Missoula County Curriculum Consortium

CAREER & TECHNICAL EDUCATION CURRICULUM

Reviewed 2010-2011

Alberton, Bonner, Clinton, DeSmet, Drummond, Florence-Carlton, Frenchtown, Lolo, Potomac, Saint Regis, Seeley Lake, Sunset, Superior, Swan Valley, Woodman

TABLE OF CONTENTS

CAREER & TECHNICAL EDUCATION COMMITTEE MEMBERS, 2010-2011 5
CAREER & TECHNICAL EDUCATION CURRICULUM PHILOSOPHY.....8
STANDARDS & COMPETENCIES 8
CAREER & TECHNICAL EDUCATION AND TECHNOLOGY 9
ASSESSMENT.....9
MEETING STUDENTS' DIVERSE NEEDS 9
HIGH SCHOOL COURSE DESCRIPTIONS OVERVIEW.....9
Agriculture Education
Agriculture Education I.....10
Agriculture Education II 14
Agriculture Education III & IV 18
Business and Marketing Education
Keyboarding and Computer Literacy.....22
Keyboarding and Computer Literacy Scope and Sequence 27
Pre-Accounting 30
Accounting I.....34
Accounting II 39
Computer Concepts.....44
Computer Word Processing I.....50
Computer Word Processing II.....56
Desktop Publishing 62
Graphic Design I 66
Graphic Design II.....71
Marketing I: Introduction to Business.....76
Marketing II: Principles of Marketing & Sales.....81
Marketing III: Start Your Own Business 85
Marketing IV: Advertising.....90
Street Law 94
Video Production I.....99
Video Production II.....106
Web Design I 113
Web Design II 118
Family and Consumer Science
Family & Consumer Science Grade 6.....122
Grade 6 Investigations 127
Family & Consumer Science Grade 7.....130
Grade 7 Investigations 135
Family & Consumer Science Grade 8.....138
Grade 8 Investigations 143
Freshman Seminar 146
Nutrition and Wellness 150
Culinary Arts I.....155
Culinary Arts II 160

Culinary Arts III 165
Textiles and Apparel I 170
Textiles and Apparel II 174
Early Childhood Education I 178
Early Childhood Education II 182
Fashion Merchandising 187
Housing and Living Environments 191
Hospitality, Tourism and Recreation I 195
Hospitality, Tourism and Recreation II 199
Preparation for Career, Family & Community Connections 203
Health Occupations
Health Care Foundations 208
Careers in Health Care IIA: Therapeutic Services 213
Careers in Health Care IIB: Diagnostic Services 218
Industrial Technology
3D Modeling and Animation 223
Applied Technology I 228
Applied Technology II 232
Building Trades I 236
Building Trades II 241
CCNA I 246
Drafting I 250
Drafting II 254
Drafting III 259
Drafting IV 263
Home Technology Integrator 267
Independent Study in Career & Technical Education 272
Installation and Maintenance of Computers 275
Media Communications 278
Metals Technology I 284
Metals Technology II 291
Power Technology I 297
Power Technology II 302
Power Technology IIIA: Automotive 308
Power Technology IIIB: Agriculture and Industrial Mechanics 313
Welding Design and Fabrication Technology 318
Welding Technology I 322
Welding Technology II 326
Wood Technology I 330
Wood Technology II 335
Wood Technology III 340

APPENDIX I: MEETING STUDENTS' DIVERSE NEEDS 345
APPENDIX II: PERSONAL AND LEADERSHIP SKILLS RUBRIC 346
APPENDIX III: RESOURCE MANAGEMENT SKILLS RUBRIC 347

APPENDIX IV: FACS RUBRICS 348
APPENDIX V: HUMAN SERVICES CLUSTER.....350
APPENDIX VII: REFERENCES 352
APPENDIX VIII: ADOPTED MATERIALS 353
APPENDIX IX: BUSINESS & MARKETING
KEYBOARDING & COMPUTER LITERACY
GRADE 8 PLACEMENT EXAM 354

2010-2011 Missoula County Curriculum Consortium
Career and Technology Education Committee Members

Alberton K-12 Schools
PO Box 330
Alberton, MT 59820
(406) 722-4413
(406) 722-3040 (fax)

Tammy Flickinger
Bonner Elementary
PO Box 1004
Bonner, MT 59823
(406) 258-6151
(406) 258-6153 (fax)

Court Perry
Rachal Edwards
Clinton Elementary
PO Box 250
Clinton, MT 59825
(406) 825-3113
(406) 825-3114 (fax)

Lars Hoff
DeSmet Elementary
6355 Padre Lane
Missoula MT 59808
(406) 549-4994
(406) 549-6731 (fax)

Drummond Public Schools
PO Box 349, 108 W Edwards
Drummond, MT 59832
(406) 288-3281
(406) 288-3299 (fax)

Florence-Carlton K-12 Schools
5602 Old Highway 93
Florence, MT 59833
(406) 273-6751
(406) 273-2802 (fax)

Darla Austin
Cathy Childs
Brian Fogerty
Agnes Nelson
Jane Strimple-Jacko
John Fred
Keith Kuroski
David Duhame
Mark McMurray
Frenchtown K-12 Schools
16495 Main Street
Frenchtown, MT 59834
(406) 626-2600
(406) 626-2605 (fax)

Kristen Cooper
Forey Cederberg
Sheila Harding
Lolo Elementary
11395 Highway 93 S
Lolo, MT 59847
(406) 273-6686
(406) 273-6141 (fax)

Lars Hoff
Potomac Elementary
29750 Potomac Road
Bonner, MT 59823
(406) 244-5581
(406) 244-5840 (fax)

St. Regis K-12 Schools
PO Box K
St. Regis, MT 59866
(406) 649-2427
(406) 649-2788 (fax)

Michelle Holmes
Seeley Lake Elementary
PO Box 840
Seeley Lake, MT 59868
(406) 677-2265
(406) 677-2264 (fax)

Sunset Elementary
PO Box 344
Greenough, MT 59823
(406) 244-5542

Jaimie Toivonen
Scott Kinney
Jeff Schultz
Superior K-12 Schools
PO Box 400
Superior, MT 59872
(406) 822-3600
(406) 822-3601

Swan Valley Elementary
6423 Highway 83
Condon, MT 59826
(406) 754-2320
(406) 754-2627 (fax)

Woodman Elementary
18740 Highway 12 West
Lolo, MT 59847
(406) 273-6770
(406) 273-6659 (fax)

Christine D. Kuschel, Ed.D.
Curriculum Consultant
6990 Linda Vista Blvd
Missoula MT 59803
406/251-5885
406/251-4189
CKuschel@aol.com

CAREER & TECHNICAL EDUCATION CURRICULUM PHILOSOPHY

All students must become technologically literate and be prepared for the changing face of America's workplace. Increased technical and content knowledge skills and workplace competency offer higher levels of personal fulfillment to individuals, enhance the capability of students to hold meaningful and productive jobs, encourage students' ability to think logically and creatively, and helps us as a society to remain globally competitive.

To ensure technological literacy and workplace competency, this curriculum represents a program of articulation sequential experiences that prepare students for successful participation in community, family, post-secondary education and careers. The curriculum is based upon the belief that in order for students to achieve success they must develop future career and life plans, while engaging in relevant, authentic problem-solving and applications. They must be able to define their career and life roles and interact effectively with others. The curriculum is designed to be integrated, where appropriate, and includes a variety of assessment techniques that include traditional assessments, performance assessments and standardized assessments.

STANDARDS AND COMPETENCIES

The Career & Technical Education standards are a composite of what students should know and be able to do by the time they leave high school. The four standards were developed by the Career & Technical Education committee after an extensive review of local, state and national trends. These standards reflect the MCPS Vision and Mission document. The Career & Technical Education Curriculum includes competencies for each high school course. These competencies, discrete elements of knowledge and/or skills which students are expected to learn in a specific course, are organized according to the four Career & Technical Education standards.

Standard # 1 – Technical Skills and Content Knowledge
Students acquire and demonstrate current knowledge and skills leading to an occupation.

Standard #2 – Career and Life Planning
Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

Standard #3 – Skills for Life and Work
Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

Standard #4 – Structure of Organizations and Work
Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

CAREER & TECHNICAL EDUCATION AND TECHNOLOGY

The MCPS Career & Technical Education Steering Committee views technology as integral to the Career & Technical Education curriculum. Technology may reference materials and support equipment used in Career & Technical Education applications. These are the physical "tools" included in all Career & Technical Education courses. Technology may also refer to technology literacy or use thereof, a common theme throughout Career & Technical Education reflected in Career & Technical Education Standard #1.

ASSESSMENT

Student progress in reaching competencies and standards will be assessed in a variety of ways in each classroom. In addition to paper and pencil tests developed by teachers and found in program materials used by teachers, students will be assessed on their performance on a variety of activities, demonstrations, laboratory experiments, and specific performance tasks. Teachers will also observe students over time in order to evaluate understanding of concepts.

MEETING STUDENTS' DIVERSE NEEDS

Students with diverse needs--those with unique abilities and/or disabilities--will have differentiated opportunities to achieve standards, and at rates and in manners consistent with their needs. Students who excel will have opportunities to achieve competencies and standards at a faster pace. Some appropriate modifications may be found in Appendix II.

HIGH SCHOOL COURSE DESCRIPTIONS OVERVIEW

MCPS high schools offer Career & Technical Education classes organized in one of four program areas: agriculture education, business and marketing education, family and consumer science, and industrial technology. Within each program there are many choices and directions available to students. In order to address the needs of all students, courses are typically sequential in nature so that students entering the high schools at whatever skill level can take appropriate Career & Technical Education courses. While all Career & Technical Education classes are elective, it is highly recommended that students complete a series of Career & Technical Education courses that will guarantee their computer literacy, as well as their readiness to move to the workplace and/or post-secondary education, and allow them to explore a variety of career options by pursuing a career path.

Agriculture Education I
Grades 9-12

Units of Credit: One year (Elective)

Prerequisites: Previous and current 4-H and agricultural background helpful

Course Overview:

This course consists of classroom and lab exercises emphasizing academics and hands-on experiences in plant and soil science, tool use and maintenance, leadership development and the Future Farmers of America (FFA), public speaking, Supervised Agricultural Experience (SAE) computerized records, and basic animal science. Instructional strategies and assessments include lecture and assignment, performance and written tests, and results of employing the scientific method. Technology will include computers, electronic veterinary equipment, electronic scales, and tool technology used in the industry. The content of Agriculture Education I is arranged around the MCPS Career & Technical Education Standards. These standards include Technical Knowledge and Skills, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Plant & Soil Science
- Plant Parts
- Plant Reproduction
- Growth Development
- Soil Media
- Fertilizers and Nutrients
- Soil Structure

Tool Use
- Tool Identification
- Proper Use & Storage

Leadership Development & The FFA
- History of the FFA
- Public Speaking

CDE - Career Development Events

Leadership Development (Career Goals)

SAE - Supervised Agricultural Experience - Business or Placement

Basic Animal Science
- Breeds of Livestock
- Livestock Evaluation
- Animal Care & Ethics Digestive & Reproduction
- Basic Feeds
- Practice proper care of all animals

<u>Content Competencies:</u>

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Learn the proper use and care of hand tools used in agriculture.
2. Demonstrate proper set-up of oxy-acetylene welding equipment and common welds.
3. Demonstrate proper set-up of arc welding equipment and common welds.
4. Conduct laboratory experiments dealing with aspects of agriculture.
5. Use SAE record keeping
6. Identify common parts of beef cattle, sheep, swine, dairy cattle, and horses.
7. Interpret the knowledge of reproduction in domestic livestock including parts of the reproductive tract, hormones, palpation, artificial insemination, and parturition.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Demonstrate basic knowledge of the FFA.
2. Identify careers in animal production, plant production, Agriculture business, Agriculture mechanics, Agriculture processing, Agriculture services, OH, & Bio-technology.
3. Describe the purpose of the SAE Program and outline an individual four-year plan.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Summarize the role of agriculture in the United States, Montana and local history as well as current importance.
2. Identify the common breeds of beef and dairy cattle, sheep, swine, and horses.
3. Based on production records and visual appraisal judge classes of beef, sheep, swine, and horses and provide oral reasons for placement.
4. Demonstrate the ability to communicate orally by delivering a prepared speech on an agricultural topic.
5. Demonstrate basic bookkeeping skills utilizing the Montana Record Book.
6. Demonstrate basic math skills used in animal science including adjusted weaning weights, efficiency of gain, dressing percentage, and rate of gain.
7. Practice the relationship between plant growth and soil fertility.
8. Comprehend basic soil science including formation, nutrients, soil pH, and texture and structure.

9. Demonstrate knowledge of the management of beef, sheep, swine, and horses.
10. Demonstrate and identify knowledge of meat processing including retail cuts, USDA grading system, and slaughter.
11. Gather, compile, and analyze data from a variety of sou7rces, and evaluate their relevance and accuracy in making informed decisions in the workplace.
12. Organize, process, analyze, and maintain written or computerized records and other forms of information using systematic methods.
13. Select, analyze, information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
14. Acquire, organize, communicate, process, analyze and evaluate information.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Demonstrate knowledge of basic parliamentary procedure.
2. Demonstrate an understanding of safety in agriculture including safety in the classroom and during lab instruction.
3. Learn the proper use of power tools in agriculture.
4. Develop a good work ethic.
5. Evaluate quality and performance of a variety of systems (e.g., impact of change).
6. Practice and analyze principles of system management considering external factors and uncontrolled variables.
7. Manage and analyze existing systems, including optimizing outputs and making in-process adjustments.
8. Design and evaluate a system composed of subsystems.

Resources:

Textbooks
Animal Science and Biotechnology, Interstate Publishers
Meats We Eat, Interstate Publishers
Agricultural Mechanics, Cooper
Introduction to Horticulture, Interstate Publishers
National FFA Center - Text and Handbook
Current Montana State FFA Curriculum and Bulletin
Montana Agriculture Education Curriculum

Assessments:

Assessments may include attendance, written and test evaluation, performance testing, lab work, lab assignments, and FFA (CDE).

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Agriculture Education II
Grades 10 - 12

Units of Credit: One year (Elective)

Prerequisites: Agriculture Education I

Course Overview:

This course includes instruction and hands-on experiences in the applied science of animal physiology and production, greenhouse management, fish and wildlife ecology, agriculture technology including electrical, engine maintenance, carpentry, tractor operation and safety, medal fabrication and design, CAD-CAM-CNC technology, and advanced leadership development. Instructional and assessment strategies are varied. The content of Agriculture II is arranged around the MCPS Career & Technical Education Standards. These standards include Technical Knowledge and Skills, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Animal Physiology and Production
Greenhouse Management
Fish and Wildlife Ecology
Electrical Science
Engine Maintenance and Design
Carpentry and Construction
Tractor Operation and Safety
Metal Fabrication and Welding
CAD, CAM, and CNC
S.A.E. Advanced Leadership Skills
Agricultural Sales and Service

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use basic drafting abilities/CAD.
2. Demonstrate proper set-up of a MIG welder, its use, and common welds.
3. Demonstrate knowledge of biotechnology as it relates to plant growth including tissue culture, hydroponics, and other new techniques.
4. Demonstrate the steps in constructing a simple frame building including drawing the plans, estimating materials, types of roofs, and construction.
5. Synthesize a number of skills to design and build a mechanics project.

6. Practice proper set-up of TIG welder and common welds.
7. CAD, CAM, and CNC literacy.
8. Summarize the relationship between bodies of water, streams and riparian areas and agriculture.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Demonstrate and practice basic knowledge of the FFA.
2. Locate careers in animal production, plant production, Agriculture business, Agriculture mechanics, Agriculture processing, Agriculture services, and horticultural services.
3. Describe the purpose of the Supervised Agricultural Experience Program and outline an individual four-year plan.
4. Demonstrate a basic understanding of marketing including developing a marketing plan and interpreting market reports.
5. Plan and develop an Agricultural Sales and Service project.
6. Demonstrate Agriculture Sales and Service project.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Demonstrate basic understanding of agricultural pest control including cultural, chemical, biological, and tillage.
2. Demonstrate computer literacy with common software applications and agriculture specific software.
3. Understand and describe basic accounting including cash system, accrual system, double entry, and accounting software.
4. Produce high quality market livestock for SAE and the Western Montana Fair.
5. Identify common Montana range plants including grasses and shrubs.
6. Acquire basic life skills such as the work ethic, decision-making, and high self esteem.
7. Construct a welded metal project, using proper drawing and construction techniques.
8. Demonstrate knowledge of the history of conservation in the U.S.
9. Understand the principles of sustainable agriculture.
10. Identify conservation issues, different positions of government agencies and private organizations on the issues, different conservation strategies and be able to evaluate different points of view.
11. Demonstrate knowledge of basic ecology and its importance to agriculture.
12. Understand the concept of multiple use of public lands and the conflicts arising from the different stakeholders such as mining, hunting, grazing, logging, watershed, and

recreational use.

13. Demonstrate and practice basic understanding of forestry including management, types of forests, disease problems, and fire.
14. Demonstrate a basic understanding of fish and wildlife management including endangered species, habitat requirements, management, and aquaculture.
15. Interpret knowledge of integrated pest management in Montana.
16. Gather, compile, and analyze data from a variety of sou7rces, and evaluate their relevance and accuracy in making informed decisions in the workplace.
17. Organize, process, analyze, and maintain written or computerized records and other forms of information using systematic methods.
18. Select, analyze, information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
19. Acquire, organize, communicate, process, analyze and evaluate information.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Demonstrate and practice basic safe farm machinery operation.
2. Demonstrate and practice basic knowledge of the FFA.
3. Practice basic life skills such as the work ethic, decision making, and high self esteem.
4. Evaluate quality and performance of a variety of systems (e.g., impact of change).
5. Practice and analyze principles of system management considering external factors and uncontrolled variables.
6. Manage and analyze existing systems, including optimizing outputs and making in-process adjustments.
7. Design and evaluate a system composed of subsystems.

Resources:

Textbooks

Aquaculture, Interstate Publishing
Animal Science and Bio Technology, Interstate Publishing
Ag Mechanics, Cooper
Farm Business Management, John Deere and Company
Agricultural Sales Manual, Acro Publishing

Current Montana Ag Education Curriculum
FFA- CDE
Land Lab

Assessments:

Assessments may include attendance, written and test evaluation, performance testing, lab

work, lab assignments, and FFA (CDE).

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Agriculture Education III & IV
Grades 10 -12

Units of Credit: One year (Elective)

Prerequisites: Agriculture Education I and II

Course Overview:

Students receive instruction and lab experience in natural resource management and construction, computer applications in agriculture, food and service transportation, agribusiness, co-ops and marketing, sales and service, as well as technology training in equipment operation efficiency, and oral communication skills in leadership development. Assessments and instructional strategies are varied. The content of Agriculture III and IV is arranged around the MCPS Career & Technical Education Standards. These standards include Technical Knowledge and Skills, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Range Management and Plant Identification.- C.D.E.
Resumes and Computers - SAE Applications
Food Science Production to Retail
Co-ops
Marketing - Sales and Service
Ag Equipment Operation and Efficiency
Aquaculture
Oral Communication Skills in Presentations
Leadership Development (FFA)

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Explain and demonstrate proper use of measuring tools used in agriculture.
2. Demonstrate knowledge of basic maintenance on equipment.
3. Practice basic surveying skills including differential leveling, legal descriptions, map reading, and acreage determination.
4. Demonstrate basic knowledge of plumbing including materials, tool ID, joints, and pipe sizes.
5. Demonstrate knowledge of basic hydraulics.
6. Apply understanding of hardware fasteners.
7. Summarize the relationship between bodies of water, streams and riparian areas and

agriculture.
8. Know the application process used by universities and other post-secondary institutions including scholarship applications.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Demonstrate basic knowledge of the FFA.
2. Locate careers in animal production, plant production, Agriculture business, Agriculture mechanics, Agriculture processing, Agriculture services, and horticultural services.
3. Describe the purpose of the SAE Program and outline an individual four-year plan.
4. Demonstrate a basic understanding of marketing, including developing a marketing plan and interpreting market reports.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Formulate and use a ration plan for monogastric and ruminant animals.
2. Understand basic crop production including seed and plant identification, cultural practices, pest identification and control, and grading.
3. Demonstrate skills needed to obtain a job including resume preparation, job application, and interview.
4. Demonstrate record keeping skills including the production of balance sheets, cash flow statements, net worth statements, budgets, and computerized record books.
5. Practice basic business math including amortization, depreciation, discounting, and return on investment.
6. Understand the basics of the commodity market including hedging, speculating, and trends.
7. Acquire a basic understanding of micro economics including law of supply and demand, diminishing returns, and marginal returns.
8. Understand the basic types of businesses.
9. Demonstrate knowledge of range management including determining stocking rates, selection of grazing systems, land classification, and range renovation.
10. Understand basics of soil conservation including tillage management, soil erosion, and soil improvement.
11. Describe the different categories of available natural resources in the local area and the state of Montana.
12. Describe irrigation management.
13. Apply knowledge of basic landscaping.

14. Practice basic life skills such as the work ethic, decision-making, and high self esteem.
15. Use math concepts to solve problems frequently found in agriculture including those involving rectangles, triangles, squares, irregular shapes, cones, and pyramids.
16. Use math skills in construction including calculation of board feet, bills of material, square footage, and rafter calculations.
17. Use the basic principles of concrete including selecting mixtures, forms, finishing, and curing.
18. Understand the principles of internal combustion engines.
19. Select and complete an appropriate lab project.
20. Understand the basics of diesel engines.
21. Understand the cooperative way of doing business.
22. Demonstrate a basic understanding of taxes.
23. Conduct financial analysis including machinery cost, financial statements.
24. Demonstrate knowledge of basic business planning including decision making, goals, and objectives.
25. Demonstrate a basic knowledge of sales including oral and written communication skills, interpretation of figures, sales procedures, and the qualities of a good sales person.
26. Analyze soil and recommend management decisions.
27. Gather, compile, and analyze data from a variety of sou7rces, and evaluate their relevance and accuracy in making informed decisions in the workplace.
28. Organize, process, analyze, and maintain written or computerized records and other forms of information using systematic methods.
29. Select, analyze, information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
30. Acquire, organize, communicate, process, analyze and evaluate information.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Summarize and evaluate marketing concepts.
2. Describe how cooperatives work in the agricultural industry.
3. Use Roberts Rules of Order and parliamentary procedure.
4. Evaluate quality and performance of a variety of systems (e.g., impact of change).
5. Practice and analyze principles of system management considering external factors and uncontrolled variables.
6. Manage and analyze existing systems, including optimizing outputs and making in-process adjustments.
7. Design and evaluate a system composed of subsystems.

Resources:

Textbooks

Aquaculture, Interstate Publishers
Animal Science and Bio Technology, Interstate Publishers
Ag Mechanics, Cooper
Farm Business Management, John Deere and Company
Current Montana Ag Education Curriculum
FFA CDE
Land Lab
Agricultural Sales/Service Manual, Acro Publishing

Assessments:

Assessments may include attendance, written and test evaluation, performance testing, lab work, lab assignments, and FFA (CDE).

