CAREER AND LIFE SKILLS EDUCATION

RENTON SCHOOL DISTRICT #403

Renton, Washington

MIDDLE SCHOOL TECHNOLOGY EDUCATION

Curriculum Guide

Approved by the Board: September 22, 2004

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TABLE OF CONTENTS

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A basic function and duty of a free society is the education of its children, youth and adults.

It is the responsibility of the schools to provide each student with the opportunities necessary to develop the scholarship, skills and attitudes which will enable the student to achieve mental, physical, emotional and social maturity.

Further, each student should, as a result of the school experience, be able to make decisions and to accept responsibility for those decisions.

POLICY: 6001
ADOPTED: February 3, 1977
Renton School District No. 403
Renton, Washington

Renton School District #403 recognizes the need for every graduate to have acquired job entry skills or at least to possess a level of knowledge and skills permitting continued training after high school.

RENTON SCHOOL DISTRICT #403
Renton, Washington

General Instructional Goals
Policy 6010

The Renton School District fosters an educational process which helps all students achieve at their highest potential.

The Renton School District:

LEARNING

- Offers a curriculum which prepares our students for the future.
- Emphasizes that diversity contributes positively to the individual and to the community.
- Provides learning experiences matched to the needs, interests, and abilities of our diverse student population.
- Extends learning opportunities beyond the school.

INSTRUCTION

- Offers a variety of high quality instructional resources and services to students, staff, and community.
- Supports multiple instructional strategies.
- Provides resources and opportunities for continuing professional development of our staff.
- Conducts ongoing evaluations of our instructional programs.
- Maintains safe and inviting facilities that are conducive to learning.

COMMUNITY

- Creates partnerships which involve students, parents, staff and other community members and organizations.
- Promotes effective communication.
- Values and encourages development of a spirit of community service.
- Respects the rights and responsibilities of all.

As a result of the educational process in Renton, students will understand and apply:

Language skills including reading, writing and communication, with opportunities to learn world languages.

Mathematics skills including concepts, procedures, problem solving, reasoning, and mathematical language.

Science Skills including concepts, principles, and the scientific process.

Social studies skills, concepts, and processes - emphasizing history, geography, economics, international perspectives, multiculturalism, and participatory democracy.

Arts and humanities skills, concepts, and processes to create, perform, and solve problems and respond effectively.

Health and physical education skills, concepts, and processes to promote lifelong physical, mental and social well being.

In order to strengthen the above curricular areas, Renton students will understand and apply:

Thinking skills including the ability to - gather and analyze information, think logically, critically and creatively, integrate experience and knowledge in making reasoned judgments, and solve problems.

Career and life skills necessary for successful and responsible participation in family, work and community.

Technological skills to support learning, problem solving, and communication.

Skills necessary to be a lifelong learner and a contributor to the general welfare and the quality of life for all.

EVALUATION: The Renton School District regularly reviews, evaluates and modifies these General Instructional Goals to meet the changing needs of students, staff and community.

CAREER AND LIFE SKILLS EDUCATION

RENTON SCHOOL DISTRICT #403
Renton, Washington

Program Goals

GOAL 1: PROVIDE HIGH QUALITY CAREER AND LIFE SKILLS EDUCATION PROGRAMS AND SERVICE

Objectives:

A. Assure that students completing Career and Life Skills Education programs have technical and behavioral competencies and basic skills sufficient to succeed in the workplace or higher education.

B. Establish course and/or program transferability and articulation processes among K-12, community and technical colleges, private schools, colleges and universities, industry, apprentice-related training, and military training.

C. Establish and regularly review standards for all Career and Life Skills Education programs.

D. Evaluate Career and Life Skills programs based on standards, objectives, placements, job performance, costs, and community/industry acceptance.

E. Utilize global, national, state, regional, and local data and advisory committee recommendations to identify appropriate curriculum and course offerings, program standards which meet the need of families, communities, business and industry.

F. Provide facilities, equipment and instructional programs which meet the needs of a changing workplace.

G. Revise or discontinue these programs that no longer meet the needs of students, business, labor, industry, and/or the community.

H. Provide qualified instructors and administrators for Career and Life Skills Education based on relevant certification standards.

I. Develop and utilize competency-based curricula for Career and Life Skills Education programs.

GOAL 2: CONTRIBUTE TO THE ECONOMIC DEVELOPMENT OF THE STATE

Objectives:

A. Facilitate cooperation between public and private sector entities.
B. Establish new Career and Life Skills programs based on existing and projected employment needs/demands and entrepreneurial opportunities.

