow or Community service, written assessment of experience
TEST SCORES, GRADES, TRANSCRIPTS	Current transcripts, grades, and test scores are included	Current transcripts, grades, and test scores are included	Current transcripts, grades, and test scores are included

QUALITY	Beginning	Proficient	Strong
APPEARANCE/FIRST IMPRESSION OF PORTFOLIO	Bound, clean, unmarked, neat, and appealing	Inviting quality, industry specific, professional overall presentation, consistency of style Helps communicate a positive message	Creative and personalized in a professional manner
ORGANIZATION	Section dividers labeled for basic content, plastic page protectors, materials neatly bound in binder	Sequence of information is easy to access, allows viewer to maneuver throughout the portfolio Neat and functional, logically organized for interview	Reflects deeper understanding of who the audience is and how portfolio should be utilized
WRITING SKILLS			
IDEAS & CONTENT	Disconnected thoughts, limited topics	Topic is defined, limited support	Topic is developed with relevant details
ORGANIZATION	Sequencing needs work, lacks direction	Recognizable introduction, conclusion, and transitions	Effective sequencing, transitions, introduction and conclusion
VOICE	Hard to sense the writer, uninvolved	Sincere but not fully engaged, not compelling	Individualistic, expressive and engaging
WORD CHOICE	General, vague language, limited vocabulary	Correct, adequate language, functional use of technical words	Specific and precise, lively verbs, natural, interesting language
SEQUENCE FLUENCY	Incomplete, rambling, choppy, awkward sentences	Mechanical, grammatical, varied sentences	Easily flowing, rhythmic, varying in length and structure
PRESENTATION			
VERBAL COMMUNICATION	Answers questions directly Communicates on a functional level General awareness of audience	Responses are relevant to industry & specific job Pleasant voice that connects with the audience Shows interest & enthusiasm Utilizes industry specific terminology Communicates trust & warmth in an earnest & pleasing manner	Anticipates questions & formulates answers Redirects discussion back to strengths Clear, precise & convincing, articulates concepts & ideas Tone & voice modulation convey goal oriented message

	Beginning	Proficient	Strong
NON-VERBAL COMMUNICATION	Shakes hand Greets audience Makes eye contact Apparel is neat and clean Shoes are clean/polished Personal grooming and accessories do not detract from focus of presentation	Posture demonstrates self assurance Handles portfolio materials properly Apparel and grooming are specific to job/industry	Mannerisms reflect competence, poise, and self-awareness Apparel and grooming indicate a desire to advance
PROFESSIONALISM	Presents portfolio contents Acknowledges questions Walks out at conclusion	Industry requirements set focus of presentation Evidence of skills, abilities, knowledge, and currency of training Responds to questions and maneuvers through portfolio with flexibility and accuracy Concludes with summary	Career goals set focus of presentation Evidence of training for future growth Retains focus of presentation Concluding summary relates presentation to career goals

TECH PREP PORTFOLIO

Student Name: _____

Instructor Name: _____

Date Submitted: _____

Tech Prep Program: _____

Transfer to _____ College

Table of Contents

1. Career Exploration
2. Employment Preparation
3. Competency Check list
4. Work Samples
5. Work Based Learning
6. Awards and Community Service
7. Test Scores / Grades / Transcripts

**Student & Teacher Verification Checklist
Presentation of Portfolio Continued**

Voice

Student exhibits voice:

- Quality
- Pitch
- Articulation
- Pronunciation
- Force

Student Verification	Teacher Verification

PROFESSIONALISM

General Effect

Student's presentation is interesting, understandable, convincing, pleasing, and holds attention

--	--

Ability to Respond to Questions

Student has ability to answer questions on presentation which are asked by evaluators indicating originality, familiarity, and ability to think quickly.

--	--

CAREER EXPLORATION

This section should include copies of all career exploration surveys you have taken as well as any information on careers you may have researched. These surveys may include some of the following:

- "Clues" WOIS
- "Interest Check List" Choices
- "Career Quest" Petersons
- Job-O
- COPS
- Kuder

Helpful Hints:

1. These surveys may help you identify jobs or fields of study that contain subjects, skills, or working conditions that are of interest to you.
2. You should explore all the jobs of a recommended career cluster; you may be surprised by the variety of jobs within a single career cluster.

P
T
E

Professional Technical Education

Student & Teacher Verification Checklist Career Exploration

Learning Style

Determine own learning style after assessment @ Career Center:

Student Verification	Teacher Verification

Interest Inventories

Completed software:

"Clues" WOIS

"Interest Check List" Choices

"Career Quest" Petersons

Completed paper/pencil inventories:

Job-O

Major/Minor Finder

Career Decision Making System

Vocational Preference Making System

COPS

Kuder

Strong Interest Inventory

Other:

Personality Temperament

Complete "Please Understand Me"

Identify relevant occupations

EMPLOYMENT PREPARATION

This section should include your most current résumé, job application, cover letter, and references. Your résumé lists all of your occupational, educational and volunteer experiences to date. It may include references, hobbies, and other pertinent data. You should include references from sources such as teachers, counselor, employers, volunteer activity advisors, or other who will be willing to give you a good recommendation.