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Keyboarding/Computer Literacy
Grades 4-8

Length of Course:

Daily; 40 minute periods. One-year minimum (Grades 6-8, cumulative).**Model #1:**
Grade 4: 1 week
Grade 5: 1 week
Grade 6: 9 weeks
Grade 7: 18 weeks
Grade 8: 18 weeks

Model #2:
Grade 4: 1 week
Grade 5: 1 week
Grade 6: 18 weeks
Grade 7: 9 weeks
Grade 8: 9 weeks
Prerequisites: None

Course Overview:
All students must acquire touch-keyboarding skills and have a basic knowledge of computer literacy prior to enrollment in high school. The content of Keyboarding/Computer Literacy is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. After introduction/review of the keyboard, emphasis is placed on skill building and introduction of formatting (reports, letters, tables, memos, etc.) as well as creating, formatting, saving, editing files on a network, and file management. Internet is available for research and career exploration. This is a lab class—all work is completed on computers used during class. Instructional strategies and assessments are varied.

Topics:
Acquire touch-typing skill
Develop speed and accuracy
Develop technique (hand and wrist placement, posture)
Format documents (letters, reports)
Develop "soft skills" (follow directions, organize tasks, work as a team member, and make decisions)
Develop computer literacy (hardware, software, file management)
Explore computer applications (word processing, database, spreadsheet, desktop publishing)
Internet (searches, safety, media literacy, netiquette)
Explore Career Opportunities

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Students will demonstrate knowledge of computer hardware, software, and terminology.
2. Students will learn file management skills.
3. Students will develop editing and proofreading skills using available technology (spell check, thesaurus, grammar check, etc.)
4. Students will demonstrate document formatting skills including character, line, paragraph, and page.
5. As facilities, schedules, and curriculum permit, students will be introduced to computer databases, spreadsheets, and desktop publishing.
6. Students will apply knowledge of internet search techniques, media literacy, internet safety, and netiquette.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Students will identify how keyboarding/computer literacy skills are used in various career stands and occupations.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Students will use correct fingers for striking alphanumeric and commonly used punctuation keys on the keyboard.
2. Students will consistently apply proper keyboarding techniques.
3. Students will develop letter, word, and phrase response skills.
4. Students will correct errors.
5. Students will type a minimum of 30 words per minute with 6 or fewer errors on a 3-minute straight-copy timed writing of average ability level (Grade 8).
6. Using basic keyboarding techniques and document formatting skills, students will produce documents from straight, script, and rough draft copy.
7. Students will compose at the keyboard.
8. Students will integrate keyboarding skills across the curriculum.

9. Students will produce reports, letters, outlines, and tables in correct format (Grade 8).
10. Students will develop proofreading and editing skills (grammar, spacing, capitalization, spelling, typographical errors, etc.)

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Create and mange plans/schedules with specific timelines that take into account constraints, priorities, and goals.
2. Practice maintaining personal financial records.
3. Acquire, store, allocate, and use materials or space.
4. Manage personal and team resources to achieve personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Use a variety of skills to work as a member of a team while recognizing individual differences and cultural diversity (e.g., listening skills).
2. Demonstrate a learned skill and teach others.
3. Demonstrate leadership skills by making positive use of rules, regulations and policies of schools and communities.
4. Work toward agreements that include exchanging specific resources or resolving divergent interests in structured and unstructured situations.

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Identify the need for and obtain data in order to make informed decisions in the workplace.
2. Organize and maintain written or computerized records using systematic methods.
3. Select and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, and analyze information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Apply knowledge of text structure, organization and purpose to find information and derive understanding.
2. Use information to develop written, oral, or other presentations.
3. Connect and articulate personal experiences to ideas expressed in literacy works.
4. Determine and explain how culture, ideas, and issues influence literacy works.
5. Summarize and organize ideas and prior knowledge in a variety of ways.

6. Select and use reference materials, available technology, and resource tools for writing while applying the rules and laws governing the use of such materials (plagiarism, intellectual property rights).
7. Choose style and format that best suits the intended purpose.
8. Document sources of information used in reports and oral presentations.
9. Generate ideas or gather information and develop a plan before writing on self-selected and assigned topics.
10. Writes, revises, and edits text using conventions of standard written English using appropriate resources as necessary.
11. Design and create, perform or display media messages in a variety of forms, targeting different audiences and purposes.
12. Apply critical thinking skills to make informed decisions as consumers and producers of information.
13. Recognize propaganda techniques, bias, fact, fiction, and opinion in various media messages.
14. Plan and organize thoughts sequentially in order to communicate a clear message.
15. Utilize technology to read and create a variety of graphs and plots.
16. Utilize technology to make inferences and convincing arguments based on data analysis.
17. Use a variety of technology (i.e. graphing calculators, computer software such as spreadsheets) to investigate aspects of geometry.
18. Use a variety of technology (i.e. graphing calculators, computer software such as spreadsheets) to investigate aspects of algebraic functions.
19. Apply rules of measurement to format word processing documents (i.e. margin settings, placement on page).
20. Apply mathematical formulas to summarize numerical information within documents (i.e. totaling columns in a table).
21. Demonstrate sequential numbering skills for columns, rows, paragraphs, and bulleted items for documents (i.e. outlines).

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Prioritize job tasks.
2. Demonstrate the ability to manage files.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Describe and illustrate a system (e.g., relationships among self, family, school, community)
2. Analyze how a system works (i.e., input, process, output, feedback, performance improvement).
3. Design and work within a system (e.g., committees, student council, mock government, simple electrical circuit) to manage, control, and improve performance.

Resources:

Herzog Method (Grades 3-5)
ITP (South-Western) Publishing Integrated Program
Glencoe
PAWS
Microtype IV
Dance Mat Typing

Assessments:

At the completion of Grade 8, students should (a) type a minimum of 30 words per minute with 6 or fewer errors on a 3-minute, straight-copy timed writing of average ability level; (b) demonstrate the ability to transfer unformatted text into standard document formats (letters, envelopes, reports, tables, poems, vertical and horizontal centering, etc.); and (c) complete, at a proficient level, a technology literacy exam. Students would then be eligible to enroll in the "Computer Concepts" course offered at MCPS Grades 9-12. Students that do not reach this expectation are encouraged to take MCPS "Word Processing I" course at the high school level.

Multiple forms of student assessment should be used throughout the learning process to gauge progress in (a) speed and accuracy (Product: 1- and 3-minute straight-copy timed writings with acceptable error limits); (b) technique (Observation: use of touch method, proper keystroking, and body position); (c) document formatting (Product: transferring unformatted text into a standard document); (d) computer literacy (Product, Written); and (e) integrated curriculum projects (Product). Assessments may include daily assignments, timed writings, objective tests, simulation performance, and production tests.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

KEYBOARDING /COMPUTER LITERACY
GRADE LEVEL SCOPE AND SEQUENCE

I = Introduce, D = Develop, M = Master, R = Reinforce, and O = Optional.

			GRADE LEVELS				
			4	5	6	7	8
1. BASIC KEYBOARD OPERATION							
1.1	Alphabetic Keys						
	1.11	Keyboard presentation	I	I/D	I/D	D/M	M/R
	1.12	Typing by touch	I	I/D	I/D	D/M	M/R
	1.13	Correct fingering	I	I/D	I/D	D/M	M/R
1.2	Function Keys (return, space bar, shift keys, arrow keys, etc.)		I	I/D	I/D	D/M	M/R
1.3	Numeric Keys						
	1.31	Keyboard presentation	O	O	I	D/M	M/R
	1.32	Correct fingering	O	O	I	I/D	D
	1.33	Spacing for figures	O	O	O	I	I/D
1.4	Symbol Keys						
	1.41	Keyboard presentation	O	O	O	I	I/D
	1.42	Spacing for punctuation	I	I	I/D	D/M	M/R
	1.43	Names of symbols	O	O	O	I	I/D
	1.44	Correct fingering	O	O	O	I	I/D
2. TECHNIQUES							
2.1	Body Position (Ergonomics)						
	2.11	Posture	I	D	D	M	M/R
	2.12	Fingers curved	I	D	D	M	M/R
	2.13	Hands above frame of keyboard	I	D	D	M/R	M/R
	2.14	Hand away from front edge of keyboard	I	D	D	M/R	M/R
	2.15	Keyboard at edge of table	I	D	D	M/R	M/R
	2.16	Elbows at sides of body, parallel to floor	I	D	D	M/R	M/R
2.2	Eyes on Copy		I	D	D	M/R	M/R
2.3	Keystroking						
	2.31	Minimum movement of hands and arms	I	D	R	R	R/M
	2.32	Proper reaches	I	D	R	R	R/M
	2.33	Letter response	I	D	R	R	R/M
	2.34	Word response	O	I	D	R	R/M
	2.35	Phrase response	O	O	I	D	D/M
2.4	Speed Building/Accuracy		I	I	I/D	D	D

3. SKILL DEVELOPMENT						
3.1	**Straight Copy**	**I**	**D**	**D**	**D**	**M/R**
3.2	**Script Copy**	**I**	**D**	**D**	**D**	**M/R**
3.3	**Rough Draft Copy**	**I**	**D**	**D**	**D**	**M/R**
3.4	**Composing at Keyboard**	**I**	**I**	**I**	**D**	**M/R**
3.5	**Basic Writing Mechanics**	**I**	**D**	**D**	**D**	**M/R**
4. DOCUMENT PRODUCTION						
4.1	**Basic Report Formatting**	**O**	**I**	**D**	**M**	**M/R**
4.2	**Advanced Report Formatting**					
	4.21 Title page, endnotes, etc.	**O**	**O**	**I**	**I**	**I**
	4.22 Graphics	**O**	**O**	**I**	**I**	**I**
4.3	**Letters**					
	4.31 Personal business letters			**I**	**D**	**M**
	4.32 Business letters				**I**	**D**
	4.33 Envelopes				**I**	**I**
4.4	**Outlines**				**O**	**O**
4.5	**Tables, Poems, Etc.**					
	4.51 Vertical centering		**I**	**D**	**D**	**M**
	4.52 Horizontal centering			**D**	**D**	**D**
5. FILE MANAGEMENT						
5.1	**Create and Retrieve**	**I**	**D**	**M**	**M/R**	**M/R**
5.2	**Edit and Save**					
	(Multiple Drives)	**I**	**D**	**M**	**M/R**	**M/R**
5.3	**Print**	**O**	**I**	**D**	**M/R**	**M/R**
6. WORD PROCESSING						
6.1	**Proofreading**	**I**	**I**	**D**	**D**	**M/R**
	6.11 Editing (manual)	**I**	**I**	**I**	**D**	**M/R**
	6.22 Spell checking	**O**	**I**	**I**	**D**	**M/R**
	6.23 Thesaurus	**O**	**O**	**I**	**D**	**M/R**
	6.24 Grammar checking	**O**	**O**	**I**	**D**	**M/R**
6.2	**Advanced Editing**					
	6.31 Search/replace	**O**	**I**	**D**	**R**	**M/R**
	6.32 Cut/paste	**O**	**I**	**D**	**R**	**M/R**
	6.33 Copy/move	**O**	**I**	**D**	**R**	**M/R**
	6.34 Character styles/fonts	**O**	**I**	**D**	**R**	**M/R**
	6.35 Graphics	**O**	**O**	**I**	**R**	**M/R**
6.3	**Formatting Using Word Processing**					
	6.31 Character formatting	**O**	**O**	**O**	**I**	**R**
	6.32 Line formatting	**O**	**O**	**I**	**D**	**R**
	6.33 Paragraph formatting	**O**	**O**	**I**	**D**	**R**
	6.34 Page formatting	**O**	**O**	**I**	**D**	**R**

7. PERSONAL COMPUTER OPERATION/LITERACY						
7.1	**Terminology**	**I**	**I**	**I**	**I/D**	**I/D**
7.2	**Hardware**					
	7.21 Basic computer components	**I**	**I/D**	**I/D**	**D/M**	**M/R**
	7.22 Computer/printer selection	**I**	**I**	**I**	**D/M**	**M/R**
7.3	**Software**					
	7.31 Word processing software	**I**	**I**	**I**	**D/M**	**M/R**
	7.32 Application software	**O**	**O**	**I/O**	**I**	**I/D**
	7.33 Keyboarding tutorials	**O**	**O**	**O**	**O**	**O**
8.4	**Technological Communications**					
	8.41 Multimedia	**I**	**I**	**I**	**I**	**D**
	8.42 Interactive Telecommunications	**I/O**	**I/O**	**I/O**	**I/O**	**I/O**
	8.43 Media Literacy	**I**	**D**	**D**	**D**	**D**
	8.44 Netiquette	**I**	**D**	**D**	**D**	**D**
	8.45 Search Techniques	**I**	**D**	**D**	**D**	**D**
	8.46 Internet Safety	**I**	**D**	**D**	**D**	**D**
7.5	**Curriculum Integration**					
	7.51 Interdisciplinary units	**I**	**I**	**I**	**I/D**	**I/D**
	7.52 Core area enhancement	**I**	**I/D**	**I/D**	**D/**	**D**
	7.53 Interactive/cooperative learning experiences	**I**	**I/D**	**I/D**	**D**	**D**
8. COMPUTER APPLICATIONS						
8.1	**Introduction to Databases**				**O**	**O**
8.2	**Introduction to Spreadsheets**				**O**	**O**
8.3	**Integration of WP/DB/SS**				**O**	**O**
8.4	**Intro. to Desktop Publishing**	**O**	**O**	**O**	**O**	**O**
8.5	**Intro. to Internet**	**O**	**O**	**O**	**O**	**O**
9. ETHICAL USE OF TECHNOLOGY						
9.1	**Ethical Use**					
	9.11 Care of Equipment	**I**	**D**	**M**	**M/R**	**M/R**
	9.12 Ethical use of software	**I**	**D**	**D**	**M/R**	**M/R**
9.2	**Ethical Use of Information**	**I**	**D**	**D**	**D**	**D**

Pre-Accounting
Grades 9-12

Units of Credit:

One Semester (Elective)

Prerequisites:

None

Course Overview:

This course provides students with job-entry skills in the keeping of business records such as inventory, invoices, sales slips, payroll, bank reconciliations, file maintenance, journals, and financial statements. The development of a strong work ethic is emphasized while building a foundation for the study of accounting. The content of Pre-Accounting is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Students engage in a variety of learning experiences, including such activities as projects and simulation exercises. Electronic office technology is used when appropriate, for example, ten-key calculators, work processing, data base, and/or spreadsheets. Students will be assessed on completion of projects and simulation exercises and performance on practical application exams.

Topics:

Touch system for ten-key pad
Manual and computer recordkeeping systems
Computer equipment—with emphasis on the proper care of hardware, software, and student workstation
Bank reconciliation
Journals
File maintenance
Financial statement
Processing sales invoices
Payroll

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Develop an awareness of the value and importance of office technology as time saving devices in business.
2. Recognize the differences between manual and computer recordkeeping systems.
3. Demonstrate the ability to use computer equipment—with emphasis on the proper care of hardware, software, and student workstation.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore career opportunities in accounting.
2. Explore career opportunities in business-related fields.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Process business documents and compile requested data.
2. Sort business forms into a usable order and systematically file the forms.
3. Demonstrate productive work habits.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Develop proficiency in touch addition and touch subtraction.
2. Develop the ability to analyze and correct errors.
3. Develop the procedures used in adding, subtracting, multiplying, dividing numbers and working with fractions.
4. Demonstrate the ability to compute a given percent of a number and the percent of increase or decrease.
5. Compute individual extensions and accumulate them.
6. Compute discounts (including chain discounts) and determine the net amount of the bill.
7. Develop critical thinking skills to make informed decisions as consumers and producers of information.
8. Write clearly and effectively for the purpose of communicating financial information.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Solve practical business problems.
2. Complete a manual and/or computer simulation for Pre-accounting with suggested activities in Bank Reconciliation, File Maintenance, Processing Sales and Invoices, Journals, Financial Statements, and Payroll.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
   Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Supplementary consumable materials
Varied software and hardware.
Texts

Assessments:

Assessments include objective tests and performance assessment of learning activities and tasks. Assessment will include quizzes and test in objective and subjective formats.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Accounting I
Grades 10-12

Units of Credit:
One year (Elective)

Prerequisites:

None

Course Overview:

This course helps students comprehend the basic principles of the accounting cycle. Emphasis is placed on analyzing and recording business transactions; preparing and interpreting financial statements, accounting systems, banking and payroll activities; understanding basic types of business ownership; and exploring accounting careers. The content of Accounting I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Students learn from a variety of resources: textbooks, workbooks, computers, simulations, guest speakers, field trips, group projects, note taking, and instructional media materials.

Outcome-based performance indicators provide an accountability system for each subject area. Measures of learning and competency gains, including student progress in the achievement of basic and academic skills, are evaluated in a variety of ways.

Topics:

Quarter 1
Proprietorship
The Accounting Equation
Reporting Financial Information on a Balance Sheet
Changes that Affect Owner's Equity
Analyzing Transactions into Debit and Credit Parts
Journalizing Transactions
Posting to a General Ledger
Cash Control Systems
Work Sheet for a Service Business
Financial Statements for a Proprietorship
Recording Adjusting and Closing Entries

Quarter 2
Journalizing Purchases and Cash Payments
Journalizing Sales and Cash Receipts

Posting to General and Subsidiary Ledgers
Preparing Payroll Records
Payroll Accounting, Taxes, and Reports
Work Sheet for a Merchandising Business
Financial Statements for a Partnership

Quarter 3

Partnership
Recording Adjusting and Closing Entries
Recording Purchases and Cash Payments Using Special Journals
Recording Sales and Cash Receipts Using Special Journals
Uncollectible Accounts Receivable

Quarter 4

Plant Assets and Depreciation
Inventory
Notes and Interest
Accrued Revenue and Expenses
Distributing Dividends
Preparing a Work Sheet
Corporation
- Financial Statements
- End-of-Fiscal-Period Entries

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Develop an awareness of the value and importance of office technology as time-saving devices in business.
2. Demonstrate the ability to use technology in completing an assigned task in a timely fashion.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore related accounting careers.
2. Explore career opportunities in business-related fields.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Develop the ability to analyze and correct errors.
2. Adapt problem-solving and reasoning skills to daily work.
3. Perform accounting procedures using computer and/or manual methods for keeping financial records for an individual proprietorship, a partnership, and a corporation for an entire accounting cycle.
4. Analyze monetary transactions that affect daily life.
5. Evaluate and assess accounting records.
6. Display appropriate and ethical work behaviors.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Develop proficiency in touch addition and touch subtraction.
2. Develop the ability to analyze and correct errors.
3. Apply mathematical concepts (add, subtract, multiply, divide, fractions) within the context of the accounting equation.
4. Demonstrate the ability to compute a given percent of a number and the percent of increase or decrease.
5. Compute individual extensions and accumulate them.
6. Compute discounts (including chain discounts) and determine the net amount of the bill.
7. Develop critical thinking skills to make informed decisions as consumers and producers of information.
8. Write clearly and effectively for the purpose of communicating financial information.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Compare and contrast organizational structure of a proprietorship, partnership, and corporation.
2. Compare and contrast financial records for a proprietorship, partnership, and corporation.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).

2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Century 21 Accounting, South-Western Publishing (Thomson Learning)
Supplementary, consumable materials
Varied software and hardware.

Assessments:

Assessments may include daily assignments and quizzes, teacher observations, performance/written tests, student projects/simulations, writing assignments, and lab performance.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Accounting II
Grades 11-12

Units of Credit:

One year (Elective)

Prerequisites:

"C" Average or better in Accounting I

Course Overview:

This course helps students apply the basic accounting concepts to perform advanced accounting procedures. Emphasis is placed on corporate, managerial, and cost accounting. Departmentalized accounting is used in all applications. Further understanding of basic types of business ownership and exploring additional and expanded accounting careers are an integral component of this course. The content of Accounting II is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Students learn from an expanded variety of resources: textbooks, workbooks, computers using current accounting software, simulations, guest speakers, field trips, group projects, note taking, and instructional media materials.

Outcome-based performance indicators provide an accountability system for each subject area. Measures of learning and competency gains, including student progress in the achievement of basic and academic skills, are evaluated in a variety of ways.

Topics:

Quarter 1

Professional Accounting Careers
Departmentalized
- Purchases and Cash Payments
- Sales and Cash Receipts
- Payroll Data
- Financial Reporting
- Simulation

Control Systems
- Voucher System
- Inventory-Planning and Valuation

Quarter 2

Uncollectible Accounts
Plant Assets
Notes Payable, Prepaid Expenses and Accrued Expenses
Note Receivable, Unearned Revenue and Accrued Revenue
Corporate Accounting
  Organizing a Corporation
  Paying Dividends
  Acquiring Additional Capital
  Financial Analysis and Reporting Simulation

Quarter 3

Management Accounting
 Budgetary Planning and Control
 Management Decisions
 Financial Statement Analysis
Cost Accounting
  Merchandising Business
  Manufacturing Business
    Transactions and Financial Reporting

Quarter 4

 Simulation
 Other Accounting Systems
  Structure of a Partnership
 Financial Reporting of a Partnership
  Budget and Accounting: Not-for-Profit
  Financial Reporting: Not-for Profit
 Applications of Currently-Used Accounting Software

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Enhance comprehension of the value and importance of office technology as time-saving devices in business.
2. Use current technology to complete advanced projects in a timely fashion: departmental, managerial, cost, payroll, and not-for-profit.
3. Evaluate and apply additional terminology related specifically to accounting.
4. Utilize advanced accounting concepts.
5. Assess and evaluate effects on the accounting equation.
6. Measure progress using Generally Accepted Accounting Practices (GAAP).

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Compare and contrast accounting careers.
2. Arrange and evaluate career opportunities in business-related fields.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Assess and evaluate financial data.
2. Integrate problem-solving and reasoning skills in daily life.
3. Exercise appropriate and ethical work behaviors.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.

5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Develop proficiency in touch addition and touch subtraction.
2. Develop the ability to analyze and correct errors.
3. Apply mathematical concepts (add, subtract, multiply, divide, fractions) within the context of the accounting equation.
4. Demonstrate the ability to compute a given percent of a number and the percent of increase or decrease.
5. Compute individual extensions and accumulate them.
6. Compute discounts (including chain discounts) and determine the net amount of the bill.
7. Record, analyze and interpret advanced business transactions and financial statements.
8. Write clearly and effectively for the purpose of communicating financial information.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Build organizational structure and financial records of a proprietorship, partnership, and corporation.
2. Develop and implement not-for-profit and volunteer projects.
3. Plan accounting presentations using effective leadership skills.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Century 21 Advanced Accounting, South-Western Publishing (Thomson Learning)
Supplementary, consumable materials
A variety of current software and hardware.

Assessments:

Assessments may include daily assignments and quizzes, teacher observations, performance/written tests, student projects/simulations, writing assignments, and lab performance.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Computer Concepts

(Replaces Computer/Internet Survival Skills)

Grades 9-12

Units of Credit:

One semester (elective)

Prerequisites:

Touch typing 30 words per minute with 6 or fewer errors on a 3-minute timed writing.

Course Overview:

In this course students learn basic operation and function of the computer, to select appropriate software for various applications, and become aware of the fast-changing world of business and information technology. Students will select and use word processing, desktop publishing, data base, spreadsheet, presentation graphics, multimedia, and Internet (search engine strategies, Internet protocol) and imaging software (scanners, digital cameras). This course provides students with knowledge that is readily applicable in other subject areas (especially useful for senior projects). It is recommended that this course be taken prior to enrolling in Graphics Design and Web Design. This is a lab class—all work is completed using computers on site.