C. Work cooperatively with the public and private sectors, economic development organizations, labor, and educational institutions to provide creative, targeted programs that meet the needs of youth in economically depressed areas.

D. Provide family life education programs which serve to strengthen families and

contribute to the effectiveness of workers in managing their consumer and family roles and in their careers.

E. Strengthen management skills for those seeking employment in worker owned and managed businesses.

F. Create a stronger working partnership with Team Washington and other economic agencies and the associate development organizations.

GOAL 3: ASSURE ALL INDIVIDUALS EQUAL ACCESS TO CAREER AND LIFE SKILLS EDUCATION PROGRAMS, SERVICES, AND ACTIVITIES

Objectives:

A. Provide Career and Life Skills programs, services, and activities that are free from racial, socio-economic, age, ethnic or sex bias, discrimination or stereotyping.

B. Provide access to barrier-free Career and Life Skills Education programs.

C. Actively recruit under-represented groups to all aspects of Career and Life Skills Education.

D. Provide supportive services which promote entrance and success in Career and Life Skills programs.

GOAL 4: PROVIDE/UTILIZE AN INTEGRATED STATE PLANNING PROCESS

Objectives:

A. Involve business, industry, agriculture, labor and other governmental and educational agencies in the planning processes at the state and local levels to ensure that establishment of delivery objectives and budget priorities.

B. Identify instructional area/programs based on demand, placements, training needs, program costs, and follow-up.

C. Utilize local, regional, state, national and global employment data, trends and advisory committees/organizations in identifying program offerings.

GOAL 5: PROVIDE AND MARKET CAREER AND LIFE SKILLS EDUCATION

Objectives:

A. Increase public awareness, understanding, and acceptance of Career and Life Skills Education.

B. Actively involve students, parents, community leaders, legislators, labor representatives, business organizations, industry, representatives, and other decision-makers from state and local arenas in Career and Life Skills Education program events and issues.

GOAL 6: PROVIDE INDIVIDUALS WITH CAREER DEVELOPMENT PROGRAMS AND EXPERIENCES

Objectives:

A. Provide career orientation, exploration, occupational information, self-appraisal, and educational planning.

B. Provide instruction in job search, job retention and job change skills and further education pursuits.

C. Assure that Career and Life Skills Education programs encompass demands of today's workplace and include attitudinal, employability, leadership, basic interpersonal, and job specific skills.

GOAL 7: ASSURE A QUALITY STAFF DEVELOPMENT PROGRAM

Objectives:

A. Provide appropriate channels for advisory committee recommendations in the program and policy-making process.

B. Provide in-service training opportunities for local advisory committee members.

C. Provide in-service training for administrators and Career and Life Skills instructors regarding the effective use of advisory committees.

CAREER AND LIFE SKILLS EDUCATION
RENTON SCHOOL DISTRICT #403
Renton, Washington

Program Description

Renton School District #403 operates a comprehensive Career and Life Skills Education Program through its three comprehensive high schools and two alternative programs. The district also participate a countywide Tech Prep consortium with local community, technical colleges as well as universities. This partnership allows students to earn college credit while still enrolled in high school programs. Secondary and post-secondary curricula are coordinated and students master and achieve skills, concepts, and technical competencies in high school that articulate with college programs. Students earn credit towards high school graduation and college technical programs at their home high schools.

The focus has changed in recent years from an emphasis on only job preparation to one of career exploration and support of core academic skill development. While skill development and employment readiness is still a primary goal, emphasis has been placed on career exploration, career pathway preparation, and post-secondary articulation.

The **Family and Consumer Science Education Program** is offered at Hazen, Lindbergh, Renton, Black River High Schools, and Sartori Education Center. The program is comprised of the following: American Sign Language 1-6; Careers in Education; Child Development; Culinary Arts 1-4; Design; Health; Independent Living; Leadership in Family and Employment (L.I.F.E. 101); and Personal Fitness. School district and community sites provide applied work-based learning opportunities for program students.

The **Business Education Program** is offered in the District's three comprehensive high schools and two alternative high school sites. The program consists of technical business related classes sequentially arranged into a course of instruction leading to a Certificate of Proficiency or Mastery to facilitate job placement or post secondary articulation. Industry and professional certifications are also a goal for participating students. These courses are as follows: Accounting 1-4; Business Communications; Business Law; Business Management; Computer Program Design 1-2; Electronic Math Applications; Introduction to Information Technology; Information Technology 1-2; Information Technology-MultiMedia; Information Technology-Project Management; Principles of Business; Recordkeeping; Web Site Development 1; and Yearbook. Several of the programs are often arranged and blocked with language arts programs to support program integration and technology use in the writing process.