Helpful Hints:

1. Follow the check list provided to ensure all components of each of these documents are included.
2. Letters of recommendation may be required when applying for post-secondary schooling, scholarships, or employment.
3. Copies of recent application are useful when filling out new applications.



Professional Technical Education

Reference Page

Student has listed 3-5 references (people in a supervisory or professional role)
Reference includes all required information (name, title, company, address & phone)
Follows the general font and format used on other documents
Individuals used have been contacted
Reference page is printed on quality paper - 24lb. cotton weight

Student Verification	Teacher Verification

Student has mastered the reference page

--	--

Thank You Letter

Letter clearly states an appropriate hypothetical response scenario
Letter makes reference to one specific point of the interview
Free of grammatical, spelling, and punctuation errors
Follows the general format and font as résumé
Letter uses appropriate spacing and format
Printed on quality paper - 24lb. cotton weight

Student has mastered the Thank You Letter

--	--

Letter of Recommendation

Student has obtained an actual letter of recommendation from one of the references listed on the reference page.
Student understands the person may be contacted for verification

Completed Employment Section

Student has completed all the documents listed in a professional manners. All documents follow the same format and are printed on quality paper. The documents are placed in order in a professional portfolio folder. The documents are error free and suitable for distribution.

--	--

— COMPETENCY CHECKLIST —

This section should include the agreed upon checklist for your Tech-Prep program. Make sure your competency checklist is completed by both you and your advisor.

Helpful Hints:

1. Discuss the competency checklist with your advisor to ensure proper completion.
2. Keep in contact with the Community College to ensure a smooth transition of credit from high school to college.

P
T
E

Professional Technical Education

WORK SAMPLES

This section should include samples, pictures, or tapes of your work in language arts, math, science and professional technical areas. It should also include reports and papers that demonstrate your ability to use the English language effectively. These samples can be any piece of work in which you have particular pride and best illustrate your talents.

Helpful Hints:

1. These samples can greatly influence scholarship committees, college/trade school admission committees, and employers in their selection process.
2. You should show your full range of capabilities, not just what you think others may want to see.
3. These reports and papers come from any classwork, such as a research paper or biology laboratory observation report.
4. If you can read and write in a second language, then include samples of that language in this section as well.



Professional Technical Education

Student & Teacher Verification Checklist Writing Skills

Ideas & Content

Well defined topic with supporting evidence
Content is interesting and well thought out

Student Verification	Teacher Verification

Organization

Recognizable introduction, body, conclusion, & transitions
Support for main points is relevant & organized
Documentation, if necessary

Word Choice

Appropriate word choice for document
Use of additional action verbs and adjectives

Sequence Fluency

Exhibits logical, grammatical varied sentences
Varies in length and structure

— WORK BASED LEARNING —

This section should include training agreements and evaluations of your supervised experiences in employment.

Helpful Hints:

1. You may acquire these agreements and evaluations from any one of the Professional Technical Education courses.
2. You should work with an instructor or advisor of a PTE course to develop a plan for your work experience.



PTE

Professional Technical Education

AWARDS

COMMUNITY SERVICE

This section should include all awards and certificates of achievement that you have received throughout your high school career. You should include any awards or certificates of training received through jobs or cooperative work experience programs. You should also include examples of awards specifically for community service acts. You may also include student plans, goals, timeline and assessment of community service projects.

Helpful Hints:

1. These awards show your accomplishments in and out of school.
2. These achievements show school counselors and future employers your scholastic and employment talents and interest.
3. Examples of community service projects show future employers your ability to become an integral part of your community.



Professional Technical Education

TEST

SCORES/GRADES/TRANSCRIPTS

This section will consist of all accumulative grades and transcripts received during and after your Freshman year of high school. It will also include all scholastic placement and aptitude test scores beginning with your sophomore year of high school. These tests can be a combination of the following.

- PSAT/NMSQT (Preliminary Scholastic Aptitude Test / National Merit Scholarship Qualifying Test)
- SAT (Scholastic Aptitude Test)
- ACT (American College Test)
- ASVAB (Armed Services Vocational Aptitude Battery)
- CAPS (Career Ability Placement Survey)
- CFAS (Curriculum Framework Assessment Survey)
- Any other scholastic or advanced placement test scores

Helpful Hints:

1. Having copies of your previous grades will help your school counselor and you determine your high school program options.
 2. Grade information will be needed when applying for various post-secondary educational programs and scholarships.
 3. Test scores will assist you as well as your high school and post-secondary educational counselor(s) in selecting the most appropriate educational program options.
-