Students engage in a variety of learning experiences, including hands-on computer applications (word processing, spreadsheet, database, Internet research projects, multimedia presentations). Students will have access to the most recent hardware and software available. Students will be assessed on completion of projects and performance on practical application exams.

The content of Computer and Internet Survival Skills is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Navigating Network and Operating System
- Windows/NT
- File Management
- Network Printers, scanners, etc.
- Windows Paint

Word Processing
- Short Review of Word Processing Applications: Tables, Tabs, Graphics Placement, Mail Merge, Etc.

Spreadsheets
- Format

- Formulas and Functions
- Graphics
- Develop Charts
- Integrate with Other Application; i.e., import spreadsheet to a word processing file
- Gather Internet Data and Place in Spreadsheet for Analysis

Linking Files between Applications and the Internet
Use of Scanners, Digital Cameras, Etc.
Presentation Software
- Plan, Design, and present Multimedia Project (Useful for All Classes-especially Senior Projects)

Internet Research Projects
- Use for Research in Word Processing, Spreadsheet and Presentation Software
- Stock Market Simulation/Stock Portfolio
- E-Commerce Research

Database
- Introduction
- Create Databases
- Prepare Final Reports Manipulating Data
- Merge with Word Processing Software

Integrated Projects
- Integrate Two or More of the Above Applications

Special Projects of Personal Interest
Current Technological Issues and/or Event

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Demonstrate the ability to efficiently navigate the network and operating system.
2. Compose, organize, and edit information using a computer.
3. Create, modify, store, retrieve, and print files.
4. Proofread and edit files for accuracy, content, appearance and/or creativity, and for correct grammar, spelling, and punctuation.
5. Use database software to store, query, retrieve, and sort data.
6. Use database software to plan, create, update, add, and delete records.
7. Apply functions and common features of spreadsheet software.
8. Use spreadsheet software to design, create, manipulate, store, retrieve, update, add, search, sort, print, chart, and delete data.
9. Use presentation and/or multimedia software to produce presentations (design, create, import data/graphics, scanned images/sound, edit, format, sequence).
10. Use presentation and/or multimedia software to deliver presentations.
11. Using the Internet efficiently and effectively for research and electronic communications.
12. Analyze current technological events and/or issues.

13. Use and enhance an established repertoire of skills and procedures as needed to operate various technologies.
14. Demonstrate competence with basic system and tool set-up, technical terminology, basic care and maintenance.
15. Use and refine troubleshooting strategies to resolve technical operations problems.
16. Apply sophisticated skills and strategies to enhance performance and ease task completions.
17. Integrate technology in designing, developing, presenting and managing projects. Analyze and evaluate a variety of technologies and match the best technology to a task.
18. Model and exemplify a high standard of ethics for the uses of technology (e.g., privacy, intellectual property).
19. Evaluate the present and future impacts of technology on society, economy and the environment.
20. Ask questions and use technology resources for self-directed learning and problem-solving.
21. Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information.
22. Organize and analyze information from technical sources and communicate findings.
23. Analyze and evaluate existing information to generate personal understanding.
24. Apply and evaluate personal understanding to develop an innovative solution to an authentic problem.
25. Practice technical skills and procedures required for an occupation.
26. Practice safe and appropriate use of technology.
27. Select the appropriate tools, equipment, and procedures for the task.
28. Master the technical skills required for an entry-level job or advanced training.
29. Practice safe and appropriate use of technology.
30. Mastery of tools and equipment needed for an entry-level job or advanced training.
31. Manage and maintain technological systems and follow troubleshooting protocol.
32. Adapt technical information generated from a variety of technical sources.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Apply knowledge of hardware and software appropriately to accomplish tasks.
2. Analyze occupational requirements as they relate to computer technology.
3. Analyze the impact of technological changes on future careers.
4. Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking

skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Demonstrate productive work habits (organization).
2. Use skills to translate information to a new situation.
3. Acquire entry-level job skills.
4. Acquire skills for lifetime learning.
5. Develop and demonstrate oral presentation skills.
6. Comply with copyright laws regarding the use of technology including citing references appropriately.
7. Demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and Intranet.
8. Prioritize, allocate time, prepare and follow schedules to complete a project.
9. Apply appropriate time to task.
10. Use physical resources wisely to accomplish a goal.
11. Select, design, complete and evaluate a project (e.g. manage multiple facets of a project).
12. Demonstrate active leadership skills by participation in group activities and projects.
13. Demonstrate positive personal and work ethics.
14. Demonstrate skills to be a productive citizen.
15. Apply self-esteem building practices.
16. Demonstrate appreciation for diverse perspectives, needs and characteristics.
17. Practice several methods of effective communication.
18. Assume a leadership role (e.g., team leader, CTSO officer, committee chair).
19. Evaluate, compare a contrast positive personal and work ethics.
20. Respect differences and works well with individuals from diverse backgrounds and philosophies.
21. Utilize multiple communication methods to complete a class project.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.

3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrates understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Use fractions, decimals, and percents.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Prioritize job tasks.
2. Demonstrate the ability to manage files and navigate the network.
3. Develop effective teamwork skills through group and partner projects.
4. Practice and demonstrate academic and technical skills to a workplace setting.
5. Identify possible outcomes and consequences of decisions.
6. Use acceptable industry standard equipment in a school setting.
7. Transfer academic and technical skills to the level of industry standards.

8. Demonstrate decision-making and problem-solving skills.
9. Use acceptable industry standard equipment in a school setting.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Software
- Microsoft Office Suite (current edition)
- Intro versions (limited versions) of photo-enhancing and video editing software

Hardware
- Networked computer lab per latest district bid
- Scanners, digital cameras, etc.

Texts

Supplementary consumable materials

Assessments:

Assessments may include daily assignments, practical application projects, and oral presentation using presentation and/or multimedia software.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Computer Word Processing I
Grades 9-12

Units of Credit:

One semester (elective)

Prerequisites:

None

Course Overview:

This course is for students who watch their fingers when keyboarding or who have little or no keyboarding proficiency. It is highly recommended that all students acquire touch keyboarding skills and effectively format a variety of word processing documents prior to high school graduation. After introduction/review of the keyboard, emphasis is placed on skill building and introduction of formatting (reports, letters, tables, memos, etc.) as well as creating, formatting, saving, editing files on a network, and file management. Internet is available for research and career exploration. This is a lab class—all work is completed on computers during class. Instructional strategies and assessments are varied.

The content of Computer Word Processing I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Keyboard operation
- Alphabetic reaches
- Figures and symbols
- Function keys
- Speed/accuracy development

Computer Literacy
- Managing computer files
- Creating
- Saving
- Formatting
- Editing

Prioritizing document processing
- Simulations

Formatting basic business/personal documents
- Letters

- Memos
- Tables
- Reports
- Cards
- Labels
- Envelopes

Enhancing documents

- Graphics
- Research (Internet)
- Career Exploration

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Develop/refine touch keyboarding techniques.
2. Use the touch method on a ten-key pad.
3. Understand the purposes, functions, and features of word processing software.
4. Demonstrate the ability to manage files.
5. Use basic computer terminology.
6. Enhance document creativity using graphics.
7. Apply computer skills to work/personal needs.
8. Use and enhance an established repertoire of skills and procedures as needed to operate various technologies.
9. Demonstrate competence with basic system and tool set-up, technical terminology, basic care and maintenance.
10. Use and refine troubleshooting strategies to resolve technical operations problems.
11. Apply sophisticated skills and strategies to enhance performance and ease task completions.
12. Integrate technology in designing, developing, presenting and managing projects. Analyze and evaluate a variety of technologies and match the best technology to a task.
13. Select and apply telecommunications tools to exchange ideas and information (e.g. geographic information system map, multi-media presentation, web page).
14. Use telecommunications tools to participate in collaborative online projects.
15. Safely use various technologies (e.g., robotics, workplace tools).
16. Model and exemplify a high standard of ethics for the uses of technology (e.g., privacy, intellectual property).
17. Evaluate the present and future impacts of technology on society, economy and the environment.
18. Ask questions and use technology resources for self-directed learning and problem-solving.
19. Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information.

20. Organize and analyze information from technical sources and communicate findings.
21. Analyze and evaluate existing information to generate personal understanding.
22. Create a portfolio of original work using various technologies.
23. Evaluate and apply a variety of technologies to investigate complex problems in multidisciplinary contexts.
24. Apply and evaluate personal understanding to develop an innovative solution to an authentic problem.
25. Practice technical skills and procedures required for an occupation.
26. Practice safe and appropriate use of technology.
27. Select the appropriate tools, equipment, and procedures for the task.
28. Manage and maintain technological tools and follow troubleshooting protocol.
29. Apply technical information to a variety of sources.
30. Master the technical skills required for an entry-level job or advanced training.
31. Practice safe and appropriate use of technology.
32. Mastery of tools and equipment needed for an entry-level job or advanced training.
33. Manage and maintain technological systems and follow troubleshooting protocol.
34. Adapt technical information generated from a variety of technical sources.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore career options.
2. Create documents to enhance communication.
3. Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
4. Utilize local resources to research career plans.
5. Recognize the interrelationships of family, community, career, and leisure roles.
6. Develop, evaluate, and modify personal career plans.
7. Experience an internship, job shadow, or work experience related to their career plan.
8. Evaluate career choices and the effect on family and lifestyle.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Develop the ability to analyze and correct errors.
2. Apply computer skills to specific work tasks.
3. Access, navigate, and use on-line services.

4. Generate a balance of speed and accuracy when keyboarding.
5. Develop and demonstrate positive work habits and attitudes.
6. Prioritize, allocate time, prepare and follow schedules to complete a project.
7. Apply appropriate time to task.
8. Use physical resources wisely to accomplish a goal.
9. Select, design, complete and evaluate a project (e.g. manage multiple facets of a project).
10. Manage multiple priorities and assess effectiveness of outcomes (school, work, family).
11. Evaluate the use of physical resources.
12. Demonstrate active leadership skills by participation in group activities and projects.
13. Demonstrate positive personal and work ethics.
14. Demonstrate skills to be a productive citizen.
15. Apply self-esteem building practices.
16. Demonstrate appreciation for diverse perspectives, needs and characteristics.
17. Practice several methods of effective communication.
18. Assume a leadership role (e.g., team leader, CTSO officer, committee chair).
19. Evaluate, compare a contrast positive personal and work ethics.
20. Implement and evaluate a successful, productive citizenship activity (i.e., community service project).
21. Select methods to constructively build esteem in others as well as self.
22. Respect differences and works well with individuals from diverse backgrounds and philosophies.
23. Utilize multiple communication methods to complete a class project.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.

4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrates understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Use fractions, decimals, and percents.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Prioritize job tasks.
2. Demonstrate the ability to manage files.
3. Practice and demonstrate academic and technical skills to a workplace setting.
4. Apply the concepts of entrepreneurship.
5. Identify possible outcomes and consequences of decisions.
6. Use acceptable industry standard equipment in a school setting.
7. Transfer academic and technical skills to the level of industry standards.
8. Demonstrate decision-making and problem-solving skills.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).

Resources:

A variety of texts and software applications are available.

Assessments:

Assessments include daily assignments, timed writings, objective tests, performance tests, and production tests.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Computer Word Processing II
Grades 9-12

Units of Credit:

One semester (elective)

Prerequisites:

Computer Word Processing I, or middle school Keyboarding Computer Literacy, and/or touch typing at 30 words per minute with 6 or fewer errors on a 3-minute timed writing.

Course Overview:

This course is for students who wish to increase their proficiency in the use of advanced word processing functions. Instruction will include in-depth use of special formatting features in letters, reports, and tables. Students will further explore the use of macros, graphics, file management, merging files, templates, and a flatbed scanner to import graphics. Students engage in a variety of learning experiences and are given the opportunity to express personal creativity via the computer.
This course, in conjunction with Computer Concepts and Computer Graphics, will assist students to acquire the Microsoft Office User Specialist (MOUS) certification.
The content of Computer Word Processing I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Keyboard review
Special features (mastery)
- Letters
- Memos
- Tables
- Reports
- Envelopes

Enhancing documents
- Clip Art/Graphics
- Grammar Check
- Spell Check
- Thesaurus
- Scanner

Supplementary projects
- Business cards
- Greeting cards

Bookmarks
News releases (columns)
Resume
Letters of application
Follow-up letter
Labels
Itineraries

Voice recognition software
Guidance information survey
Career information systems
Career exploration (internet)
Simulations
Job shadow

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Recognize the advantages of technology in the workplace and in society as a whole.
2. Use technology tools for managing and communicating personal/professional information.
3. Explore on-line information resources to meet resource needs.
4. Express creativity in document production.
5. Apply problem-solving and decision-making techniques.
6. Develop critical thinking skills.
7. Demonstrate the ability to think independently.
8. Use and enhance an established repertoire of skills and procedures as needed to operate various technologies.
9. Demonstrate competence with basic system and tool set-up, technical terminology, basic care and maintenance.
10. Use and refine troubleshooting strategies to resolve technical operations problems.
11. Apply sophisticated skills and strategies to enhance performance and ease task completions.
12. Integrate technology in designing, developing, presenting and managing projects. Analyze and evaluate a variety of technologies and match the best technology to a task.
13. Select and apply telecommunications tools to exchange ideas and information
14. (e.g. geographic information system map, multi-media presentation, web page).
15. Use telecommunications tools to participate in collaborative online projects.
16. Safely use various technologies (e.g., robotics, workplace tools).
17. Model and exemplify a high standard of ethics for the uses of technology (e.g., privacy, intellectual property).
18. Evaluate the present and future impacts of technology on society, economy and the environment.

19. Ask questions and use technology resources for self-directed learning and problem-solving.
20. Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information.
21. Organize and analyze information from technical sources and communicate findings.
22. Analyze and evaluate existing information to generate personal understanding.
23. Create a portfolio of original work using various technologies.
24. Evaluate and apply a variety of technologies to investigate complex problems in multidisciplinary contexts.
25. Apply and evaluate personal understanding to develop an innovative solution to an authentic problem.
26. Practice technical skills and procedures required for an occupation.
27. Practice safe and appropriate use of technology.
28. Select the appropriate tools, equipment, and procedures for the task.
29. Manage and maintain technological tools and follow troubleshooting protocol.
30. Apply and adapt technical information to a variety of sources.
31. Master the technical skills required for an entry-level job or advanced training.
32. Mastery of tools and equipment needed for an entry-level job or advanced training.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Refine computer skills to be applicable to the work setting and/or additional education.
2. Research professional career choices.
3. Make informed career choices.
4. Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
5. Utilize local resources to research career plans.
6. Recognize the interrelationships of family, community, career, and leisure roles.
7. Develop, evaluate, and modify personal career plans.
8. Experience an internship, job shadow, or work experience related to their career plan.
9. Evaluate career choices and the effect on family and lifestyle.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Recognize and utilize proper communication skills.

2. Develop and demonstrate positive work habits and attitudes.
3. Prioritize, allocate time, prepare and follow schedules to complete a project.
4. Apply appropriate time to task.
5. Use physical resources wisely to accomplish a goal.
6. Select, design, complete and evaluate a project (e.g. manage multiple facets of a project).
7. Manage multiple priorities and assess effectiveness of outcomes (school, work, family).
8. Evaluate the use of physical resources.
9. Demonstrate active leadership skills by participation in group activities and projects.
10. Demonstrate positive personal and work ethics.
11. Demonstrate skills to be a productive citizen.
12. Apply self-esteem building practices.
13. Demonstrate appreciation for diverse perspectives, needs and characteristics.
14. Practice several methods of effective communication.
15. Assume a leadership role (e.g., team leader, CTSO officer, committee chair).
16. Evaluate, compare a contrast positive personal and work ethics.
17. Select methods to constructively build esteem in others as well as self.
18. Respect differences and works well with individuals from diverse backgrounds and philosophies.
19. Utilize multiple communication methods to complete a class project.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
3. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.

2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrates understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Use fractions, decimals, and percents.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Identify and prioritize work tasks in a specific time frame.
2. Demonstrate the ability to be a leader, as well as a team player.
3. Practice and demonstrate academic and technical skills to a workplace setting.
4. Identify possible outcomes and consequences of decisions.
5. Use acceptable industry standard equipment in a school setting.
6. Transfer academic and technical skills to the level of industry standards.
7. Demonstrate decision-making and problem-solving skills.
8. Use acceptable industry standard equipment in a school setting.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

A variety of texts and software applications are available.

Assessments:

Assessments include daily assignments, timed writings, objective tests, performance tests, production tests, special projects and simulations.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Desktop Publishing
Grades 10-12
(Seeley Lake High School)

Units of Credit:

One semester (Elective)

Prerequisites:

Graphics Design I or consent of instructor

Course Overview:

This course allows students to reinforce, apply, and transfer their academic knowledge and skills to a variety of interesting activities. Emphasis is placed on integrating advanced Microsoft Word concepts with graphic design techniques, principles of page layout and design, drawing software (e.g., Adobe Photoshop, Illustrator, Indesign, and QuarkXPress). Imaging tools (scanners, digital cameras) are utilized to assist in creating a complete business portfolio (stationery, business cards, flyers, brochures, etc.) This is a lab class; all work is completed using computers in site.

The content of Desktop Publishing is arranged around the four MCPS Career and Technical Education Standards. The standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

<u>Topics:</u>

Review of navigating network and operating system
Windows
File Management
Network Printers, Scanners, etc.
Using different graphic file formats
Creating personal and/or business documents
Planning and designing
Promotional documents
Introduction to a variety of software
    Microsoft Office Suite
    Photo-enhancing software
    Publishing software
    Illustration software
Optimization softwareSpecial project of personal interest
Use of scanners, digital cameras, etc
Understanding basic typography
Principals and elements of layout and design

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Demonstrate the ability to efficiently navigate the network and operating system.
2. Compose, organize, and edit information using a computer.
3. Create, modify, store retrieve, and print files.
4. Proofread and edit files for accuracy, content, appearance and/or creativity, and for correct grammar, spelling, and punctuation.
5. Identify and apply principles and techniques of publication design.
6. Use presentation and/or multimedia software to produce presentations (design, create, import data/graphics, scanned images/sound, edit, format, sequence).

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Demonstrate productive work habits (organization).
2. Use skills to translate information to a new situation.
3. Acquire entry-level job skills.
4. Acquire skills for lifetime learning.
5. Develop and demonstrate oral presentation skills.
6. Demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.

3. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.

WC Standard #3: Workplace Information-Students acquire and use workplace information

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrates understanding of written technical and non-technical information necessary for completion of talk or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Use decimals and percents.
6. Use proportions.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and community in the study of organizational behavior.

4a: Specific Course Content

1. Prioritize job tasks.
2. Demonstrate the ability to manage files and navigate the network.
3. Develop effective teamwork skills through group and partner projects.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g., community service project, peer mediation, web page design).

Resources:

Software
- Microsoft Office Suite
- Adobe Package
- QuarkXPress 6

Hardware
- Networked computer lab per latest district bid
- Scanners, digital cameras, etc.

Texts

Supplementary consumable materials

Assessments:

Assessments may include daily assignments, creation of portfolio for projects, practical application projects, and oral presentation using presentation and/or multimedia software.

Meeting Diverse Student Needs:

Students with diverse needs, those with unique abilities and /or disabilities, will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Graphic Design I
Grades 9-12

Units of Credit:

One semester (Elective)

Prerequisites:

Recommended: 30 wpm, Computer Concepts

Course Overview:

This course allows students to reinforce, apply, and transfer their academic knowledge and skills to a variety of interesting activities. Students will become acquainted with graphic design techniques, principles of page layout and design, publishing terminology and applications using a variety of software. They will learn exciting new ways to use the software and will have the opportunity to use their creativity as they design their own publications and revise existing ones. This is a lab class—all work is completed using computers on site.

The content of Computer Print Graphics I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Students engage in a variety of learning experiences, including hands-on computer applications (photo-enhancing software, Internet, publishing software). Students will have access to the most recent hardware and software available. Students will be assessed on completion of projects and performance on practical application exams.

Topics:

Review of Navigating Network and Operating System
- Windows
- File Management
- Network Printers, Scanners, Etc.

Introduction to a Variety of Software
- Photo-enhancing Software
- Publishing Software
- Illustration Software
- Optimization Software

Use of Scanners, Digital Cameras, Etc.
Principals and Elements of Layout and Design
Understanding Basic Typography

Using Different Graphic File Formats
Creating Personal and/or Business Documents
Planning and Designing
Promotional Documents
Special Project of Personal Interest

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Demonstrate the ability to efficiently navigate the network and operating system.
2. Compose organize, and edit information using a computer.
3. Create, modify, store, retrieve, and print files.
4. Proofread and edit files for accuracy, content, appearance and/or creativity, and for correct grammar, spelling, and punctuation.
5. Identify and apply principles and techniques of publication design.
6. Use resources including the Internet efficiently and effectively for research and electronic communications.
7. Use software to design, create, import data/graphics/scanned images; format and publish a variety of publications.
8. Analyze current technological events and/or issues.
9. Analyze the impact of desktop publishing on society including concepts related to persuasiveness, marketing, and point of view.
10. Use and enhance an established repertoire of skills and procedures as needed to operate various technologies.
11. Demonstrate competence with basic system and tool set-up, technical terminology, basic care and maintenance.
12. Use and refine troubleshooting strategies to resolve technical operations problems.
13. Apply sophisticated skills and strategies to enhance performance and ease task completions.
14. Integrate technology in designing, developing, presenting and managing projects. Analyze and evaluate a variety of technologies and match the best technology to a task.
15. Model and exemplify a high standard of ethics for the uses of technology (e.g., privacy, intellectual property).
16. Create a portfolio of original work using various technologies..
17. Apply and evaluate personal understanding to develop an innovative solution to an authentic problem.
18. Practice technical skills and procedures required for an occupation.
19. Practice safe and appropriate use of technology.
20. Select the appropriate tools, equipment, and procedures for the task.
21. Manage and maintain technological tools and follow troubleshooting protocol.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Apply knowledge of hardware and software appropriately to accomplish tasks.
2. Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
3. Utilize local resources to research career plans.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Demonstrate productive work habits (organization).
2. Use skills to translate information to a new situation.
3. Acquire entry-level job skills.
4. Acquire skills for lifetime learning.
5. Develop and demonstrate oral presentation skills.
6. Comply with copyright laws regarding the use of technology including citing references appropriately.
7. Demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and Intranet.
8. Prioritize, allocate time, prepare and follow schedules to complete a project.
9. Apply appropriate time to task.
10. Use physical resources wisely to accomplish a goal.
11. Demonstrate active leadership skills by participation in group activities and projects.
12. Demonstrate positive personal and work ethics.
13. Demonstrate skills to be a productive citizen.
14. Apply self-esteem building practices.
15. Demonstrate appreciation for diverse perspectives, needs and characteristics.
16. Practice several methods of effective communication.
17. Assume a leadership role (e.g., team leader, CTSO officer, committee chair).
18. Evaluate, compare a contrast positive personal and work ethics.
19. Select methods to constructively build esteem in others as well as self.
20. Respect differences and works well with individuals from diverse backgrounds and philosophies.
21. Utilize multiple communication methods to complete a class project.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
2. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrates understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Use fractions, decimals, and percents.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Prioritize job tasks.
2. Demonstrate the ability to manage files and navigate the network.
3. Develop effective teamwork skills through group and partner projects.
4. Use acceptable industry standard equipment in a school setting.
5. Transfer academic and technical skills to the level of industry standards.
6. Demonstrate decision-making and problem-solving skills.
7. Use acceptable industry standard equipment in a school setting.