A comprehensive **Work-based/Work-site Learning Program** is offered in all of the facilities in the Renton School District. This program couples on-the-job experience and related classroom training to prepare students for employment during and beyond high school. The **Marketing Education Program** which offers Introduction to Marketing 1-2, Advanced Marketing 1-2, Marketing-Entrepreneurship, Marketing Education Seminar 1-2, and **Career Choices Programs** provide students the opportunity to combine related classroom instruction and paid work experience to earn high school credit. These programs assist and support students as they make the transition from school to work. **Volunteer experiences**, **Internships**, **Job Shadows**, and **Service Learning** are also strong components of this community based applied experiences.

The community also plays a vital role in other programs offered through the Renton School District. The **Athletic Trainer/Sports Medicine Programs** is reliant on clinical training stations and coordinated work experiences for students through local health and physical therapy facilities and community hospitals. This program is offered to all students in the Renton School District but operates only at Hazen High School and Sartori Education Center.

Technology Education Programs are offered at all three comprehensive high school facilities, and the Sartori Education Center. These programs are often integrated with the Science and Math departments to support applied learning and the development of technical skills and competencies for all students. Courses in this department are: Automotive Service Technician 1-2; Building Maintenance Technology 1-2; Computer Aided Design and Drafting 1-6; Computer Graphics 1-8; Construction and Manufacturing

Technology 1-6; Fundamentals of Networking Technology 1-4; Jewelry Manufacturing 1-2; Light Duty Mechanics and Related Careers 1-2; Power Mechanics 1-2; Principles of Technology/Robotics 3-4; and Video Production 1-2.

Integrated instruction has been the focus of the Career and Life Skills Education instructional team for a number of years and the results can be seen throughout the program in each of the secondary schools. Several programs have been launched and are operating very successfully in all of the secondary sites. While these programs qualify for career and technical education funding, the District has made the commitment to operate them collaboratively with a related academic instructor. These **Applied Career and Technical Education Approved Programs** are titled: Applied Communications; Applied Mathematics; Material Science Technology 1-2; and Principles of Technology 1-2.

Renton School District has made a commitment to provide career and technical education instruction and job preparation opportunities for Special Needs students in addition to mainstreaming them, when appropriate. In order to have enough students to support several offerings, the district has entered into interdistrict cooperative agreements with surrounding school districts to accept students on a space available basis. There are three such **special programs**: **Building Maintenance** operates at the Sartori Education Center; the **Career Ladders/Community Classroom** is offered at Valley Medical Center; and the **Horticulture/Landscape Design 1-2 Program** is operated at Black River High School.

CAREER AND LIFE SKILLS EDUCATION

RENTON SCHOOL DISTRICT #403
Renton, Washington

Mission Statement

The mission of Career and Life Skills Education in the Renton School District #403 is to prepare all learners for successful roles in families, careers and communities.

THREE BELIEFS

A. Beliefs about individual needs

1. All learners have unique gifts and talents and can be successful.
2. All learners must develop self-esteem and personal confidence for productive roles in society.
3. All learners need to have and attain personal and career goals, arising from a lifespan approach to personal growth and career development.

B. Beliefs about society's expectations

1. All learners must be prepared to become ethical, responsible and

contributing world citizens.

2. All learners must adapt to change and participate in lifelong learning.
3. All learners must prepare for family roles and to balance work and family responsibilities.
4. All learners must develop essential creative/critical thinking, problem solving and communication skills.
5. All learners must value and have an appreciation for diversity in their schools, communities and workplaces.
6. All learners must recognize the impact of productive work on our economy.

C. Beliefs about systems that care for and support learners

1. All learners must have equitable access to a quality education.
2. All learners deserve to participate in learning systems where programs are mutually reinforcing and interdependent and where learning is related to life applications.
3. All learners must discover that school is part of a broader set of community resources they must access for learning and for achieving success in life.
4. All school programs must be developed in cooperative with family, business, labor and community representatives.
5. All staff must be accountable to ensure that all learners have the opportunity to establish and reach their goals.

MIDDLE SCHOOL TECHNOLOGY EDUCATION

Washington State Essential Academic Learning Requirements

MIDDLE SCHOOL TECHNOLOGY This Career and Life Skills class supports the Washington State Essential Academic Learning Requirements. **COURSE OBJECTIVES:**	**ARTS**	**COMMUNICATION**	**MATHEMATICS**	**SCIENCE**	**WRITING**	**READING**
Unit 1: Career and Life Skills		X	X	X	X	X
Unit 2: Communication	X	X	X	X	X	X
Unit 3: Construction/Manufacturing	X	X	X	X	X	X
Unit 4: Energy, Power, Transportation	X	X	X	X	X	X

MIDDLE SCHOOL TECHNOLOGY EDUCATION

History of Course Development

The program has evolved over the past thirty years from a general shop and project based experience to a process oriented construction activity. Students now focus on the development of work readiness skills, career awareness and exploration, the integration of core academic skills, and the development of systems and processes.

Technology is the systematic application of knowledge to satisfy needs and wants and extend human capability. Middle School Technology Education is an activity-oriented, lab program that develops proficiencies in the design, problem solving, and decision making process. It demonstrates the impact of technology on individuals, society and the environment. It is designed to assist in teaching skills needed for high school technology courses related to careers in architecture, engineering, construction, manufacturing, landscaping, design, and graphic arts.

Technology Education lab is a series of exploratory elective courses for 6th, 7th, and 8th grade students. Proper and safe tool use, craftsmanship, and the ability to follow instructions are critical parts of the learning process. The teacher's role is to be an information resource and to offer activity problems that students solve in a safe work environment. Students experiment with options, demonstrate creativity and develop original ideas.

Middle school technology students explore physical concepts such as aerodynamics, magnetic levitation, and manufacturing/construction technology by completing activities that

require individual designing, evaluation, and modification.

Testing equipment such as wind tunnels, timing systems, and other measurement devices allow students to evaluate their manufactured designs in objective terms. The teacher often produces and modifies these activities based on his/her own specific abilities and knowledge.

Computers, manufacturing tools, and testing equipment are used to study technology concepts. Students imagine individual solutions. Designing, manufacturing, testing, and modifying become the steps in the problem solving process. Students use the higher cognitive skills of assimilating knowledge to solve problems and to evaluate and modify. These synthesis, analysis, and evaluation skills provide students the framework to be successful in solving future problems.

MIDDLE SCHOOL TECHNOLOGY EDUCATION

Course Goals

COURSE GOALS

- Demonstrate knowledge and understanding of possible careers and life skills related to production and technical systems associated with research, manufacturing, construction, extraction, processing, recycling, and conversion of materials for consumer and industrial goods

- Demonstrate knowledge and understanding of technologies relative to design, processes, and problem solving method and express ideas through hands on activities

- Demonstrate knowledge and understanding of basic listening, reading, writing, science, and mathematical measurement skills needed to communicate ideas effectively

- Demonstrate knowledge and understanding of communication technology using computer science in the design, process, and problem solving method

- Demonstrate knowledge and understanding of manufacturing technology by using light power tools, hand tools, and material sciences

- Demonstrate knowledge and understanding of good safety practices in the industrial work place

- Demonstrate knowledge and understanding of construction and construction systems, including the technology concepts related to systems associated with the design, creation, and maintenance of construction of residential, commercial, and civil structures

- Demonstrate knowledge and understanding of systems and concepts related to all areas of technology study referred to as the core technologies of power, energy, and transportation

MIDDLE SCHOOL TECHNOLOGY EDUCATION

Course Scope & Sequence & Objectives

Unit 1: Career and Life Skills

Student will explore a variety of careers and be exposed to the educational options and requirements necessary for each.

Objectives

The students will:

1. Explore relevant careers as appropriate for student age levels
2. Explore job careers through guest speakers
3. Explore educational requirements for specific careers
4. Become familiar with careers appropriate to age level
5. Identify post secondary educational facilities for specific careers of interest
6. Determine the approximate cost for tuition, supplies, and living expenses for post secondary education
7. Present a written report concerning requirements, education, and cost to achieve a specific career
8. Present a short oral presentation to the class utilizing technology
9. Develop interview skills: awareness, grooming, appearance, language, preparedness
10. Develop time management skills

Activities

The student will choose one career pathway and pick a specific occupation he/she is interested in exploring.

1. Arts & Communication
2. Business & Marketing

3. Engineering & Scientific
4. Health & Human Services
5. Industry & Technology

Unit 2: Communication
Students will be engaged in activities that support the development of written and oral communication skills.

Objectives
Students will:
1. Develop writing skills needed to inform, express ideas, develop concepts, organize plans, express designs, list steps and stages in production, and evaluate results
2. Utilize computer hardware and software to support the development of writing skills and related communication skills
3. Utilize and experiment with electrical components and circuits, electronic communication, data communications, and satellites to support communication networks.