4b: Workplace Competencies:

Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

Resources:

Software
- Optimization software
- Illustration software
- Publishing Software
- Photo-enhancing Software

Hardware
- Networked computer lab per latest district bid
- Scanners, digital cameras, etc.

Texts
Supplementary consumable materials

Assessments:

Assessments may include daily assignments, practical application projects, and oral presentation using presentation and/or multimedia software.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Graphic Design II
Grades 9-12

Units of Credit:

One semester (Elective)

Prerequisites:

Graphic Design I

Course Overview:

This course allows students to extend the learning gained in Graphic Design I. Class projects will allow students to apply knowledge to practical projects and learn dynamics of working in a professional graphic production situation.

The content of Computer Print Graphics II is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Students engage in a variety of learning experiences, including hands-on computer applications (photo-enhancing software, Internet, publishing software). Students will have access to the most recent hardware and software available. Students will be assessed on completion of projects and performance on practical application exams.

Topics:

Graphic Design as a Career
Roles of the Graphic Designer
Adv. Principals and Elements of Layout and Design
Understanding Typography
Using Different Graphic File Formats
Creating Personal and/or Business Documents
Adv. Planning and Designing
Promotional Documents
Special Project
Creative Materials for School or Business Application

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Demonstrate the ability to efficiently navigate the network and operating system.
2. Compose organize, and edit information using a computer.
3. Create, modify, store, retrieve, and print files.
4. Proofread and edit files for accuracy, content, appearance and/or creativity, and for correct grammar, spelling, and punctuation.
5. Identify and apply principles and techniques of publication design.
6. Use resources including the Internet efficiently and effectively for research and electronic communications.
7. Use software to design, create, import data/graphics/scanned images; format and publish a variety of publications.
8. Analyze current technological events and/or issues.
9. Analyze the impact of desktop publishing on society including concepts related to persuasiveness, marketing, and point of view.
10. Use and enhance an established repertoire of skills and procedures as needed to operate various technologies.
11. Demonstrate competence with basic system and tool set-up, technical terminology, basic care and maintenance.
12. Use and refine troubleshooting strategies to resolve technical operations problems.
13. Apply sophisticated skills and strategies to enhance performance and ease task completions.
14. Integrate technology in designing, developing, presenting and managing projects. Analyze and evaluate a variety of technologies and match the best technology to a task.
15. Model and exemplify a high standard of ethics for the uses of technology (e.g., privacy, intellectual property).
16. Create a portfolio of original work using various technologies.
17. Apply and evaluate personal understanding to develop an innovative solution to an authentic problem.
18. Practice technical skills and procedures required for an occupation.
19. Practice safe and appropriate use of technology.
20. Select the appropriate tools, equipment, and procedures for the task.
21. Manage and maintain technological tools and follow troubleshooting protocol.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Apply knowledge of hardware and software appropriately to accomplish tasks.

2. Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
3. Utilize local resources to research career plans.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Demonstrate productive work habits (organization).
2. Use skills to translate information to a new situation.
3. Acquire entry-level job skills.
4. Acquire skills for lifetime learning.
5. Develop and demonstrate oral presentation skills.
6. Comply with copyright laws regarding the use of technology including citing references appropriately.
7. Demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and Intranet.
8. Prioritize, allocate time, prepare and follow schedules to complete a project.
9. Apply appropriate time to task.
10. Use physical resources wisely to accomplish a goal.
11. Demonstrate active leadership skills by participation in group activities and projects.
12. Demonstrate positive personal and work ethics.
13. Demonstrate skills to be a productive citizen.
14. Apply self-esteem building practices.
15. Demonstrate appreciation for diverse perspectives, needs and characteristics.
16. Practice several methods of effective communication.
17. Assume a leadership role (e.g., team leader, CTSO officer, committee chair).
18. Evaluate, compare a contrast positive personal and work ethics.
19. Select methods to constructively build esteem in others as well as self.
20. Respect differences and works well with individuals from diverse backgrounds and philosophies.
21. Utilize multiple communication methods to complete a class project.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.

2. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
2. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrates understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Use fractions, decimals, and percents.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Prioritize job tasks.
2. Demonstrate the ability to manage files and navigate the network.
3. Develop effective teamwork skills through group and partner projects.
4. Practice and demonstrate academic and technical skills to a workplace setting.

5. Apply the concepts of entrepreneurship.
6. Identify possible outcomes and consequences of decisions.
7. Use acceptable industry standard equipment in a school setting.
8. Transfer academic and technical skills to the level of industry standards.
9. Evaluate and/or design components of a business plan.
10. Demonstrate decision-making and problem-solving skills.
11. Use acceptable industry standard equipment in a school setting.

4b: Workplace Competencies:

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Software
- Optimization software
- Illustration software
- Publishing software
- Photo-enhancing software

Hardware
- Networked computer lab per latest district bid
- Scanners, digital cameras, etc.

Texts
Supplementary consumable materials

Assessments:

Assessment may include daily assessment practical application projects, oral presentations using presentation and/or multimedia software.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Marketing I: Introduction to Business
Grades 10-12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

This course introduces students to the world of work. After a brief overview of the Marketing Education Program, students engage in a number of self-awareness activities relating to interests, aptitudes, abilities, values, and personalities. They acquire skills needed in money management, use of credit, consumer protection, investment, insurance, and business math. In addition, students are introduced to DECA, An Association of Marketing Students, and the operations of the school store.

The content of Marketing I-Introduction to Business is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

A variety of instructional strategies and assessment strategies are used.

Topics:

Business Trends
- Globalization / International Business
- Social Responsibility and Ethics

Economics
- Economic Systems
- Supply and Demand Concepts
- Utilization of Scarce Resources
- Types of business ownership

Business Finance
Finance terms and concepts
Financial Institutions
Financial Statements
Stock Market
Human Resource
Leadership / Management

Team Orientation
Organizational Diversity
Sexual Harassment
Managing Payroll / Benefits
Job Application Process
Personal Business Topics
Insurance
Business Math
Personal Finance
Marketing Concepts
Overview of Marketing
    4 P's

Content Competencies:

Standard #1: Technical Skills and Content Knowledge.

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Identify investment opportunities via the computer.
2. Examine insurance options.
3. Demonstrate an understanding of the payroll process.
4. Explore investment options and formulate a personal investment plan.
5. Develop the ability to complete tax forms.
6. Demonstrate the ability to price, markup, and markdown.

Standard #2: Career and Life Planning.

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Develop self awareness including interests, values, and personality traits.
2. Recognize aptitudes and abilities.
3. Explore career options with self awareness of abilities/aptitudes.
4. Identify and practice effective interpersonal and team building skills.
5. Explore the job-seeking process.
6. Utilize technology to complete parts of the job application process.
7. Develop money management skills.
8. Develop and demonstrate positive work habits and attitudes.

Standard #3: Skills for Life and Work.

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the

realities of today's workplace.

3a: Skills for Life and Work Content

1. Demonstrate productive work habits (organization)
2. Use skills to translate information to a new situation.
3. Acquire entry-level job skills.
4. Acquire skills for lifetime learning.
5. Comply with copyright laws regarding the use of technology including citing references appropriately.
6. Demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.

2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Practice and demonstrate academic and technical skills to a workplace setting.
2. Apply the concepts of entrepreneurship.
3. Identify possible outcomes and consequences of decisions.
4. Use acceptable industry standard equipment in a school setting.
5. Transfer academic and technical skills to the level of industry standards.
6. Evaluate and/or design components of a business plan.
7. Demonstrate decision-making and problem-solving skills.
8. Use acceptable industry standard equipment in a school setting.

Standard #4: Structure of Organizations and Work.

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Describe company policies.
2. Compare company policies with interpersonal and team building skills.
3. Identify laws that affect the organization.

4b: Workplace Competencies:

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design.

Resources:

Variety of texts, computer programs, guest speakers, videos, stock market simulation, and field trips.

Assessments:

Assessments may include daily assignments, objective tests, individual and team projects, and hands-on work experiences.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Marketing II: Principles of Marketing and Sales
Grades 10-12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

This course acquaints students with our free enterprise system and basic marketing concepts such as channels of distribution, target markets, and market segmentation. Human relations and communications instruction includes verbal and non-verbal communication in relation to customers, workers, and employers. A salesmanship unit provides insight into the buying process, customer buying motives, and sales techniques. Students participate in sales demonstrations and group projects in marketing research that involve questionnaire development, surveying, tabulating data, and formulating results. Students will also participate in a computer application named Virtual Business, which allows the students to utilize knowledge obtained from class material.

The content of Marketing II—Principles of Marketing and Sales is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. A variety of instructional strategies and assessment strategies are used.

Topics:

Marketing Mix
- Price, Product, Place, and Promotion
- Pricing Strategies
- Product Development
- Product Distribution
- Promotion Vehicles and Measuring Effectiveness

Marketing Concepts
- Market Research Methods
- Consumer Behavior
- Market Segmentation
- Target Market
- Relationship Marketing
- Utilization of Technology

Advertising

- Advertising Industry
- Advertising Media
- Promotional Activities
- Ad Creativity

E-Commerce
Marketing Ethics
Salesmanship
- Product Knowledge
- Understanding Customers
- Customer Buying Motives
- Steps of the Sales Process

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Utilize technology for economic comparative analysis.
2. Use technology to develop and present advertising.
3. Examine technology's impact upon marketing.
4. Describe advantages and disadvantages of market segmentation and mass marketing.
5. Explain how diversity affects marketing.
6. Build a feature/benefit presentation.
7. Compare and contrast advertising media.
8. Demonstrate and apply the skills of salesmanship.
9. Examine how business ethics relate to the world of work.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Access how human relations skills affect the employer, employee, and the customer.
2. Analyze and effectively answer objections.
3. Develop an understanding of the needs and wants of customers.

4. Recognize how basic communication skills affect one's career.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers,

volunteers, and the community in the study of organizational behavior.

4a: Content Competencies:

1. Identify ways advertising affects the economy.
2. Describe the relationship between the individual and the economy as a whole.
3. Identify the relationships among government, labor, and business.
4. Explain how each component of the marketing mix contributes to successful marketing.

4b: Workplace Competencies:

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Variety of texts, computer programs, guest speakers, virtual business simulation, videos, and field trips.

Assessments:

Assessments may include daily assignments, objective tests, individual and team projects, and hands-on work experiences. Also, Virtual Business allows for updated performance indicators.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Marketing III: Start Your Own Business
Grades 11-12

Units of Credit:

One semester (Elective)

Prerequisites:

Marketing I and/or Marketing II, OR teacher approval.

Course Overview:

This course focuses on entrepreneurship—the start-up and operation of one's own business. An advanced usage of the computer application "Virtual Business" will help develop entrepreneurial skills within this class.

The content of Marketing III—Start Your Own Business is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. A variety of instructional strategies and assessment strategies are used.

Topics:

Entrepreneur's Role in our Economic System
- Traits of entrepreneurs
- Advantages/Disadvantages of Business Ownership

Business Plan
- Self Analysis
- Utilization of Technology
- Trading Area analysis
- Market Segment analysis
- Analysis of Locations

Business Definition
- Determine Customers
- Customer Needs
- Resources Required
- Competitive Advantage
- Marketing/Merchandising

Financing
- Overview
- Projected Income and Expenses
- Feasibility Analysis

Management

Operation
Laws / Regulations
Inventory Control
Risk Management
Growth
Personnel / Staffing

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Utilize technology for economic comparative analysis.
2. Use technology to develop a business proposal.
3. Use technology to analyze trading areas.
4. Analyze trading areas and business locations.
5. Segment a market.
6. Analyze and discuss goods and services based on a new business's operational needs.
7. Develop a marketing/merchandising plan to sell and promote products/services.
8. Connect and build the relationship between income and expenses in order to develop a financial plan.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Collect and analyze self-assessment information, including interests, aptitudes, and personal traits.
2. Compare personal traits with the traits of entrepreneurs.
3. Breakdown the advantages and disadvantages of business ownership.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Discover and develop decision-making skills.
2. Compare leadership styles.
3. Formulate the ability to communicate within business relationships.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math

1. Practice and demonstrate academic and technical skills to a workplace setting.
2. Apply the concepts of entrepreneurship.
3. Identify possible outcomes and consequences of decisions.
4. Use acceptable industry standard equipment in a school setting.
5. Transfer academic and technical skills to the level of industry standards.
6. Evaluate and/or design components of a business plan.
7. Demonstrate decision-making and problem-solving skills.
8. Use acceptable industry standard equipment in a school setting.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Content Competencies:

1. Analyze the human resources needed to operate a business.
2. Demonstrate effective training and employee orientation techniques.
3. Develop employee skills for advancement within an organizational structure.
4. Develop an understanding of management functions and their effects on an organization.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Variety of texts, computer programs, guest speakers, videos, and field trips, Model DECA Projects

Assessments:

Assessments may include daily assignments, objective tests, individual and team projects, hands-on work experiences, DECA competition, and evaluation by community business judges. Also, Virtual Business allows for updated performance indicators.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Marketing IV: Advertising
Grades 11-12

Units of Credit:

One semester (Elective)

Prerequisites:

Graphic Design OR teacher approval.

Course Overview:

Students form advertising agencies to study the import and impact of such on business and commerce. Current events in business, economics, and marketing, from the local level to the international level, are topics of discussion.

The content of Marketing IV—Advertising is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Instructional strategies and assessment strategies are varied.

Topics:

Marketing Overview
Introduction to Advertising
Market Research
Market Analysis
Advertising Planning
Goals, Objectives, Strategies, Tactics
Advertising Budgeting
Advertising Media
  Print Media
  Broadcast Media
  Specialty
  Transit and Outdoor
Creative Development
Ad Production
Final Advertising Project
Project Presentation

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use technology to develop advertisements.
2. Use technology to develop and present investment options.
3. Identify the advantages and disadvantages of advertising media.
4. Describe the relevance of current events to classroom issues.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore investing and advertising as possible careers.
2. Recognize how investing affects one's life plans.
3. Interpret current events and their effect on career planning.
4. Relate student job experiences to classroom material.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Collect, analyze, and interpret data to design an advertising budget.
2. Determine which media best reaches the target market.
3. Identify and evaluate elements of the advertisement that attract attention, develop interest, create desire, and produce action.
4. Sell a promotional plan to a panel of judges.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.

3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Practice and demonstrate academic and technical skills to a workplace setting.
2. Apply the concepts of entrepreneurship.
3. Identify possible outcomes and consequences of decisions.
4. Use acceptable industry standard equipment in a school setting.
5. Transfer academic and technical skills to the level of industry standards.
6. Evaluate and/or design components of a business plan.
7. Demonstrate decision-making and problem-solving skills.
8. Use acceptable industry standard equipment in a school setting.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Identify an investment's effect on the economy.
2. Describe advertising's influence on business and society.
3. Classify business investment options.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Variety of texts, computer programs, guest speakers, videos, and field trips.

Assessments:

Assessments may include daily assignments, objective tests, individual and team projects, judging panels, hands-on work experiences, field trips, and investment simulations.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Street Law
Grades 10-12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

This class emphasizes practical law and provides opportunities for students to become educated in the American legal system. Students learn basic legal principles to apply as a citizen, consumer and employee. Study includes the structure and history of the legal system (criminal and civil), laws applying to minors, contract law, consumer law, employment law, property and landlord/tenant law, insurance, credit law, tort law, and white collar crimes relating to computers.

The content of Street Law is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

This course offers available introduction to the laws that influence and shape our personal and professional lives. Instructional strategies and assessment varies.

Topics:

Kinds of Law
History of Law
Careers in Law
Law Enforcement in Courts
Types of Crimes
Employment Contracts and Conditions
Varieties of Insurance
Substance Abuse
Contract Law
Consumer Law
Tort Law
Juvenile Justice
Credit Law
Bankruptcy
Real and Personal Property Law
Landlord Tenant Law

Warranty and Product Liability
Laws Affecting Computers
Internet Safety

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Develop the ability to utilize technology while enhancing research skills.
2. Identify each student's rights and responsibilities while using technology.
3. Define terminology related specifically to the legal system.
4. Determine which conflict resolution option would be most beneficial to utilize for a given situation (negotiation, mediation, arbitration, fact-finding, courts).
5. Create an awareness and understanding of Indian Tribal Court law.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Create student awareness of positions and careers available within the Legal System.
2. Realize appropriate behaviors that are needed for work.
3. Enhance career opportunities through guest speaker presentations.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Develop the ability to analyze specific legal issues in a relevant fashion.
2. Evaluate and resolve disputes involving legal issues in their lives.
3. Identify rights and responsibilities to be a valuable citizen.
4. Formulate decision-making skills to allow for appropriate behaviors in all aspects of life.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Respond to constructed writing prompts in the subject area using six-trait writing methods.
2. Read, analyze, and report (oral, written) on current civil and criminal issues.
3. Participate in small group discussions and problem solving activities (i.e. mock trials, legislative writings).
4. Apply mathematical concepts (add, subtract, multiply, divide, fractions) within the context of financial contracts and agreements (i.e.. Credit cards, bank loans, interest earned, overdraft fees, etc.).

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Compare and contrast organizational structures of national, state, and local legal systems.
2. Organize and present legal arguments that incorporate critical thinking and leadership skills.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Street Law: A Course in Practical Law, West Educational Publishing.
Supplementary materials to include computer programs, law reviews, mock trial materials, law-related videos and guest speakers from the legal system.

Assessments:

Assessments may include daily assignments, student projects/simulations, performance/written tests, group/individual presentations, writing assignments, and mock trial presentations.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Video Production I
Grades

Units of Credit:

One semester (Elective)

Prerequisites:

Recommended: 30 wpm, Graphic Design

Course Overview:

This course introduces students to principles of broadcast video production and editing software. They will learn a variety of editing software applications and will have the opportunity to use their creativity to produce their own digital videos. This is a lab class—all work is completed using computers on site.

The content of Graphics and Publications Design is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Students engage in a variety of learning experiences, including hands-on computer applications (video editing software, audio/music software, special effects software, and other software applications used to create DVD presentations). Students will have access to the most recent hardware and software available. Students will be assessed on completion of projects and performance on practical application exams.

Topics:

History of Film
Evaluation of film styles
Pre-production
    Planning
    Storyboarding
Production
    Shooting Basics
    Lighting
    Direction
    Continuity
    Framing A Scene
Post-production
    Music Beds

Editing
Special Effects
Credits
Final Output
Film Festival

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Demonstrate the ability to efficiently navigate the network and operating system.
2. Compose organize, and edit information using a computer.
3. Create, modify, store, retrieve, and print files.
4. Proofread and edit files for accuracy, content, appearance and/or creativity, and for correct grammar, spelling, and punctuation.
5. Identify and apply principles and techniques of publication design.
6. Use resources including the Internet efficiently and effectively for research and electronic communications.
7. se software to design, create, import data/graphics/scanned images; format and publish a variety of publications.
8. Analyze current technological events and/or issues.
9. Analyze the impact of desktop publishing on society including concepts related to persuasiveness, marketing, and point of view.
10. Use and enhance an established repertoire of skills and procedures as needed to operate various technologies.
11. Demonstrate competence with basic system and tool set-up, technical terminology, basic care and maintenance.
12. Use and refine troubleshooting strategies to resolve technical operations problems.
13. Apply sophisticated skills and strategies to enhance performance and ease task completions.
14. Integrate technology in designing, developing, presenting and managing projects. Analyze and evaluate a variety of technologies and match the best technology to a task.
15. TE Standard 3 End of Grade 12 Benchmarks
16. Select and apply telecommunications tools to exchange ideas and information
17. (e.g. geographic information system map, multi-media presentation, web page).
18. Use telecommunications tools to participate in collaborative online projects.
19. Safely use various technologies (e.g., robotics, workplace tools).
20. Model and exemplify a high standard of ethics for the uses of technology (e.g., privacy, intellectual property).
21. Evaluate the present and future impacts of technology on society, economy and the environment.
22. Ask questions and use technology resources for self-directed learning and problem-solving.

23. Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information.
24. Organize and analyze information from technical sources and communicate findings.
25. Analyze and evaluate existing information to generate personal understanding.
26. Create a portfolio of original work using various technologies.
27. Evaluate and apply a variety of technologies to investigate complex problems in multidisciplinary contexts.
28. Apply and evaluate personal understanding to develop an innovative solution to an authentic problem.
29. Practice technical skills and procedures required for an occupation.
30. Practice safe and appropriate use of technology.
31. Select the appropriate tools, equipment, and procedures for the task.
32. Manage and maintain technological tools and follow troubleshooting protocol.
33. Apply technical information to a variety of sources.
34. Master the technical skills required for an entry-level job or advanced training.
35. Practice safe and appropriate use of technology.
36. Mastery of tools and equipment needed for an entry-level job or advanced training.
37. Manage and maintain technological systems and follow troubleshooting protocol.
38. Adapt technical information generated from a variety of technical sources.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
2. Utilize local resources to research career plans.
3. Recognize the interrelationships of family, community, career, and leisure roles.
4. Develop, evaluate, and modify personal career plans.
5. Experience an internship, job shadow, or work experience related to their career plan.
6. Evaluate career choices and the effect on family and lifestyle.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Prepare a budget and keep financial records.
2. Prioritize, allocate time, prepare and follow schedules to complete a project.
3. Apply appropriate time to task.

4. Use physical resources wisely to accomplish a goal.
5. Prepare and analyze financial plans, make forecast, make adjustments to meet objectives, and evaluate financial records.
6. Select, design, complete and evaluate a project (e.g. manage multiple facets of a project).
7. Manage multiple priorities and assess effectiveness of outcomes (school, work, family).
8. Evaluate the use of physical resources.
9. Demonstrate active leadership skills by participation in group activities and projects.
10. Demonstrate positive personal and work ethics.
11. Demonstrate skills to be a productive citizen.
12. Apply self-esteem building practices.
13. Demonstrate appreciation for diverse perspectives, needs and characteristics.
14. Practice several methods of effective communication.
15. Assume a leadership role (e.g., team leader, CTSO officer, committee chair).
16. Evaluate, compare a contrast positive personal and work ethics.
17. Implement and evaluate a successful, productive citizenship activity (i.e., community service project).
18. Select methods to constructively build esteem in others as well as self.
19. Respect differences and works well with individuals from diverse backgrounds and philosophies.
20. Utilize multiple communication methods to complete a class project.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrates understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Use fractions, decimals, and percents.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Practice and demonstrate academic and technical skills to a workplace setting.
2. Apply the concepts of entrepreneurship.
3. Identify possible outcomes and consequences of decisions.
4. Use acceptable industry standard equipment in a school setting.
5. Transfer academic and technical skills to the level of industry standards.
6. Evaluate and/or design components of a business plan.
7. Demonstrate decision-making and problem-solving skills.
8. Use acceptable industry standard equipment in a school setting.

4b: Workplace Competencies:

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

<u>Resources:</u>

Software
- Illustration/animation software
- Video editing software
- Audio software
- Special effects software
- Publishing Software (final output)
- Photo-editing Software

Hardware
- Networked computer lab per latest district bid
- Scanners, digital cameras, etc.

Texts
Supplementary consumable materials
Stock photography
Stock clip art

Assessments:

Assessments may include daily assignments, practical application projects, and oral presentation using presentation and/or multimedia software.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Video Production II
Grades

U**nits of Credit**:

One semester (Elective)

Prerequisites:

Recommended: 30 wpm, Graphic Design

Course Overview:

This course allows students to extend the learning gained in Video Production I. Class projects will allow students to apply knowledge to practical projects and learn dynamics of working in a professional video production situation.

The content of Graphics and Publications Design is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Students engage in a variety of learning experiences, including hands-on computer applications (video editing software, audio/music software, special effects software, and other software applications used to create DVD presentations). Students will have access to the most recent hardware and software available. Students will be assessed on completion of projects and performance on practical application exams.

Topics:

Careers in Video and Film
Responsibilities of various jobs within video and film
History of Film
Evaluation of film styles
Adv. Pre-production
- Planning
- Storyboarding

Adv. Production
- Shooting Basics
- Lighting
- Direction
- Continuity
- Framing A Scene

Adv. Post-production

Music Beds
Editing
Special Effects
Credits
Final Output
Film Festival

Content Competencies:

Standard #1: Technical Skills and Content Knowledge
Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Demonstrate the ability to efficiently navigate the network and operating system.
2. Compose organize, and edit information using a computer.
3. Create, modify, store, retrieve, and print files.
4. Proofread and edit files for accuracy, content, appearance and/or creativity, and for correct grammar, spelling, and punctuation.
5. Identify and apply principles and techniques of publication design.
6. Use resources including the Internet efficiently and effectively for research and electronic communications.
7. se software to design, create, import data/graphics/scanned images; format and publish a variety of publications.
8. Analyze current technological events and/or issues.
9. Analyze the impact of desktop publishing on society including concepts related to persuasiveness, marketing, and point of view.
10. Use and enhance an established repertoire of skills and procedures as needed to operate various technologies.
11. Demonstrate competence with basic system and tool set-up, technical terminology, basic care and maintenance.
12. Use and refine troubleshooting strategies to resolve technical operations problems.
13. Apply sophisticated skills and strategies to enhance performance and ease task completions.
14. Integrate technology in designing, developing, presenting and managing projects. Analyze and evaluate a variety of technologies and match the best technology to a task.
15. TE Standard 3 End of Grade 12 Benchmarks
16. Select and apply telecommunications tools to exchange ideas and information
17. (e.g. geographic information system map, multi-media presentation, web page).
18. Use telecommunications tools to participate in collaborative online projects.
19. Safely use various technologies (e.g., robotics, workplace tools).
20. Model and exemplify a high standard of ethics for the uses of technology (e.g., privacy, intellectual property).
21. Evaluate the present and future impacts of technology on society, economy and the environment.
22. Ask questions and use technology resources for self-directed learning and problem-solving.

23. Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information.
24. Organize and analyze information from technical sources and communicate findings.
25. Analyze and evaluate existing information to generate personal understanding.
26. Create a portfolio of original work using various technologies.
27. Evaluate and apply a variety of technologies to investigate complex problems in multidisciplinary contexts.
28. Apply and evaluate personal understanding to develop an innovative solution to an authentic problem.
29. Practice technical skills and procedures required for an occupation.
30. Practice safe and appropriate use of technology.
31. Select the appropriate tools, equipment, and procedures for the task.
32. Manage and maintain technological tools and follow troubleshooting protocol.
33. Apply technical information to a variety of sources.
34. Master the technical skills required for an entry-level job or advanced training.
35. Practice safe and appropriate use of technology.
36. Mastery of tools and equipment needed for an entry-level job or advanced training.
37. Manage and maintain technological systems and follow troubleshooting protocol.
38. Adapt technical information generated from a variety of technical sources.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
2. Utilize local resources to research career plans.
3. Recognize the interrelationships of family, community, career, and leisure roles.
4. Develop, evaluate, and modify personal career plans.
5. Experience an internship, job shadow, or work experience related to their career plan.
6. Evaluate career choices and the effect on family and lifestyle.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Prepare a budget and keep financial records.
2. Prioritize, allocate time, prepare and follow schedules to complete a project.
3. Apply appropriate time to task.

4. Use physical resources wisely to accomplish a goal.
5. Prepare and analyze financial plans, make forecast, make adjustments to meet objectives, and evaluate financial records.
6. Select, design, complete and evaluate a project (e.g. manage multiple facets of a project).
7. Manage multiple priorities and assess effectiveness of outcomes (school, work, family).
8. Evaluate the use of physical resources.
9. Demonstrate active leadership skills by participation in group activities and projects.
10. Demonstrate positive personal and work ethics.
11. Demonstrate skills to be a productive citizen.
12. Apply self-esteem building practices.
13. Demonstrate appreciation for diverse perspectives, needs and characteristics.
14. Practice several methods of effective communication.
15. Assume a leadership role (e.g., team leader, CTSO officer, committee chair).
16. Evaluate, compare a contrast positive personal and work ethics.
17. Implement and evaluate a successful, productive citizenship activity (i.e., community service project).
18. Select methods to constructively build esteem in others as well as self.
19. Respect differences and works well with individuals from diverse backgrounds and philosophies.
20. Utilize multiple communication methods to complete a class project.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrates understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Use fractions, decimals, and percents.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Practice and demonstrate academic and technical skills to a workplace setting.
2. Apply the concepts of entrepreneurship.
3. Identify possible outcomes and consequences of decisions.
4. Use acceptable industry standard equipment in a school setting.
5. Transfer academic and technical skills to the level of industry standards.
6. Evaluate and/or design components of a business plan.
7. Demonstrate decision-making and problem-solving skills.
8. Use acceptable industry standard equipment in a school setting.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Software
- Illustration/animation software
- Video editing software
- Audio software
- Special effects software
- Publishing Software (final output)
- Photo-editing Software

Hardware
- Networked computer lab per latest district bid
- Scanners, digital cameras, etc.

Texts
Supplementary consumable materials
Stock photography
Stock clip art
Advanced level production capabilities (lighting, audio, sound dampening, etc.)

Assessments:

Assessments may include daily assignments, practical application projects, and oral presentation using presentation and/or multimedia software.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Web Design I
Grades 10-12

Units of Credit:

One semester (Elective)

Prerequisites:

Recommended Graphics Design or Instructor Consent

Course Overview:

In this course students review graphic design techniques, principles of page layout and design, publishing terminology and applications, and web page design using a variety of software. They develop workplace ethics, creative ability, self-discipline, and the ability to focus and follow through on projects while working productively in a computer lab environment. This is a lab class—all work is completed using computers on site.

The content of Web and Publications Design is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Students engage in a variety of learning experiences, including hands-on computer applications (photo-enhancing software, Internet, web-authoring programs). Students will have access to the most recent hardware and software available. Computer literacy is mandatory to succeed in life and this course will further enhance students' knowledge. Students will be assessed on completion of projects and performance on practical application exams.

Topics:

Review of Navigating Network and Operating System
- Windows/NT
- File Management
- Network Printers, Scanners, Etc.

Navigation in a Variety of Software
- Photo-enhancing Software
- Optimization Software
- XHTML
- Web-Authoring Programs
- The Internet

Use of Scanners, Digital Cameras, Etc.

Principals of Layout and Design
- Alignment, Contrast, Proximity, and Repetition

- White space
- Psychology of color

Understanding Basic Typography

Planning and Designing Web Pages

- Evaluating Existing Web Pages
- Creating, Obtaining, and Saving Graphics for Web Use
- ADA Compliance for Web Pages
- Graphics Animation
- Web Browser Compatibility

Special Projects of Personal Interest

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Demonstrate the ability to efficiently navigate the network and operating system.
2. Compose organize, and edit information using a computer.
3. Create, modify, store, retrieve, and print or display files.
4. Proofread and edit files for accuracy, content, appearance and/or creativity, and for correct grammar, spelling, and punctuation.
5. Identify and apply principles and techniques of publication design.
6. Use resources including the Internet efficiently and effectively for research and electronic communications.
7. Use software to design, create, import data/graphics/scanned images; format and publish a variety of publications.
8. Analyze current technological events and/or issues.
9. Analyze the impact of desktop publishing on society including concepts related to persuasiveness, marketing, and point of view.
10. Extend the learning environment beyond the classroom through the creation and sharing of electronically formatted and published documents.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Apply knowledge of hardware and software appropriately to accomplish tasks.
2. Analyze occupational requirements as they relate to computer technology.
3. Analyze the impact of technological changes on future careers.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Demonstrate productive work habits (organization)
2. Use skills to translate information to a new situation.
3. Acquire entry-level job skills.
4. Acquire skills for lifetime learning.
5. Comply with copyright laws regarding the use of technology including citing references appropriately.
6. Demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Practice and demonstrate academic and technical skills to a workplace setting.
2. Apply the concepts of entrepreneurship.
3. Identify possible outcomes and consequences of decisions.
4. Use acceptable industry standard equipment in a school setting.

5. Transfer academic and technical skills to the level of industry standards.
6. Evaluate and/or design components of a business plan.
7. Demonstrate decision-making and problem-solving skills.
8. Use acceptable industry standard equipment in a school setting.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Prioritize job tasks.
2. Demonstrate the ability to manage files.
3. Develop effective teamwork skills through group and partner projects.

4b: Workplace Competencies:

> **WC Standard #4:** Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

Resources:

Software
- Web illustration/animation software
- Optimization software
- Web-authoring Software
- Photo-enhancing Software

Hardware
- Networked computer lab per latest district bid
- Scanners, digital cameras, etc.

Texts
Supplementary consumable materials

Assessments:

Assessments may include daily assignments, practical application projects, and special project of personal interest.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Web Design II
Grades 10-12

Units of Credit:

One semester (Elective)

Prerequisites:

Web Design I

Course Overview:

This course allows students to extend the learning gained in Web Design I. Class projects will allow students to apply knowledge to practical projects and learn dynamics of working on professional web development projects.

The content of Web Design is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Students engage in a variety of learning experiences, including hands-on computer applications (video editing software, audio/music software, special effects software, and other software applications used to create DVD presentations). Students will have access to the most recent hardware and software available. Students will be assessed on completion of projects and performance on practical application exams.

Topics:

Web Design as a Career
Roles of the Web Designer
Creating a Web proposal
Web Page Development
  Javascript
  PHP
  ASP
  Cascading Style Sheets
  XML
  Advanced graphic production animation
Special Projects

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Demonstrate the ability to efficiently navigate the network and operating system.
2. Compose organize, and edit information using a computer.
3. Create, modify, store, retrieve, and print or display files.
4. Proofread and edit files for accuracy, content, appearance and/or creativity, and for correct grammar, spelling, and punctuation.
5. Identify and apply principles and techniques of publication design.
6. Use resources including the Internet efficiently and effectively for research and electronic communications.
7. Use software to design, create, import data/graphics/scanned images; format and publish a variety of publications.
8. Analyze current technological events and/or issues.
9. Analyze the impact of desktop publishing on society including concepts related to persuasiveness, marketing, and point of view.
10. Extend the learning environment beyond the classroom through the creation and sharing of electronically formatted and published documents.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Apply knowledge of hardware and software appropriately to accomplish tasks.
2. Analyze occupational requirements as they relate to computer technology.
3. Analyze the impact of technological changes on future careers.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Demonstrate productive work habits (organization)
2. Use skills to translate information to a new situation.
3. Acquire entry-level job skills.
4. Acquire skills for lifetime learning.

5. Comply with copyright laws regarding the use of technology including citing references appropriately.
6. Demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Practice and demonstrate academic and technical skills to a workplace setting.
2. Apply the concepts of entrepreneurship.
3. Identify possible outcomes and consequences of decisions.
4. Use acceptable industry standard equipment in a school setting.
5. Transfer academic and technical skills to the level of industry standards.
6. Evaluate and/or design components of a business plan.
7. Demonstrate decision-making and problem-solving skills.
8. Use acceptable industry standard equipment in a school setting.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content:

1. Prioritize job tasks.
2. Demonstrate the ability to manage files.
3. Develop effective teamwork skills through group and partner projects.

4b: Workplace Competencies:

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

Resources:

Software
- Web illustration/animation software
- Optimization software
- Web authoring software
- Photo-enhancing software
- Dynamic authoring software

Hardware
- Networked computer lab per latest district bid
- Scanners, digital cameras, etc.

Texts

Supplementary consumable materials

Assessments:

Assessments may include daily assignments, practical application projects, and special project of personal interest.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Family and Consumer Sciences
Grade 6

Units of Credit:

One quarter

Prerequisites:

None

Course Overview:

The content of Grade 6 Family and Consumer Sciences is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Food and Nutrition
- Safety and Sanitation
- Measurements
- Tools, Terms, and Terminology
- Consumer Skills
- Resource Management
- Career Exploration

Textiles/Construction
- Consumer Skills, Selection, and Care
- Resource Management, Energy and Technology

Life Skills
- Decision Making
- Communication Skills
- Individual Development

Career Exploration

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Classify foods in the pyramid according to the food pyramid.
2. Explain the importance of eating a balanced diet.

3. Evaluate food labels.
4. Compare the caloric and nutritive value of various foods.
5. Identify how food choices and behaviors can affect fitness.
6. List number of servings and serving size for specific age groups and needs.
7. Apply sanitation and safety practices.
8. Demonstrate understanding of basic measurements and abbreviations.
9. Accurately measure using standard liquid and dry measurements.
10. Determine proper food storage and preparation methods for food safety.
11. Identify the uses of kitchen utensils.
12. Define basic cooking terms.
13. Evaluate technology in food preparation.
14. Demonstrate understanding of the impact of new technologies on food choices and sources.
15. Use technology to analyze personal eating habits.
16. Make wise food choices relative to individual/family needs, income and life styles.
17. Relate how lifestyles and cultural background influence meal patterns within the geographical regions of Montana.
18. Plan and evaluate a simple, nutritious meal or snack.
19. Demonstrate the safe use and maintenance of equipment.
20. Apply basic principles and methods in preparing, serving, and storing foods.
21. Serve and consume food in a socially acceptable manner.
22. Explain the scientific function and properties of ingredients in a recipe.
23. Practice environmental and energy saving techniques in daily activities.
24. Understand the relationship between consumer rights and responsibilities.
25. Describe factors that affect the selection, care, and use of sewing equipment.
26. Develop skills in construction of projects that may be used for career or leisure time.
27. Design/alter a project using creative techniques.
28. Identify sewing terms and symbols and recognize when they are used.
29. Explore the importance of leisure time, hobbies, and/or work.
30. Use the computer as an organizational tool.
31. Evaluate technological advancements in resource management.
32. Investigate the use of technology in the content area of Family and Consumer Sciences (FACS).
33. Analyze factors affecting the development of the family unit in a technological society.
34. Analyze the characteristics of relationships.
35. Develop an understanding of self in relation to community, family, and peers.
36. Recognize individual/social responsibilities to strengthen the family.
37. Explore the student’s role and responsibilities to employment, school and community.
38. Interpret instructions on clothing labels.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore careers in the food/nutrition industry.
2. Identify personal attributes and talents.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Demonstrate ability to read and follow directions.
2. Demonstrate critical thinking and decision-making skills (such as the ability to reason logically and to define and solve problems).
3. Demonstrate the ability to complete a grade-level project using organizational and time management skills.
4. Explore techniques for resolving conflicts.
5. Manage resources of time, energy, and finances efficiently.
6. Create and mange plans/schedules with specific timelines that take into account constraints, priorities, and goals.
7. Acquire, store, allocate, and use materials or space.
8. Manage personal and team resources to achieve personal and team goals.
9. Use a variety of skills to work as a member of a team while recognizing individual differences.
10. Demonstrate a learned skill and teach others.
11. Demonstrate leadership skills by making positive use of rules, regulations and policies of schools and communities.
12. Work toward agreements that include exchanging specific resources or resolving divergent interests in structured and unstructured situations.
13. Identify the need for and obtain data in order to make informed decisions in the workplace.
14. Develop an understanding of content area vocabulary.
15. Identify ways to communicate effectively.
16. Practice effective communication skills.
17. Apply *Reading Comprehension Strategies* before, during and after reading.
18. Locate the meanings, pronunciations, and derivations of unfamiliar words using printed resources.
19. Apply knowledge of text structure, organization and purpose to find information and derive understanding.
20. Use information to develop written, oral, or other presentations.
21. Generate ideas or gather information and develop a plan before writing on self-selected

and assigned topics.

22. Write, revise, and edit text, using conventions of standard written English, using appropriate resources as necessary.
23. Write legibly by selecting cursive, manuscript, or word processing (such as Alpha Smarts) as appropriate.
24. Monitor own understanding of the spoken and written language to gain and share knowledge.
25. Design and create, perform or display media messages in a variety of forms, targeting different audiences and purposes.
26. Make informed decisions as consumers and producers of information.
27. Analyze propaganda techniques, bias, fact, fiction, and opinion in various media messages.
28. Apply the concepts of fractions, decimals, and whole numbers.
29. Define and solve problems.
30. Reason logically.
31. Estimate, communicate, and model their thinking and understanding.
32. Estimate and measure using appropriate tools.
33. Connect mathematical ideas within mathematics and to FACS applications.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Describe and illustrate a system (e.g., relationships among self, family, school, community)
2. Analyze how a system works (i.e., input, process, output, feedback, performance improvement).
3. Design and work within a system (e.g., committees, student council, mock government, simple electrical circuit) to manage, control, and improve performance. Organize and maintain written or computerized records using systematic methods.
4. Select and present information using a variety of methods.
5. Acquire, organize, communicate, process, and analyze information from print and electronic sources.

Resources:

Discovering Life Skills; Glencoe, 2006
Discovering Fool and Nutrition, Glencoe, 2006

Assessments:

Assessments include tests and performance assessments of learning targets. Assessment will include quizzes, test, classroom assignments, projects, and labs in objective and subjective formats.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Grade 6
Investigations
Meadow Hill Middle School Exploratory Course

Course Overview:

"Drama: Act Out!" Offers a variety of theatrical experiences. Class productions, reader's theater, storytelling, improvisation, as well as monologue and dialogue scenes are taught in three major units: "Curtain Call" (a large group production); "Originally Ours" (small group presentations), and "Spotlight" (individual performances).

Practical applications of reading, writing, and speaking will reinforce strategies learned in other curricular areas. Activities such as script and story reading, writing for different audiences and visual design provide opportunities for exploration of themes, self expression and a basic understanding of performance skills. Cooperative group work and evaluative reflection are key concepts of the course. Additionally, students will learn to use technological equipment to further their theater experience such as digital and video camera operation, and computer applications.

The content of **Grade 6 Investigations** is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Theater/Drama vocabulary
Elements of dramatic performances
- Acting
- Script reading
- Set design
- Costuming
- Directing
- Media Tech

Public Speaking
- How to present a topic, story, and opinion
- Voice, stance, and movement

Monologues and dialogues
Improvisation

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Operate video and digital cameras.
2. Use basic applications of video editing software.
3. Upload pictures from digital cameras and transfer pictures to other documents.
4. Create, modify, edit and store information and publications for class assignments and promotional design work (such as flyers and play bills) for class performances using Microsoft Publisher and Word.
5. Develop and perform a theatrical production.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different education, career, and life options available, and design and implement educational, career, and life plans.

1. Demonstrate knowledge of specific theatrical career opportunities.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills, higher-order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Apply basic literacy skills and strategies emphasizing reading, writing and speaking to further develop the ability to think critically and to analyze visual and print materials.
2. Use language clearly, strategically, critically, and creatively to express oneself to a variety of audiences in a variety of theatrical situations.
3. Learn and practice basic skills in goal setting, leadership development, working as a team, problem solving, and performance evaluation.
4. Practice various leadership and worker roles in large and small group situations
5. Manage, control, and improve interactions and communications.
6. Demonstrate the ability to effectively cooperate in large and small groups.
7. Follow specific directions/instructions.
8. Set daily and weekly goals to monitor individual and group progress, and modify when necessary.
9. Recognize and prioritize tasks to meet specified deadlines.
10. Manage time to complete tasks.
11. Build self esteem by acknowledging accomplishments in the following ways: public presentations, written and visual displays of class assignments, peer assessment and evaluation, and journal writing for self-assessment and reflection.

Standard #4: Structure of Organizations and Work

Students will identify and work with major components of both operating and organizational systems established in the classroom.

1. Describe and illustrate a system (such as, relationships among self, family, school, and community).
2. Analyze how a system works (for example, input, process, output, feedback, performance improvement).
3. Design and work within a system (such as, committees, student council, mock government).

Resources:

Microsoft Publisher
Microsoft Word
Video editing software
Video camera
Digital cameras
Computers for word processing (two rooms)
Theatrical set design equipment (costume supplies, props, paint, butcher paper, adhesives, etc.)
School stage
Books on dramatic productions, costume design

Assessments:
Student progress will be assessed using specific criteria outlined in a rubrics chart for each assignment. Unit evaluations will include teacher/peer evaluations, performance assessments, individual assignments and performances, anecdotal records, and written and visual documents and presentations.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Family and Consumer Science
Grade 7

Units of Credit:

One quarter

Prerequisites:

None

Course Overview:

The content of Grade 7 Family and Consumer Sciences is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Food and Nutrition
- Safety and Sanitation
- Measurements
- Tools, Terms, and Terminology
- Consumer Skills
- Resource Management

Textiles/Construction
- Consumer Skills, Selection, and Care
- Resource Management, Energy and Technology

Life Skills
- Decision Making
- Communication Skills
- Life Cycles and Options
- Individual Development
- Stress and Crisis Management

Career Exploration

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Identify nutrients and their functions.
2. Identify food pyramid levels.
3. Classify foods in the pyramid.
4. Explain the importance of eating a balanced diet.
5. Evaluate food labels.
6. Compare the caloric and nutritive value of various foods.
7. Identify how food choices and behaviors can affect fitness.
8. Analyze nutritional value of prepared foods.
9. Apply sanitation and safety practices.
10. Determine proper food storage and preparation methods for food safety.
11. Accurately measure using standard liquid and dry measurements.
12. Identify the uses of kitchen utensils.
13. Define basic cooking terms.
14. Understand the use of technology in food preparation.
15. Demonstrate understanding of the impact of new technologies on food choices and sources.
16. Use technology to analyze personal eating habits.
17. Make wise food choices relative to individual/family needs, income and life styles.
18. Relate how lifestyles and cultural background influence meal patterns within the geographical region of Montana.
19. Plan and evaluate a simple, nutritious meal or snack.
20. Demonstrate the safe use and maintenance of equipment.
21. Apply basic principles and methods in preparing, serving, and storing foods.
22. Serve and consume food in a socially acceptable manner.
23. Explain the scientific function and properties of ingredients in a recipe.
24. Manage family and community resources of time, energy, and finances efficiently.
25. Practice environmental and energy saving techniques in daily activities.
26. Relate the relationship between consumer rights and responsibilities.
27. Describe factors that affect the selection, care, and use of sewing equipment.
28. Demonstrate the ability to read and follow project directions.
29. Identify sewing terms and symbols and recognize when they are used.
30. Design/alter a project using creative techniques.
31. Develop skills in construction of projects that may be used for career or leisure time.
32. Practice skills that can be transferred to clothing/textiles careers.
33. Interpret instructions on clothing labels.
34. Explore productive use of leisure time, hobbies, and/or work.
35. Use the computer as an organizational tool.
36. Evaluate technological advancements in resource management.
37. Investigate the use of technology in the content area of Family and Consumer Sciences (FACS).
38. Analyze factors affecting the development of the family unit in a technological society.
39. Identify and describe stages of development.
40. Analyze the function of the family in various life cycle stages.
41. Recognize lifestyle choices as they exist today.
42. Develop an understanding of self in relation to community, family, and peers.