Activities
Classroom projects will include, but not limited to:
1. Writing assignments
2. Freehand drawing and sketching
3. Technical drawing
4. Computer painting, drawing, and design
5. Word processing
6. Desktop publishing
7. Digital photography

Unit 3: Construction/Manufacturing
Students will participate in activities that will expose them to the manufacturing, production, and construction industries.

Objectives
The students will:
1. Develop awareness relative to types, differences and uses of industrial materials
2. Explore properties of processing and forming materials
3. Experiment with mass production and the assembly process
4. Explore automated manufacturing
5. Demonstrate awareness of commercial and residential construction structures
6. Explore electrical, plumbing, and heating/air conditioning systems
7. Demonstrate ability to work safely and collaboratively with power and hand tools in a laboratory with peers

Activities
Students will work individually and in small groups on projects utilizing hand and power tools to develop specific manipulative skills, apply mathematical and communication techniques, and develop problem solving skills.

Design projects (both hand and computer drafted)
Design, develop and construct specific projects utilizing a variety of equipment and materials
Utilize hand tools
Design projects utilizing measurement systems
Construct and test structures
Practice laboratory, industrial and specific safety

Unit 4: Energy, Power, Transporation

The students will engage in projects and activities that support the application of skills and processes studied in the classroom/laboratory relative to Power, Energy, and Transportation.

Objectives

1. Define core technology terms such as Work/Energy
2. Explore energy sources (limited, unlimited and renewable)
3. Develop an awareness of power as a process in industry and transportation
4. Explore power systems (engines, hydraulic, pneumatic, electrical and mechanical)
5. Explore land, water, air, and the future of space transportation systems
6. Examine mass transportation and analyze possibilities in the Puget Sound area
7. Explore inter modal transportation
8. Explore non-vehicular people-moving systems

Activities

1. Develop and calculate artillery and catapults
2. Build and fire rockets (fuel, air and water pressure)
3. Construct and fly planes (glider and propelled)
4. Build race cars (Co2, dragster, mouse trap, magnetic levitation, and rail)
5. Build and experiment with boat, sail, and hull designs
6. Build and experiment with propeller driven cars, boats, and planes

MIDDLE SCHOOL TECHNOLOGY EDUCATION

Course Evaluation/Assessment

The following criteria are applicable in the total evaluation of student progress. Assessment is integrated throughout the instructional program in order to provide constant feedback to student participants.

Evaluation may include:

- Student performance in the laboratory
- Work sheets, assignments, tests, and quizzes
- Demonstrations
- Project completion
- Individual and/or group oral and written presentations
- Computer applications
- Portfolios

Supplemental Texts

Architecture Drafting and Design, Donald E Helpler and Paul I. Wallach, McGraw-Hill Book Co., 1977

Structural Technology Manual, Paxton Patterson, 1995

Exploring Drafting, John Walker, Goodheart-Willcox Co, 1972

Basic Graphics, Warren J Luzadder, Prentice Hall inc.,1968

Paper Flight, Jack Botermans, Henery Holt and Company, 1984

Technology, Brad and Terry Thode, Delmar Technology Series, 1994

Modern Woodworking, Willis H. Wagner, Goodheart-Willcox Co., Inc.,1978

Space Age Activity Guide, WQED/Pittsburgh and HHK/Japan in association with the National Academy of Sciences,1992

Living With Technology, Michael Hacker, Robert Barden, Glencoe,McGraw-Hill, Second Editon, 1993

Moving Goods and People Through The Air, Bruce Barnes, Scholastic Futures Publishing, 1988

Moving Goods and People through Space, Bruce Barnes, Scholastic Futures Publishing, 1988

Moving Goods and People on Land, Bruce Barnes, Scholastic Futures Publishing, 1988

Satellites, Dr. Sylvia B. Saddler, Scholastic Futures Publishing, 1995

Construction: Designing Shelters and Structures, Bruce Barnes, Scholastic Futures Publishing, 1988

Bridges, Bruce Barnes, Scholastic Futures Publishing, 1989

The Pitsco Bridge Book, Pitsco Inc., 1989

Videos

Various Bill Nye: Energy, Transportation, Space, Flight

Modern Marvels: Transcontinental Railroad, Grand Coulee Dam, statue of Liberty, Panama Canal, Eiffel Tower, Ocean Liners, Golden Gate Bridge, Domed Stadiums, Empire State Building

Tunnels, Kaw Valley Films.

Monument to a Dream: the Construction of the Gateway Arch

To Engineer Is Human, Films Inc.

How a Car is Built, Think Media Production

Challenge of Fire, Diamond P Sports Inc.

Software

Design software