43. Describe the benefits of a positive self-concept.
44. Explore techniques to manage crisis and stress.
45. Explore the student's role and responsibilities to employment, school and community.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore careers in the food/nutrition industry.
2. Explore clothing and textiles careers.
3. Identify personal aptitudes and talents.
4. Develop plans and time lines for achieving goals.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Demonstrate the ability to complete a grade-level project using task completion strategies.
2. Create and mange plans/schedules with specific timelines that take into account constraints, priorities, and goals.
3. Acquire, store, allocate, and use materials or space.
4. Manage personal and team resources to achieve personal and team goals.
5. Use a variety of skills to work as a member of a team while recognizing individual differences.
6. Demonstrate a learned skill and teach others.
7. Demonstrate leadership skills by making positive use of rules, regulations and policies of schools and communities.
8. Demonstrate communication skills in serving others.
9. Select and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
10. Acquire, organize, communicate, process, and analyze information from electronic sources.
11. Evaluate decision-making techniques.
12. Apply decision-making skills.
13. Identify means of communication.
14. Practice positive communication skills.
15. Analyze the characteristics of relationships.
16. Explore techniques for resolving conflicts.
17. Develop an understanding of content area vocabulary.
18. Reflect on progress and formulate ideas for improvement and future applications.
19. Demonstrate management skills through efficient use of tie, energy, and money.

20. Organize and maintain written or computerized records using systematic methods.
21. Demonstrate ability to read and follow directions.
22. Select and use reference materials, available technology, and resource tools for writing.
23. Apply active listening skills to enhance both evaluation and enjoyment.
24. Analyze a variety of media messages.
25. Design, perform, or display media messages in a variety of forms targeting different audiences.
26. Begin making informed decisions by recognizing and analyzing specific techniques used to convey and manipulate media meaning.
27. Understand that all media influence individuals and society.
28. Apply *Reading Comprehension Strategies* before, during, and after reading.
29. Clarify word meanings through the use of definition, example, restatement, or through the use of contrast stated in the text.
30. Develop an understanding of content area vocabulary.
31. Apply analysis of text structure, organization, and purpose to find information and to expand understanding.
32. Use information to develop written, oral or other presentations.
33. Make associations between ideas expressed in literary works and personal experiences.
34. Explain how culture, ideas, and issues influence literary works
35. Demonstrate choice of appropriate style and format of recipe writing.
36. Emphasize selected writing traits as appropriate to style and format.
37. Use conventions of standard written English.
38. Select manuscript, cursive, or word-processing as appropriate.
39. Use understanding of measurement to convert recipes.
40. Demonstrate understanding of basic measurements and abbreviations.
41. Apply concepts of fractions, decimals, and whole numbers.
42. Define and solve problems.
43. Reason logically.
44. Estimate, communicate, and model their thinking and understanding.
45. Connect mathematical ideas within mathematics and to other Family and Consumer Sciences (FACS).
46. Use appropriate tools to measure lengths to the appropriate precision.
47. Distinguish between unit lengths.
48. Use the customary and metric systems.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Identify the need for and obtain data in order to make informed decisions in the workplace.
2. Select and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).

3. Acquire, organize, communicate, process, and analyze information from print and electronic sources.

Resources:

Discovering Life Skills; Glencoe, 2006
Discovering Fool and Nutrition, Glencoe, 2006

Assessments:

Assessments include tests and performance assessments of learning targets. Assessment will include quizzes, test, classroom assignments, projects, and labs in objective and subjective formats.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Grade 7 Investigations
Behind the Scenes: Broadcast Journalism
Meadow Hill Middle School Exploratory Course

Course Overview:

Behind the Scenes: Broadcast Journalism offers an introduction to the world of reporting. Whether the story is printed or filmed students will learn about and actively participate in the process of reporting issues and stories. This course will focus on four major units: "Extra, Extra, Read all about It!," "News Flash: A Reporter's Life," "Stop the Press: Internet Research" and "A Picture is Worth…".

Practical applications of reading, writing and media literacy will reinforce skills and strategies learned in other content areas. Along with completing journalism assignments, learning terminology and exploring writing styles, students will use technological equipment to further their journalistic experience. Digital and video camera operation, as well as other computer applications will be incorporated into this "hands on" course.

The content of **Grade 7 Investigations** is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Elements of the newspaper
Conducting interviews
Writing like a reporter
Broadcasting
Photojournalism
Technology as a tool
Publishing a newsletter

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Operate video and digital cameras.
2. Understand and participate in basic applications of video editing software to create group CD/DVD
3. Upload and transfer pictures from digital cameras to computer; edit pictures to fit project criteria.

4. Create, modify, edit and store information and publications for class assignments and Microsoft Publisher and Word).
5. Conduct Internet research to locate assigned criteria and topics.
6. Design and develop group news publications.
7. Design and record group broadcast.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different education, career, and life options available, and design and implement educational, career, and life plans.

1. Learn and practice basic skills in goal setting, leadership, group coping strategies, and performance assessment through a variety of journalistic classroom opportunities.
2. Demonstrate knowledge of specific journalistic career opportunities.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills, higher-order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Apply basic literacy skills and strategies emphasizing reading, writing and speaking to further develop the ability to think critically and to analyze visual and print materials.
2. Use language clearly, strategically, critically, and creatively to express oneself to a variety of audiences in a variety of theatrical situations.
3. Practice various leadership and worker roles in large and small group situations; manage, control, and improve interactions and communications; demonstrate the ability to effectively cooperate in large and small groups.
4. Follow specific directions/instructions.
5. Manage, control, and improve interactions and communications with teacher and other students.
6. Demonstrate the ability to effectively cooperate in large and small groups.
7. Manage time to complete tasks.
8. Set daily and weekly goals to monitor individual and group progress, and modify when necessary.
9. Recognize and prioritize tasks to meet specified deadlines.
10. Build self esteem by acknowledging accomplishments in the following ways: public presentations, written and visual displays of class assignments, peer assessment and evaluation, and journal writing for self-assessment and reflection.

Standard #4: Structure of Organizations and Work

Students will identify and work with major components of both operating and organizational systems established in the classroom.

Resources:

Microsoft Publisher
Microsoft Word
Video editing software
Video camera
DVD burner
Digital cameras
Computers for word processing (two rooms)
Set design equipment for group broadcasting sessions
Newspaper subscriptions and publications
Access to copy machines for news publication distribution

Assessments:
Student progress will be assessed using specific criteria outlined in a rubrics chart for each assignment. Unit evaluations will include teacher/peer evaluations, performance assessments, individual assignments and performances, anecdotal records, and written and visual documents and presentations.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Family and Consumer Sciences
Grade 8

Units of Credit:

One quarter

Prerequisites:

None

Course Overview:

The content of Grade 8 Family and Consumer Sciences is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Food and Nutrition
- Nutrition
- Safety and Sanitation
- Measurements
- Tools, Terms, and Terminology
- Consumer Skills
- Resource Management

Textiles/Construction
- Consumer Skills, Selection, and Care
- Resource Management, Energy and Technology

Life Skills
- Decision Making
- Communication Skills
- Individual Development
- Resource Management

Career Exploration

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Identify nutrients and their functions.

2. Identify food pyramid levels.
3. Classify foods in the pyramid.
4. Explain the importance of eating a balanced diet.
5. Evaluate food labels.
6. List number of servings and serving size for specific age groups and needs.
7. Compare the caloric and nutritive value of various foods.
8. Identify how food choices and behaviors can affect fitness.
9. Analyze nutritional value of prepared foods.
10. Apply sanitation and safety practices.
11. Apply basic principles and methods in preparing, serving, and storing foods.
12. Determine proper food storage and preparation methods for food safety.
13. Accurately measure using standard liquid and dry measurements.
14. Use understanding of measurement to convert recipes.
15. Demonstrate understanding of basic measurements and abbreviations.
16. Identify the uses of kitchen utensils.
17. Demonstrate the safe use and maintenance of equipment.
18. Define basic cooking terms.
19. Evaluate the use of technology in food preparation.
20. Demonstrate understanding of the impact of new technologies on food choices and sources.
21. Use technology to analyze personal eating habits.
22. Make wise food choices relative to individual/family needs, income and life styles.
23. Examine the primary methods of food preservation: canning, freezing, and dehydrating.
24. Explain the scientific function and properties of ingredients in a recipe.
25. Relate how lifestyles and cultural background influence meal patterns within the geographical region of Montana.
26. Prepare foreign cuisines using preparation techniques and equipment unique to a country.
27. Serve and consume food in a socially acceptable manner.
28. Plan and evaluate a simple, nutritious meal or snack.
29. Manage family and community resources of time, energy, and finances efficiently.
30. Practice environmental and energy saving techniques in daily activities.
31. Describe the relationship between consumer rights and responsibilities.
32. Describe factors that affect the selection, care, and use of sewing equipment.
33. Demonstrate the ability to read and follow project directions.
34. Identify sewing terms and symbols and recognize when they are used.
35. Design/alter a project using creative techniques.
36. Demonstrate the ability to complete a grade-level project using task completion strategies.
37. Develop skills in construction of projects that may be used for career or leisure time.
38. Interpret instructions on clothing labels.
39. Explore productive use of leisure time, hobbies, and/or work.
40. Develop an understanding of Resource Management vocabulary.
41. Utilize recycling and use available materials.
42. Demonstrate management skills through efficient use of time, energy, and money.
43. Use the computer as an organizational tool.
44. Investigate the use of technology in Family and Consumer Sciences (FACS).

45. Analyze factors affecting the development of the family unit in a technological society.
46. Develop an understanding of self in relation to community, family, and peers.
47. Describe the benefits of a positive self-concept.
48. Identify personal aptitudes and talents.
49. Recognize individual/social responsibilities to strengthen the family.
50. Manage family and community resources of time, energy and finances efficiently.
51. Examine the process of making decisions for financial planning and spending.
52. Examine the types and cost of credit, and pertaining laws.
53. Explore the student's roles and responsibilities to employment, school and community.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Develop skills for locating, evaluating, and interpreting information about careers.
2. Explore careers in the food/nutrition industry.
3. Explore clothing and textiles careers.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Develop an understanding of content area vocabulary.
2. Evaluate decision-making techniques.
3. Apply decision-making skills.
4. Identify means of communication.
5. Practice positive communication skills.
6. Analyze the characteristics of relationships.
7. Explore techniques for resolving conflicts.
8. Develop basic skills including working with fractions, decimals, and whole numbers.
9. Demonstrate critical thinking and decision-making skills.
10. Create and mange plans/schedules with specific timelines that take into account constraints, priorities, and goals.
11. Practice maintaining personal financial records.
12. Acquire, store, allocate, and use materials or space.
13. Manage personal and team resources to achieve personal and team goals.
14. Use a variety of skills to work as a member of a team while recognizing individual differences and cultural diversity (e.g., listening skills).
15. Demonstrate a learned skill and teach others.
16. Demonstrate leadership skills by making positive use of rules, regulations and policies of schools and communities.

17. Work toward agreements that include exchanging specific resources or resolving divergent interests in structured and unstructured situations.
18. Demonstrate communication skills in serving others.
19. Advocate respect for cultural diversity and individual differences.
20. Select and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
21. Acquire, organize, communicate, process, and analyze information from electronic sources.
22. Demonstrate the ability to communicate clearly using appropriate delivery skills.
23. Engage in active listening behaviors.
24. Design and create, perform, or display media messages in a variety of forms to target different audiences and purposes.
25. Analyze propaganda techniques, bias, fact, fiction and opinion in various media messages.
26. Determine how forms of media influence individuals and society.
27. Apply *Reading Comprehension Strategies* before, during, and after reading.
28. Apply knowledge of word structure, context and printed resources to interpret new word meanings and create understanding of the text.
29. Identify and apply strategies to self-monitor reading progress and overcome reading difficulties.
30. Assess progress and formulate plan for improvement.
31. Examine options, establish realistic goals, and implement plans and time lines for achieving goals.
32. Apply comprehension strategies to describe and connect the essential ideas, arguments and perspectives of the text.
33. Use information to develop written, oral or other presentations.
34. Associate ideas expressed in literary works with personal experiences.
35. Analyze how culture, ideas and issues influence literary works.
36. Compare literacy elements and devices in different genre.
37. Demonstrate writing to record, discover, reflect and question.
38. Identify and employ appropriate style and form.
39. Apply conventions of standard written English.
40. Define and solve problems.
41. Reason logically.
42. Estimate, communicate, and model their thinking and understanding.
43. Connect mathematical ideas within mathematics to Family and Consumer Sciences (FACS).
44. Apply concepts of and notation for right angles, parallel lines, and perpendicular lines.
45. Use a table to convert customary and metric systems.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Identify the need for and obtain data in order to make informed decisions in the workplace.
2. Organize and maintain written or computerized records using systematic methods.
3. Select and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, and analyze information from print and electronic sources.
5. Describe and illustrate a system (e.g., relationships among self, family, school, community)
6. Analyze how a system works (i.e., input, process, output, feedback, performance improvement).
7. Design and work within a system (e.g., committees, student council, mock government, simple electrical circuit) to manage, control, and improve performance.

Resources:

Discovering Life Skills; Glencoe, 2006
Discovering Fool and Nutrition, Glencoe, 2006

Assessments:

Assessments include tests and performance assessments of learning targets. Assessment will include quizzes, test, classroom assignments, projects, and labs in objective and subjective formats.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Grade 8 Investigations
Build-A-Business
Meadow Hill Middle School Exploratory Course

Units of Credit:

One quarter

Prerequisites:

None

Course Overview:

"Build-A-Business" offers a glimpse into the work of a small business owner. Students journey through a five-part process detailing how to market and sell a product. Students design a resume and cover letter to apply for leadership and working job positions in the business they create, and then see how their incomes relate to real-life living expenses in a unit on personal finance.

Activities such as writing resumes and cover letters, print media/advertising, detailing business plans, and tracking business expenses provide opportunities for practical applications of literacy and computation skills. Cooperative group work and evaluative reflection are essential to the success of the student-lead business. Additionally, students will learn how to use a variety of resources to make informed decisions.

The content of **Grade 8 Investigations** is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Basic business vocabulary
Resume and cover letter writing
Effective Marketing/Advertising strategies
Business and personal finances
    Profit and loss
Selling a product
Production and distribution

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Create, modify, edit and store information and publications for class assignments and promotional design work (such as flyers, school announcements and personal resumes) using Microsoft Publisher and Word.
2. Operate a video camera and editing software to create commercial advertising for the same of business products.
3. Design and execute a business plan to sell a product..

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different education, career, and life options available, and design and implement educational, career, and life plans.

1. Demonstrate knowledge of specific job opportunities in a small business.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills, higher-order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Apply basic literacy skills and strategies emphasizing reading, writing and speaking to further develop the ability to think critically and to analyze visual and print materials.
2. Use language clearly, strategically, critically, and creatively to express oneself to a variety of audiences in a variety of theatrical situations.
3. Learn and practice basic skills in goal setting, leadership development, working as a team, problem solving, and performance evaluation.
4. Practice various leadership and worker roles in large and small group situations.
5. Manage, control, and improve interactions and communications with the teacher and with other students.
6. Demonstrate the ability to effectively cooperate in large and small groups.
7. Follow specific directions/instructions.
8. Set daily and weekly goals to monitor individual and group progress, and modify when necessary.
9. Recognize and prioritize tasks to meet specified deadlines.
10. Manage time to complete tasks.
11. Build self esteem by acknowledging accomplishments in the following ways: public presentations, written and visual displays of business documents/print media, peer assessment and evaluation, and journal writing for self-assessment and reflection.

Standard #4: Structure of Organizations and Work

Students will identify and work with major components of both operating and organizational systems established in the classroom.

1. Describe and illustrate a system (such as, relationships among self, family, school, and community).
2. Analyze how a system works (for example, input, process, output, feedback, performance improvement).
3. Design and work within a system (such as, committees, student council, mock government).

Resources:

Microsoft Publisher
Microsoft Word
Microsoft Excel
Video editing software
Video camera
Digital cameras
Computers for desktop publishing for print media (two rooms)
Access to purchasing materials and supplies for the continual production of student-created products and business uniforms
Books and other publications on Marketing, Advertising, and Sales

Assessments:
Student progress will be assessed using specific criteria outlined in a rubrics chart for each assignment. Unit evaluations will include teacher/peer evaluations, performance assessments, individual assignments and performances, anecdotal records, and written and visual documents and presentations.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Freshman Seminar
Grade 9

Units of Credit:

One semester

Prerequisites:

None

Course Overview:

Freshman Seminar is a course designed to help grade 9 students make a smooth and successful transition to high school. Freshman Seminar is arranged around the four MCPS Career and Technical Education Standards. These standards include Technological Skills and Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

School Citizenship
School rules—what do they really mean?
School activities:
What is available
How to get involved and stay involved
Competitive activities eligibility guidelines
Intramurals and other non-competitive activities
Handbook and due process
School support services
Self awareness/Reaching your potential
Interests and values
Skills and aptitudes
Personality and learning styles
Building relationships and teamwork
Dealing with change
Decision making
Skills and strategies for academic success
Time management
Organizational skills
Reading strategies for high school textbooks
Monitoring your own progress

Problem solving
Test taking strategies
Successful learning strategies
Communication and listening
Meta-cognition: study for understanding
Exploring careers
Lifestyle and work
Investigating careers
Employability skills
Connecting your interests to your classes
Introduction to career clusters
Exploring choices of elective classes in your interest area
The Planner—every student's best high school tool
Job shadow opportunities through high school
Finding and applying for a job
Gathering leads
Organize a job search
    Presenting yourself
    Workplace expectations
Communication skills
    Sexual harassment
    Peer mediation
    Conflict resolution
    Self Advocacy
    Legal issues
Living a balanced life
    Balance school, work, friends, and family
    Community service
    Life long learning

Content Competencies*:*

Standard #1: Technical and Content Knowledge Skills

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Navigate through the Internet and the Research Process.
2. Develop simple Power Point presentations.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Complete a career interest and aptitude assessment.

2. Contemplate and list his/her unique traits (e.g., passions, values and priorities, personality, strengths and weaknesses).
3. Complete a supervised career-connections experience applying knowledge and skills.
4. Explore opportunities for employment.
5. Exhibit employability skills that lead to job success.
6. Identify high school courses related to specific career choices in their interest area.
7. Examine education and training requirements and opportunities for career paths.
8. Select appropriate high school courses and experiences, and develop a graduation plan that leads to a career choice in his/her interest area.
9. List and explain education and/or training alternatives after high school for a career choice within their interest area.
10. Demonstrate the skills, aptitudes, and attitudes needed to successfully transition into high school, post-secondary education and/or training, the workforce, and adulthood.
11. Recognize the value of education and the importance of becoming internally motivated to succeed in school. Prepare an education and career plan for an occupation within his/her interest area that begins with entry into high school and continues through a post-secondary education and/or training program. Place this information in the personal career portfolio.
12. Complete a plan outlining goals and objectives for education, work, finances, and lifestyle choices.
13. Explore and identify personal interests, aptitudes and abilities and develop strategies to achieve tentative career goals.
14. Reflect on and write a personal definition(s) of success. (To be re-evaluated and re-written throughout the course).

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Demonstrate interpersonal skills that promote positive and productive relationships.
2. Explain and demonstrate effective communication in family community, and career settings.
3. Give and receive constructive criticism.
4. Demonstrate respect for multiple diversities with sensitivity to anti-bias and equity in gender, age, race, culture, ethnicity, socio-economic status, and exceptionalities.
5. Apply reading, writing, listening, speaking, and mathematic skills in school and workplace settings.
6. Recognize the characteristics of an effective team member.
7. Compile a list of transferable skills, along with a corresponding list of possible career options that match their interests and aptitudes.
8. Demonstrate an understanding of the relationship between the changing nature of work and educational requirements throughout the lifetime.

9. Identify the choices and actions that could impede a successful transition to adulthood.
10. Use research material for expository papers and speeches, citing sources.
11. Establish a purpose for reading, such as discovery, interpretation, and enjoyment.
12. Apply *Reading Comprehension Strategies.*
13. Locate appropriate print and non-print information using texts and technical resources.
14. Read widely, to increase knowledge of their own culture, the culture of others, and the common elements across cultures.
15. Read to be entertained, to appreciate a writer's craft, to be informed, to take action, and to discover models to use in their own writing.
16. Connect personal experience to literature.
17. Edit writing to conform to the rules of standard written English.
18. Employ pre-writing, drafting, revision, proofreading and editing strategies for publication.
19. Use reference materials and technology to improve writing.
20. Choose samples of student work to include in portfolios that illustrate their developing proficiency.
21. Prepare, organize, and effectively deliver a variety of presentations.
22. Incorporate multi-media and audio/visual aids into effective oral presentations.
23. Listen critically to distinguish between fact and opinion during formal and informal situations.
24. Apply effective leadership skills in formal and informal situations.
25. Use listening and viewing skills to analyze, appreciate and evaluate informal and formal performances and presentations.
26. Analyze the methods in which media influences individuals and societies.
27. Expand vocabulary through reading, listening, and discussing.
28. Rely on context to determine meanings of words and phrases such as figurative language, idioms, multiple meaning words, and technical vocabulary.
29. Organize writing to ensure coherence, logical progression and support for ideas.
30. Define and solve problems.
31. Reason logically.
32. Use appropriate technology.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Create systems and strategies for managing personal activities and resources, such as schedules, assignments, school materials, and projects.

Resources:

Applying Life Skills; Glencoe McGraw-Hill
Student Text and Activity Manual

Teacher's Wraparound Edition
Teacher's CD Rom
Test Generator
Teaching and Learning Resources
Vocabulary Puzzle Maker

Exploring Careers; Glencoe McGraw-Hill
Student Text and Workbook
Teacher Text and Workbook
Interactive Lesson Planner
Pro Test Generator

Assessments:

Assessments may include classroom assignments, tests and quizzes, cooperative learning experiences, projects**.**

Meeting Diverse Student Needs:

Students with diverse needs--those with unique abilities and/or disabilities--will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Nutrition and Wellness
Grades 10-12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

Nutrition and Wellness will introduce students to the link between fitness and nutrition. The course will focus on nutrition for health, and making healthful food choices. Students are introduced to healthful eating plans along with ways of combining fresh foods and convenience foods. Technology aids students in analyzing individual eating plans.

Nutrition and Wellness is arranged around the four MCPS Career and Technical Education Standards. These standards include Technological Skills and Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Safety and Sanitation
Nutrition for Athletes
Nutrition for Health through the Life Cycle
Food Choices
Fitness and Exercise
Focus on Nutritious Food Preparation
Careers
Special Health Concerns
Nutrients

Content Competencies:

Standard #1: Technical and Content Knowledge Skills

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Evaluate media messages related to health and wellness.
2. Analyze factors that influence nutrition and wellness practices across the life span.
3. Evaluate the nutritional needs of individuals and families in relation to health and wellness across the life span.
4. Determine the impact of technological advances on selection, preparation, and storage of food.
5. Analyze factors that affect price.
6. Evaluate factors that affect food safety, from production through consumption.
7. Evaluate the impact of science and technology on food composition, safety, and other issues.
8. Demonstrate the ability to plan nutritious meals and snacks, shop for food, and choose nutrition-wise cooking methods.
9. Make healthful choices when eating out.
10. Analyze nutrient intake using a computer program.
11. Demonstrate skills and procedures in applying principles of food preparation.
12. Know how to prepare foods in new, "light" ways.
13. Know how to fit traditional fanouts into a healthful eating plan.
14. Evaluate sources of food and nutrition information related to health and wellness.
15. Understand the relationship between physical activity, nutrition and wellness.
16. Assess the impact of food and diet fads, food addictions, and eating disorders on wellness.
17. Analyze personal physical activity links and dietary intake.
18. Analyze a personal health and fitness plan that meets dietary guidelines, reflects recommended physical activity levels, and helps them to achieve and/or maintain an appropriate weight.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Analyze current and future careers related to foods, nutrition and personal wellness.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Select goal-relevant activities, prioritize them, allocate time, and prepare and follow schedules.
2. Demonstrate and teach a learned skill including performance evaluation of self and others this process.
3. Communicate ideas to justify position. Persuade and convince others, and responsibility

challenge existing procedures and policies.

4. Practice and evaluate the negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Demonstrate competence in working with cultural diversity, aid individual differences, and make cultural adjustments.
6. Select and analyze information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
7. Acquire, organize, communicate, process, analyze and evaluate information.
8. Demonstrate management of time, equipment and energy.
9. Apply *Reading Comprehension Strategies* to interpret the text before, during and after reading.
10. Establish a purpose for reading, such as discovery, interpretation, and enjoyment.
11. Locate appropriate print and non-print information using texts and technical resources.
12. Distinguish between primary and secondary source information.
13. Connect personal experience to literature.
14. Adapt subject matter to a variety of styles and formats.
15. Edit writing to conform to the rules of standard English.
16. Use reference materials and technology to improve writing.
17. Prepare, organize, and effectively deliver a variety of presentations.
18. Incorporate multi-media and audio/visual aids into effective presentations.
19. Compare the methods in which media genres influence individuals and societies.
20. Evaluate the clarity, coherence, effectiveness, and quality of a media presentation.
21. Analyze the methods in which media influences individuals and societies.
22. Analyze a speaker's message and delivery style in order to provide useful verbal and non-verbal feedback.
23. Distinguish between fact and opinion.
24. Apply effective leadership skills in formal and informal situations.
25. Use listening and viewing skills to analyze, appreciate and evaluate informal and formal performances and presentations.
26. Expand vocabulary through reading, listening, and discussing.
27. Organize writing to ensure coherence, logical progression and support for ideas.
28. Define and solve problems.
29. Reason logically.
30. Use appropriate technology.
31. Demonstrate decision-making and problem-solving skills.
32. Identify possible outcomes and consequences of decision.
33. Explore needed job skills and attitudes for food careers.
34. Allocate sufficient time, materials and resources to set and achieve goals.
35. Assess skills and distribute work accordingly, evaluate performance and provide feed back toward the accomplishment of personal and team goals.
36. Recognize and practice various roles required as a member of an effective team.
37. Participate as an effective team member by demonstrating cooperation and responsibility.
38. Demonstrate a strong work ethic in class.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

Resources:

Food for Today, Glencoe-McGraw-Hill
- Student Text
- Teacher's Wraparound Edition
- Transparency Package
- Teacher's Classroom Resources
- Teaching and Learning Tools Package
- Application Activities Package

References:
- *Nutrition and Wellness*, Glencoe McGraw-Hill
- *Personal Nutrition*, Thompson Publishers
- Internet
- Speakers
- Cookbooks

Assessments:

Assessments may include various assignments, written tests, class participation, and laboratory activities.

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Culinary Arts I
Grades 9 - 12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

Culinary Arts I provides students with a firm foundation in choosing, purchasing and preparing foods. Students are introduced to various ways of combining fresh foods and convenience foods into a healthy eating plan. Technology aids students in analyzing individual eating plans as well as exploring the use of new and innovative appliances.

Culinary Arts I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technological Skills and Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Nutrition and Wellness
Kitchen Basics
- Safety and sanitation
- Equipment
- Consumer resources
- Consumer decisions

Art of Cooking
- Using recipes
- Preparation techniques and cooking methods

Food Preparation
- Grain products: legumes, nuts, and seeds

Dairy
- Eggs
- Meat/poultry
- Quick and yeast breads

Vegetables/fruits
Intro to Desserts

Etiquette

Table
Restaurant

Careers

Related careers
Relationships
Developing a work plan

Content Competencies:

Standard #1: Technical and Content Knowledge Skills

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Analyze nutrient intake using a computer program.
2. Determine the impact of technological advances on selection, preparation, and storage of food.
3. Analyze factors that affect price.
4. Demonstrate professional practices and standards.
5. Use technology appropriately.
6. Select the appropriate tools, equipment, and procedures for the task
7. Demonstrate planning, organizing, and maintaining an efficient housekeeping operation.
8. Demonstrate safety and sanitation procedures.
9. Apply hazardous materials and waste management procedures.
10. Select, use, and maintain food production equipment; follow troubleshooting protocol.
11. Produce a variety of food products from each of the menu categories.
12. Select, store, prepare, and serve nutritious and aesthetically -pleasing foods.
13. Evaluate food plans according to nutritional guidelines and special dietary needs.
14. Analyze factors that influence nutrition and wellness practices across the life span.
15. Assess the impact of food and diet fads, food addictions, and eating disorders on wellness.
16. Evaluate sources of food and nutrition information, including food labels, related to health and wellness.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Identify job skills and attitudes required for food-related careers.
2. Explore current and future careers related to foods and nutrition.

3. Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
4. Utilize local resources to develop a personal career plan..

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Allocate sufficient time, materials and resources to set and achieve goals.
3. Assess skills and distribute work accordingly, evaluate performance and provide feed back toward the accomplishment of personal and team goals.
4. Recognize and practice various roles required as a member of an effective team.
5. Demonstrate a learned skill.
6. Communicate ideas to justify position, persuade and convince others, and responsibility challenge existing procedures and policies.
7. Practice and evaluate the negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
8. Practice and evaluate positive service skills, (e.g., resolving misunderstandings, consumer complaints, effective communication).
9. Demonstrate competence in working with cultural diversity, aid individual differences, and make cultural adjustments.
10. Demonstrate active leadership skills by participation in group activities and projects.
11. Demonstrate positive personal and work ethics.
12. Practice and apply academic and technical skills to a workplace setting.
13. Demonstrate transferable and employability skills.
14. Identify possible outcomes and consequences of decisions.
15. Use acceptable industry standard equipment in a school setting.
16. Analyze strategies to manage individual, family, career, and community roles and responsibilities.
17. Analyze the reciprocal impact of individual and family participation in community activities.
18. Apply *Reading Comprehension Strategies*.
19. Use research material, citing sources.
20. Establish a purpose for reading, such as discovery, interpretation, and enjoyment.
21. Locate appropriate print and non-print information using texts and technical resources.
22. Distinguish between primary and secondary information.
23. Connect personal experience to literature.
24. Adapt subject matter to a variety of styles and formats.
25. Vary selected writing traits as appropriate for most effective communication.
26. Edit writing to conform to the rules of standard written English.

27. Employ pre-writing, drafting, revision, proofreading and editing strategies for publication.
28. Use reference materials and technology to improve writing.
29. Evaluate published models of accomplished writing for effectiveness.
30. Choose samples of their best writing to include in portfolios that illustrate their developing proficiency.
31. Prepare, organize, and effectively deliver a variety of presentations.
32. Incorporate multi-media and audio/visual aids into effective oral presentations.
33. Compare the methods in which media genres influence individuals and societies.
34. Analyze a speaker's message and delivery style in order to provide useful verbal and non-verbal feedback.
35. Distinguish between fact and opinion.
36. Expand vocabulary through reading, listening, and discussing.
37. Organize writing to ensure coherence, logical progression and support for ideas.
38. Connect mathematical ideas to culinary arts applications.
39. Use proportions and apply rations to convert common measurements and solve problems.
40. Measure length and calculate surface area.
41. Express probability of an event as a ratio, decimal, or percent.
42. Add, subtract, multiply, and divide measurements.
43. Simplify algebraic expressions.
44. Differentiate between the use of variables in expressions, equations, and formulas.
45. Construct, read and interpret appropriate displays (line graphs, box and whiskers, histograms, stem and leaf, and scatterplots).
46. Compute and compare mean, median, and mode for a data set.
47. Calculate theoretical and experimental probability.
48. Design experiments and simulations involving probability.
49. Practice technical skills and procedures required for an occupation in culinary arts.
50. Apply technical information from a variety of sources.
51. Prepare a budget and keep financial records.
52. Prioritize, allocate time, prepare and follow schedules to complete a project.

Standard #4: Structure and Organization of Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Gather, compile, and analyze data from a variety of sources, and evaluate their relevance and accuracy in making informed decisions in the workplace and personal food choices.
2. Organize, process, analyze, and maintain written or computerized records and other forms of information using systematic methods.
3. Select, analyze, information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).

Resources:

Food for Today, Glencoe-McGraw-Hill
- Student Text
- Teacher's Wraparound Edition
- Transparency Package
- Teacher's Classroom Resources
- Teaching and Learning Tools Package
- Application Activities Package

Supplementary Texts
Internet
Speakers
Cookbooks

Assessments:

Assessments may include various assignments, written tests, class participation, and laboratory activities.

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Culinary Arts II
Grades 10 – 12

Units of Credit:

One semester (Elective)

Prerequisites:

Successful completion of Culinary Arts I or Nutrition and Wellness with a grade of "C" or higher; and/or Consent of Instructor

Course Overview:

Culinary Arts II focuses on a wide variety of topics including business etiquette, workplace skills, cultural diversity and food customs, as well as food technology and menu planning. Exposure to careers in the food industry is an integral part of this course. Culinary Arts II is arranged around the four MCPS Career and Technical Education Standards. These standards include Technological Skills and Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Safety and sanitation
Menu planning/service/etiquette
Student demonstrations/report
Global foods
Career opportunities
Relationships with self and the community
Consumer economics
Entrepreneurship
Advanced culinary applications
Tools of the trade
Stocks and sauces
Soups
Appetizers
Advanced baking and pastry application
  Yeast breads
  Pastry/pie crust
Salads, fruits, vegetables
Food art
  Cake decorating
Pasta

Content Competencies:

Standard #1: Technical and Content Knowledge Skills

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Describe the impact of new technology on food science and food preparation.
2. Interpret how consumer choice is influenced by market research and marketing in the field of food science and nutrition.
3. Assess how the scientific and technical advances in food processing, storage, product development, and distribution impact nutrition and wellness.
4. Use computer-based menu systems.
5. Demonstrate safety and sanitation practices when handling, storing, preparing, and serving food.
6. Identify symptoms, causes, and prevention of illness related to mishandled food.
7. Incorporate management of time, energy, and resources in preparing a meal.
8. Practice etiquette, food presentation, and table service appropriate for specific situations.
9. Identify factors affecting the choice of foods in various cultures.
10. Identify types of meals and services.
11. Apply technical information to a variety of sources.
12. Use technology appropriately.
13. Select the appropriate tools, equipment, and procedures for the task.
14. Demonstrate professional practices and standards.
15. Practice technical skills and procedures required for an occupation.
16. Demonstrate preparation for all menu categories to produce a variety of food products.
17. Organize, process, analyze, and maintain computerized records and other forms of information.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore a variety of educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
2. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
3. Utilize local resources to develop a career plan.
4. Analyze career paths within the food production and food services industries.
5. Determine employment and entrepreneurial opportunities and skills, along with preparation requirements for careers in nutrition, food science, and technology.
6. Recognize the interrelationships of family, community, career, and leisure roles.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
3. Assess skills and distribute work accordingly; evaluate performance and promote feedback.
4. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
5. Communicate ideas to justify position. Persuade and convince others, and responsibly challenge existing procedures and policies.
6. Select and analyze information using a variety of methods (e.g. oral, written, graphic, pictorial, multimedia).
7. Acquire, organize, communicate process, analyze and evaluate information.
8. Demonstrate transferable and employability skills in community and workplace settings.
9. Demonstrate respectful and caring relationships along with teamwork and leadership skills in the family, workplace, and community.
10. Demonstrate decision-making skills, problem-solving skills, personal skills and a positive work ethic required of a productive citizen.
11. Recognize and practice various roles required as a member of an effective team.
12. Demonstrate competence in working with cultural diversity, aid individual differences, and make cultural adjustments.
20. Apply *Reading Comprehension Strategies*.
21. Research material, citing sources and including visual aids.
22. Establish a purpose for reading, such as discovery, interpretation, and enjoyment.
23. Locate appropriate print and non-print information using texts and technical resources.
24. Distinguish between primary and secondary information.
25. Read to increase knowledge of their own culture, the culture of others, and the common elements across cultures.
26. Adapt subject matter to a variety of styles and formats.
27. Edit writing to conform to the rules of standard written English.
28. Employ pre-writing, drafting, revision, proofreading and editing strategies for publication.
29. Use reference materials and technology to improve writing.
30. Choose samples of their best work to include in portfolios that illustrate their developing proficiency.
31. Prepare, organize, and effectively deliver a variety of presentations.
32. Incorporate multi-media and audio/visual aids into effective oral presentations.
33. Distinguish between fact and opinion.
34. Apply effective leadership skills in formal and informal situations.

35. Use listening and viewing skills to appreciate informal and formal performances and presentations.
36. Expand vocabulary through reading, listening, and discussing.
37. Organize writing to ensure coherence, logical progression and support for ideas.
38. Define and solve problems, and reason logically.
39. Connect mathematical ideas to culinary arts applications.
40. Use appropriate technology.
41. Use proportions to convert common measurements.
42. Apply ratios and proportions to solve problems.
43. Measure length and calculate surface area.
44. Add, subtract, multiply, and divide measurements.
45. Use order of operations to solve problems.
46. Determine when to use ratios, rates, and proportions.
47. Simplify algebraic expressions.
48. Compute and compare mean, median, and mode for a data set.
49. Calculate probabilities.
50. Evaluate three-dimensional surface area and volume formulas.
51. Demonstrate active leadership skills by participation in group activities and projects.
52. Prioritize, allocate time, prepare and follow schedules to complete a project.
53. Practice several methods of effective communication.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Evaluate quality and performance of a variety of systems (e.g., impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems, including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.
5. Gather, compile, and analyze data from a variety of sources, and evaluate their relevance ad accuracy in making informed decisions in the workplace.

Resources:

Professional Cooking, John Wiley and Sons, Inc.
Guide to Good Food, Goodheart-Willcox
Culinary Essentials
Guest Speakers
Internet
Field Trips
Cookbooks
Other printed material

Assessments:

Assessments may include student assignments, demonstrations of technical cooking skills, written tests, class participation, and laboratory activities.

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Culinary Arts III
Grades 11 – 12

Units of Credit:

One semester or one year (Elective)

Prerequisites:

Successful completion of Culinary Arts II with a grade of "B" or higher and/or Consent of Instructor

Course Overview:

Culinary Arts III enhances the students' career pathway in culinary arts with in-depth hands on experiences that emphasize industry awareness, safety and sanitation, food and beverage production, food service management and customer service. Students will prepare a variety of food products to market and sell through a variety of venues including but not limited to school lunch, a-la-carte line, take-out services, sit-down lunches, catering, school store, and other after-school activities. In addition, students will learn advanced food preparation skills and techniques.

Culinary Arts III focuses on a wide variety of topics including business etiquette, workplace skills, cultural diversity and food customs, as well as more advanced food technology and meal planning for special events. Exposure to careers in the food service industry is an integral part of this course.

Culinary Arts III is arranged around the four MCPS Career and Technical Education Standards. These standards include Technological Skills and Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Safety and Sanitation
Meal Planning/Service/Etiquette
Advanced Cooking Principles
The Preparation of Food for Special Events
Catering Skills
Organizational Skills
Time Management
Marketing Skills
Customer Service Skills
Costing and Cost Analysis
Restaurant Presentation Skills

Career Opportunities
Relationships
Consumer Economics
Entrepreneurship

Content Competencies:

Standard #1: Technical and Content Knowledge Skills

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Demonstrate food safety and sanitation procedures.
2. Select, use, and maintain food production equipment.
3. Plan menu items based on standardized recipes to meet customer needs.
4. Commercially prepare a variety of food products in all menu categories.
5. Implement food service management functions.
6. Demonstrate customer service skills and attitudes.
7. Incorporate management of time, energy, and resources in preparing a meal.
8. Practice etiquette, food presentation, and table service appropriate for specific situations.
9. Identify symptoms, causes, and prevention of illness related to mishandled food.
10. Identify types of meals and services.
11. Prepare budgets, make forecasts, keep records, and make adjustments to meet objectives and evaluate financial records.
12. Assess how the scientific and technical advances in food processing, storage, product development, and distribution impact nutrition and wellness.
13. Apply hazardous materials and waste management procedures.
14. Develop a work environment that provides safety and security.
15. Apply appropriate laundering processes.
16. Apply facilities management functions.
17. Use current technology in food product development and marketing.
18. Interpret how consumer choice is influenced by market research and marketing in the field of food science and nutrition.
19. Use technology appropriately.
20. Use tools and technical equipment efficiently.
21. Demonstrate professional practices and standards.
22. Identify skills and requirements for small food-related businesses.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore a variety of educational, career, and life options available, and design and implement educational, career, and life plans.

1. Determine employment and entrepreneurial opportunities and preparation requirements for careers related to the food industry.
2. Analyze career paths.

3. Experience an internship, job shadow, or work experience related to their career plan.
4. Apply the concepts of entrepreneurship.
5. Describe and evaluate career choices and the effect on family and lifestyle.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Demonstrate an effective work ethic for food related careers.
2. Select and analyze information using a variety of methods (e.g. oral, written, graphic, pictorial, multimedia).
3. Acquire, organize, communicate, process, analyze and evaluate information.
4. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
5. Allocate sufficient time, materials and resources to set and achieve goals.
6. Assess skills and distribute work accordingly, evaluate performance and provide feed back toward the accomplishment of personal and team goals.
7. Recognize and practice various roles required as a member of an effective team.
8. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
9. Communicate ideas to justify position. Persuade and convince others, and responsibly challenge existing procedures and policies.
10. Practice and evaluate positive service skills (e.g., resolving misunderstandings, consumer complaints).
11. Demonstrate competence in working with cultural diversity, aid individual differences, and make cultural adjustments.
12. Apply concepts of service to meet customer expectations.
13. Organize, process, analyze, and maintain written or computerized records and other forms of information using systematic methods.
14. Display workplace readiness skills (e.g., responsibility, self-esteem, sociability, self-management, integrity, honesty).
15. Demonstrate effective decision-making skills.
16. Research material, citing sources and including visual aids.
17. Discuss and demonstrate strategies to overcome bias and stereotyping in the workplace.
18. Transfer academic and technical skills to the level of industry standards.
19. Identify possible outcomes and consequences of decisions.
20. Establish a purpose for reading, such as discovery, interpretation, and enjoyment.
21. Locate appropriate print and non-print information using texts and technical resources.
22. Distinguish between primary and secondary source information.
23. Adapt subject matter to a variety of styles and formats.
24. Edit writing to conform to the rules of standard written English.
25. Employ pre-writing, drafting, revision, proofreading and editing strategies for

publication.

26. Use reference materials and technology to improve writing.
27. Choose samples of their best work to include in portfolios that illustrate their developing proficiency.
28. Prepare, organize, and effectively deliver a variety of presentations.
29. Incorporate multi-media and audio/visual aids into effective oral presentations.
30. Compare the methods in which media genres influence individuals and societies.
31. Distinguish between fact and opinion.
32. Apply effective leadership skills in formal and informal situations.
33. Expand vocabulary through reading, listening, and discussing.
34. Organize writing to ensure coherence, logical progression and support for ideas.
35. Define and solve problems.
36. Reason logically.
37. Estimate, communicate, and model their thinking and understanding.
38. Connect mathematical ideas to culinary arts applications.
39. Use proportions to convert common measurements.
40. Apply ratios and proportions to solve problems.
41. Employ two-dimensional area formulas to solve problems.
42. Measure length and calculate surface area.
43. Express probability of an event as a ratio, decimal, or percent.
44. Add, subtract, multiply, and divide measurements.
45. Use order of operations to solve problems.
46. Determine when to use ratios, rates, and proportions.
47. Simplify algebraic expressions.
48. Compute and compare mean, median, and mode for a data set.
49. Evaluate three-dimensional surface area and volume formulas.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Evaluate quality and performance of a variety of systems (e.g., impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems, including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.

Resources:

Culinary Essentials
Guest Speakers
Internet
Field Trips
Cookbooks
Other printed material

Assessments:

Assessments may include student assignments, demonstrations of technical cooking skills, written tests, class participation, and laboratory activities.

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Textiles and Apparel I
Grades 9 - 12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

Textiles and Apparel I introduces students to clothing, fashion, and basic clothing construction concepts and techniques. Students learn basic sewing skills and apply the skills to apparel and home interiors. Basic use of a sewing machine and serger, basic hand sewing skills, pattern selection, pattern layout, and measuring skills are integral parts of the course. Use of technological equipment and software aids the students in determining measurements, fabric requirements, and design elements. Instructional and assessment strategies are varied.

The content of Textiles and Apparel I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technological Skills and Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Characteristics and types of natural fabrics
Patterns, fabric and notions
Sewing machines, sergers, and other sewing equipment
Getting ready to sew
Basic sewing construction
Applying technology to clothing construction
Career exploration

Content Competencies:

Standard #1: Technical and Content Knowledge Skills

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use technology efficiently.

2. Use current technology to explore trends that facilitate design and production of textile products and apparel.
3. Describe the impact of technology on apparel design and production.
4. Examine production processes for creating fibers, yarn, woven, and knit fabrics, and non-woven textile products.
5. Follow step-by-step instructions to complete a project.
6. Apply pattern selection and construction skills to a project.
7. Use a variety of equipment, tools, supplies, and techniques for apparel and textile construction.
8. Assess effects of textiles characteristics, such as texture and pattern, on design, construction, appearance, care, use and maintenance of products.
9. Describe characteristics of proper fit in garments.
10. Analyze the impact of clothing-care requirements on clothing selection and the clothing budget.
11. Evaluate fiber and textiles materials.
12. Identify, compare and analyze the most common textile fibers, such as wool, cotton, linen and man-made fibers.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Analyze career pathways within the textiles and apparel design industry.
2. Analyze components of all aspects of the industry in relation to career opportunities in the textile and apparel industries.
3. Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
4. Examine education and training requirements and opportunities for career paths in textiles and apparel services.
5. Utilize local resources to research career plans.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Apply effective leadership skills in formal and informal situations.
2. Define and solve problems.
3. Demonstrate the safe and appropriate use of sewing tools and equipment.
4. Demonstrate effective verbal, nonverbal, written, and electronic communication skills.
5. Utilize safe and effective work habits, procedures, and time schedules for completing a project.

6. Evaluate the relationship of good physical and mental health to job success and achievement.
7. Demonstrate appropriate grooming and appearance for the workplace.
8. Demonstrate appropriate business and personal etiquette in the workplace.
9. Select, analyze, information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
10. Acquire, organize, communicate, process, analyze and evaluate information.
11. Select goal-relevant activities, prioritize them, allocate time, and prepare and follow schedules.
12. Allocate sufficient time, materials and resources achieve goals.
13. Assess skills and distribute work accordingly, evaluate performance and provide feed back toward the accomplishment of personal and team goals.
14. Recognize and practice various roles required as a member of an effective team.
15. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
16. Demonstrate competence in working with cultural diversity, aid individual differences, and make cultural adjustments.
17. Locate appropriate print and non-print information using texts and technical resources.
18. Read to increase knowledge of their own culture, the culture of others, and the common elements across cultures.
19. Prepare, organize, and effectively deliver a variety of presentations.
20. Incorporate multi-media and audio/visual aids into effective oral presentations.
21. Evaluate the clarity, coherence, effectiveness, and quality of a media presentation.
22. Analyze a speaker's message and delivery style in order to provide useful verbal and non-verbal feedback.
23. Use listening and viewing skills to analyze, appreciate and evaluate informal and formal performances and presentations.
24. Analyze the methods in which media influences individuals and societies.
25. Connect mathematical ideas to textile and apparel applications.
26. Use appropriate technology.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Assess the cost of constructing, manufacturing, altering, or repairing textile products.
2. Evaluate influences in the ready-to-wear industry that affect personal clothing selections.
3. Understand how the elements and principles of design assist consumers and businesses in making decisions.
4. Describe future trends in textile and apparel careers in human services, science and technology, education, and communication, business and marketing, and art.

Resources:

Clothing Fashion, Fabrics and Construction, Glencoe/McGraw-Hill

Assessments:

Assessments may include student assignments, written tests, field trips, sewing projects, class participation.

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Textiles and Apparel II
Grades 9 - 12

Units of Credit:

One semester (Elective)

Prerequisites:

Textiles and Apparel II or consent of instructor

Course Overview:

Textiles and Apparel II advances students' knowledge of sewing construction, fashion, art and design, fabrics, and the work place. Technology aids students in designing apparel and home furnishings, developing individual projects, and career development. Instructional and assessment strategies are varied.

The content of Textiles and Apparel II is arranged around the four MCPS Career and Technical Education Standards. These standards include Technological Skills and Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. . Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Understanding color and design techniques in apparel and home furnishings
Applying advanced sewing and technology techniques
Career exploration
Entrepreneurship

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use technology effectively.
2. Demonstrate design concepts with material or computer applications.
3. Determine technology applications useful in the apparel design process.
4. Apply advanced innovative designs for apparel and home furnishings.
5. Apply basic and complex color schemes and color theory to develop and enhance visual effects.

6. Analyze the elements and principle of design in apparel and home furnishings.
7. Relate fiber and fabric qualities to product design and function.
8. Recycle a garment through redesign or other modification techniques.
9. Determine alterations to solve common fitting problems resulting from individual differences and special needs.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Determine employment and entrepreneurial opportunities in the textile and apparel industries.
2. Participate in a career-connections experience to demonstrate occupational skill applications acquired through the study of textiles and apparel.
3. Investigate the uses of technology in textile careers.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Apply effective leadership skills in formal and informal situations.
2. Define and solve problems.
3. Reason logically.
4. Demonstrate effective verbal, nonverbal, written, and electronic communication skills.
5. Apply knowledge and skills developed in the study of apparel and textiles to the home and business.
6. Select, analyze, information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
7. Acquire, organize, communicate, process, analyze and evaluate information.
8. Select goal-relevant activities, prioritize them, allocate time, and prepare and follow schedules.
9. Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives and evaluate financial records.
10. Allocate sufficient time, materials and resources to set and achieve goals.
11. Assess skills and distribute work accordingly, evaluate performance and provide feed back toward the accomplishment of personal and team goals.
12. Recognize and practice various roles required as a member of an effective team.
13. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
14. Communicate ideas to justify position. Persuade and convince others, and responsibility

challenge existing procedures and policies

15. Practice and evaluate positive service skills, (e.g., resolving misunderstandings, consumer complaints).
16. Demonstrate competence in working with cultural diversity, aid individual differences, and make cultural adjustments.
17. Locate appropriate print and non-print information using texts and technical resources.
18. Prepare, organize, and effectively deliver a variety of presentations.
19. Incorporate multi-media and audio/visual aids into effective oral presentations.
20. Evaluate the clarity, coherence, effectiveness, and quality of a media presentation.
21. Analyze a speaker's message and delivery style in order to provide useful verbal and non-verbal feedback.
22. Use listening and viewing skills to analyze, appreciate and evaluate informal and formal performances and presentations.
23. Analyze the methods in which media influences individuals and societies.
24. Estimate, communicate, and model their thinking and understanding.
25. Connect mathematical ideas to textile and apparel applications.
26. Use appropriate technology.
27. Investigate properties of geometric shapes using technology (computers, protractors, rulers, and compasses).
28. Measure length and calculate surface area.
29. Evaluate three-dimensional surface area.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Analyze demographic, societal, and cultural factors affecting the apparel industry.
2. Utilize planning, organization, management, and sequencing when producing a project.
3. Evaluate quality and performance of a variety of systems (e.g., impact of change).
4. Demonstrate skills needed to produce, alter, or repair textile products and apparel.
5. Evaluate elements of textiles and apparel merchandising.
6. Evaluate the components of customer service.
7. Demonstrate general operational procedures required for business profitability.

Resources:

Entrepreneurship and Small Business Management; Glencoe McGraw-Hill
Clothing Fashion, Fabrics and Construction; Glencoe McGraw-Hill

Assessments:

Assessment tools may include student assignments, written tests, field trips, sewing projects, and class participation.

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Early Childhood Education I
Grades 10 - 12

Units of Credit: One semester (Elective)

Prerequisites: None

Course Overview:

Early Childhood Education I brings family, child development and parenting concepts alive for students. Students learn that parenting and child care skills depend on knowledge of child growth and development. Students may extend their knowledge beyond the high school setting by observing children at childcare and preschool facilities. Technology delivers up-to date research related to advances in early childhood education.

Early Childhood Education I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technological Skills and Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Learning about yourself
Learning about children
- Why study children?
- What is child development?
- Principles of growth and development
- Theories of growth and development
- Observing children

Families today
- Changes in family roles/family types
- The family life cycle/roles of parents
- Parenting styles
- Preparing for parenting

Prenatal development and the newborn
- Pregnancy/teen pregnancy
- Prenatal care
- Birth
- The newborn
- Developmental differences/birth defects

Infants/toddlers/preschoolers
- Physical development
- Intellectual development

Social-emotional development
Providing for their needs
Guiding and caring for children/School age children
Teaching through play and literacy
Protecting children's health and safety
Child care
Careers in child related fields

Content Competencies:

Standard #1: Technical and Content Knowledge Skills

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Analyze the impact of technology on the workforce and the family.
2. Practice and advocate ethical behavior in the use of technology.
3. Use developmentally appropriate practices when planning for early childhood education and services.
4. Develop curriculum and instruction to meet children's developmental needs and interests.
5. Create a safe and healthy learning environment for children.
6. Demonstrate techniques that develop relationships with children.
7. Demonstrate professional practices and standards when working with children.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Analyze career paths within early childhood education and services.
2. Analyze career paths within family and community services areas.
3. Analyze factors related to providing family and community services.
4. Recognize the interrelationships of family, community, career, and leisure roles.
5. Describe how skills developed in academic and occupational programs relate to career goals.
6. Evaluate career choices and the effect on family and lifestyle.
7. Develop, evaluate, and adjust personal career plans.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Demonstrate active leadership skills by participation in group activities and projects.
2. Demonstrate positive personal and work ethics.
3. Identify ways to constructively build esteem in others as well as self.
4. Respect differences and work effectively with individuals from diverse backgrounds and philosophies.
5. Use a variety of communication methods to complete a class project.
6. Select the appropriate tools, equipment, and procedures for the task.
7. Apply *Reading Comprehension Strategies* when reading technical information.
8. Apply technical information from a variety of sources.
9. Use research skills when preparing papers and speeches, citing sources.
10. Understand purposes for reading--such as discovery, interpretation, and enjoyment.
11. Connect personal experience to literature.
12. Employ pre-writing, drafting, revision, proofreading and editing strategies of standard written English.
13. Use reference materials and technology to improve writing.
14. Prepare, organize, and effectively deliver a variety of presentations.
15. Incorporate multi-media and audio/visual aids into effective oral presentations.
16. Evaluate informal and formal performances and presentations.
17. Distinguish between fact and opinion.
18. Analyze the methods in which media influences individuals and societies.
19. Expand vocabulary through reading, listening, and discussing.
20. Reason logically and solve problems.
21. Connect mathematical ideas to child development applications.
22. Discuss and demonstrate strategies to overcome bias and stereotyping in the workplace.
23. Display workplace readiness skills (e.g., responsibility, self-esteem, sociability, self-management, integrity, honesty).
24. Demonstrate effective decision-making skills.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Gather, compile, and analyze data from a variety of sources, and evaluate their relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, evaluate and maintain written or computerized records and other forms of information using systematic methods.
3. Select and analyze information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Practice, analyze and evaluate a variety of systems considering external factors and uncontrolled variables to optimize output.
5. Analyze the impact of family as a system on individuals and society.

Resources:
The Developing Child, Glencoe McGraw-Hill

Assessments:
Assessments may include class participation, assignments, written tests, projects, and child observations.

Meeting Diverse Student Needs:
Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Early Childhood Education II
Grades 10 - 12

Units of Credit:

One semester (Elective)

Prerequisites:

Successful completion of Early Childhood Education I with a grade of "C" or higher, and/or consent of instructor

Course Overview:

Early Childhood Education II enhances student knowledge and skills related to child growth and development. Students develop skills to promote the well-being and healthy guidance of children, strengthen families in a culturally diverse society and pursue careers related to the care and education of children. Students may extend their knowledge beyond the high school setting by observing and interacting with children at childcare and preschool facilities. Technology delivers up-to-date research related to advances in early childhood education.

Early Childhood Education II is arranged around the four MCPS Career and Technical Education Standards. These standards include Technological Skills and Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Understanding yourself
Understanding children from birth to six years
Relationships
Creating a safe and healthy environment
Guiding children
Learning experiences for children
Programs for infants, toddlers, school age children with a focus on literacy
Children with special needs
Careers in child care

Content Competencies:

Standard #1: Technical and Content Knowledge Skills

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Analyze principles of human growth and development.
2. Analyze factors that impact human growth and development.
3. Consider cultural and environmental influences when assessing children's development.
4. Practice strategies that promote children's growth and development.
5. Demonstrate interpersonal skills that promote positive and productive relationships with children.
6. Use developmentally appropriate practices when planning for early childhood education and services.
7. Demonstrate how to integrate curriculum and instruction to meet children's developmental needs and interests in a safe and healthy learning environment.
8. Understand basic health practices and prevention procedures for workers and children regarding childhood illness and communicable diseases.
9. Demonstrate sanitation procedures for a clean and safe childcare environment.
10. Analyze roles and responsibilities of parenting.
11. Evaluate parenting practices that maximize human growth and development.
12. Analyze physical and emotional factors related to the parenting process.
13. Implement learning activities in all curriculum areas that meet the developmental needs of children.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Complete a supervised career-connection experience applying knowledge and skills developed in the study of child development.
2. Examine education and training requirements and opportunities for career paths in early childhood education and services.
3. Analyze career paths within early childhood, education and services.
4. Explore opportunities for employment.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Exhibit employability skills that lead to job success in the child care industry.

2. Determine effective business management procedures for the child care industry.
3. Demonstrate active leadership skills by participation in group activities and projects.
4. Determine the roles and functions of individuals engaged in early childhood education and services.
5. Apply professional ethical standards as accepted by the recognized professional organizations.
6. Apply business management skills to planning businesses in early childhood education and services.
7. Examine the impact of early childhood education and service occupations on local, state, national, and global economies.
8. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
9. Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives and evaluate financial records.
10. Allocate sufficient time, materials and resources to set and achieve goals.
11. Assess skills and distribute work accordingly, evaluate performance and provide feed back toward the accomplishment of personal and team goals.
12. Recognize and practice various roles required as a member of an effective team.
13. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
14. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
15. Evaluate existing procedures and policies regarding positive service skills.
16. Demonstrate competence in working with cultural diversity, aid individual differences, and make cultural adjustments.
17. Apply *Reading Comprehension Strategies* when reading technical information.
18. Apply technical information from a variety of sources.
19. Use research skills when preparing papers and speeches, citing sources.
20. Understand purposes for reading--such as discovery, interpretation, and enjoyment.
21. Connect personal experience to literature.
22. Employ pre-writing, drafting, revision, proofreading and editing strategies of standard written English.
23. Use reference materials and technology to improve writing.
24. Prepare, organize, and effectively deliver a variety of presentations.
25. Incorporate multi-media and audio/visual aids into effective oral presentations.
26. Evaluate informal and formal performances and presentations.
27. Distinguish between fact and opinion.
28. Analyze the methods in which media influences individuals and societies.
29. Expand vocabulary through reading, listening, and discussing.
30. Reason logically and solve problems.
31. Connect mathematical ideas to child development applications.
32. Discuss and demonstrate strategies to overcome bias and stereotyping in the workplace.
33. Display workplace readiness skills (e.g., responsibility, self-esteem, sociability, self-management, integrity, honesty).
34. Demonstrate effective decision-making skills.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Understand federal, state, and local standards, policies, regulations and laws that impact children, families, and programs.
2. Practice, analyze, and evaluate a variety of systems, including optimizing outputs and making adjustments.
3. Evaluate external support systems that provide services for parents.
4. Gather, compile, and analyze data from a variety of sources, and evaluate their relevance and accuracy in making informed decisions in the workplace.
5. Organize, process, analyze, and maintain written or computerized records and other forms of information using systematic methods.

Resources:

Child and Adult Care Professionals (Glencoe McGraw-Hill)
Text
Lab Manual
Instructor Annotated Lab Manual

Childhood and Adolescence: Voyages in Development (Thomson Learning South Western Wadsworth)
Text
Workbook
Instructors Manual
Multimedia CD

Observing Children and Adolescents (Thomson Learning South Western Wadsworth)
Workbook
Teachers Workbook

Assessments:

Assessments may include class participation, assignments, written tests, projects, child care participation.

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Fashion Merchandising
Grades 9 - 12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

Students gain insight into the world of fashion merchandising. Students shop the market, develop consumer skills, and explore career options available in the world of fashion. Retail business is studied and the qualifications and expectations for employees are addressed. A store project dealing with advertising and layout composes part of the course requirements. In addition students participate in a retail production and manufacturing project. Marketing, advertising, packaging, customer service, ethics and production distribution are studied. Technology aids students in designing clothing and computer sewing applications.

Fashion Dynamics is arranged around the four MCPS Career and Technical Education Standards. These standards include Technological Skills and Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Fashion and marketing
The fashion business
Fashion centers
Types of fashion and trends
Textiles and production
Designing fashion
Creators of fashion
Fashion products and research
Fashion distribution
Fashion pricing and technology
Promoting fashion
Preparing for fashion careers
Working in fashion

Content Competencies:

Standard #1: Technical and Content Knowledge Skills

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Explore current technology trends that facilitate design and production of textiles products and apparel.
2. Demonstrate design concepts using a variety of technology.
3. Apply elements and principles of design to assist consumers and businesses in making decisions.
4. Demonstrate ability to use technology for fashion design.
5. Evaluate fiber and textiles materials.
6. Review textiles legislation, standards, and labeling in the global economy.
7. Apply basic and complex color schemes and color theory to develop and enhance visual effects.
8. Utilize elements and principles of design in designing, constructing, and/or altering textiles products.
9. Implement design that takes into consideration ecological, environmental, sociological, psychological, technical, and economic trends and issues.
10. Demonstrate apparel and textile design skills.
11. Demonstrate skills needed to produce, alter, or repair textiles products and apparel.
12. Evaluate elements of textiles and apparel merchandising.
13. Assess effects of textiles characteristics on design, construction, care, use, and maintenance of products.
14. Originate a fashion advertising project.
15. Using past history, predict future fashion trends.
16. Analyze the main principles of the fashion movement.
17. Classify designers and their specialties.
18. Summarize important aspects of the textile industry.
19. Review marketing strategies for apparel and textiles products.
20. Interpret pricing strategies and store differentiation.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Determine the roles and functions of individuals engaged in textiles and apparel careers.
2. Explore opportunities for employment and entrepreneurial endeavors.
3. Participate in a fashion related entrepreneurial endeavor.
4. Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
5. Utilize local resources to develop a career plan.
6. Explore educational training opportunities that will help prepare them for a successful

career.
7. Understand the components of the job application process.
8. Demonstrate the steps of the job search process.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Apply entrepreneurial skills.
2. Use technology appropriately.
3. Select the appropriate tools, equipment, and procedures for the task.
4. Demonstrate active leadership skills by participation in group activities and projects.
5. Demonstrate positive personal and work ethics.
6. Prioritize, allocate time, prepare and follow schedules to complete a project.
7. Assess skills and distribute work accordingly, evaluate performance and provide feed back toward the accomplishment of personal and team goals.
8. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
9. Use physical resources wisely to accomplish a goal.
10. Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives and evaluate.
11. Assess ethical considerations for merchandising apparel and textiles products.
12. Communicate ideas to justify position. Persuade and convince others, and responsibility challenge existing procedures and policies.
13. Demonstrate competence in working with cultural diversity, aid individual differences, and make cultural adjustments.
14. Select, analyze, information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
15. Locate appropriate print and non-print information using texts and technical resources.
16. Prepare, organize, and effectively deliver a variety of presentations.
17. Incorporate multi-media and audio/visual aids into effective oral presentations.
18. Use listening and viewing skills to analyze, appreciate and evaluate informal and formal performances and presentations.
19. Analyze the methods in which media influences individuals and societies.
20. Reason logically and solve problems.
21. Use appropriate technology.
22. Solve single variable linear equations.
23. Investigate properties of geometric shapes using technology (computers, protractors, rulers, and compasses).
24. Measure length and calculate surface area.
25. Assess factors that contribute to quality customer relations and determine skills and solutions to address customer concerns.

26. Utilize a variety of presentation media such as photography, video, computer, and software for presentations.
27. Organize, process, analyze, and maintain written or computerized records and other forms of information using systematic methods.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Evaluate quality and performance of a variety of systems (e.g., impact of change).

Resources:

Fashion Marketing (Glencoe)
- Student Edition
- Teacher Annotated Edition
- Power Point CD
- Exam View Pro CD

Guest Speakers
Field Trips
Videos and DVDs: History of Fashion

Assessments:

Assessments may include projects, class participation, assignments, tests.

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Housing and Living Environments
Grades 9-12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

Housing and Living Environments introduces students to basic architectural design of interior and exterior living spaces within the home and work environments. Students study the elements and principles of design and explore current and future trends in architectural design that affect housing decisions. Technology aids students in design planning as well as addressing new, innovative technological advances in the areas of textiles and furnishings. In addition, various careers in the industry are emphasized.

Housing and Living Environments is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Homes and Society
Architecture, Landscaping and Home Design
Consumer Choices
Understanding Construction
Understanding Design Principles and Elements
Planning Interiors
Planning Exteriors
Career Exploration

Content Competencies:

Standard #1: Technical and Content Knowledge Skills

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Apply elements and principles of design.
2. Determine the psychological impact that the principles and elements of design have on the individual, their private space and work environment.
3. Determine the effects that the principles and elements of design have on aesthetics and function.
4. Create floor plans.
5. Draw an interior space to scale, using correct architectural symbols and drafting skills.
6. Prepare visual presentations, including legends and keys.
7. Select manufacturers, products, and materials, considering care, maintenance, safety, and environmental issues.
8. Appraise various interior furnishings, appliances, and equipment**,** which provide cost and quality choices for clients.
9. Critique design plans that address client's needs, goals, and resources.
10. Arrange furniture placement with reference to principles of design, traffic flow, activity, and existing architectural features.
11. Examine floor plans for efficiency and safety in areas including, but not limited to zones, traffic patterns, storage, electrical, and mechanical systems.
12. Assess community, family, and financial resources needed to achieve clients' housing and interior goals.
13. Assess human needs, safety, space, and technology as they relate to housing and interior design goals.
14. Research product information, including but not limited to floor coverings, wall coverings, textiles, window treatments, furniture, lighting fixtures and equipment, accessories and building materials.
15. Examine the development of architectural styles throughout history.
16. Compare historical architectural details to current housing and interior design trends.
17. Consider future trends in architectural and furniture design and development.
18. Assess a variety of available resources for housing and interior design.
19. Explore features of furnishings that are characteristic of various historical periods.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore opportunities for employment and entrepreneurial endeavors.
2. Examine education and training requirements and opportunities for career paths in housing, interiors, and furnishings.
3. Determine the roles and functions of individuals engaged in housing, interiors and furnishings careers and provide them with opportunities to explore those careers.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Gather, compile, and analyze data from a variety of sources, and evaluate their relevance and accuracy in making informed housing decisions.
2. Acquire, organize, communicate, process, analyze and evaluate information using a variety of methods.
3. Learn how to prepare budgets.
4. Assess skills and distribute work accordingly, evaluate performance and provide feed back toward the accomplishment of personal and team goals.
5. Recognize and practice various roles required as a member of an effective team.
6. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
7. Demonstrate competence in working with cultural diversity
8. Practice and evaluate positive service skills.
9. Use reference materials and technology to improve writing.
10. Organize writing to ensure coherence, logical progression and support for ideas.
11. Prepare, organize, and effectively deliver a variety of presentations.
12. Incorporate multi-media and audio/visual aids into effective oral presentations.
13. Evaluate the clarity, coherence, effectiveness, and quality of a media presentation.
14. Analyze a speaker's message and delivery style in order to provide useful verbal and nonverbal feedback.
15. Apply effective listening skills in formal and informal situations.
16. Use listening and viewing skills to analyze, appreciate and evaluate informal and formal performances and presentations.
17. Expand vocabulary through reading, listening, and discussing.
18. Analyze the methods in which media influences individuals and societies.
19. Reason logically and solve problems.
20. Estimate, communicate, and model their thinking and understanding.
21. Connect mathematical ideas to the housing industry.
22. Use appropriate technology.
23. Use proportions to convert common measurements (housing).
24. Investigate properties of geometric shapes using technology (computers, protractors, rulers, and compasses).
25. Measure length and calculate surface area.
26. Calculate perimeter and area of two-dimensional shapes.
27. Explore surface area and volume of three-dimensional shapes.
28. Calculate surface area and volume of three-dimensional figures.
29. Utilize a variety of presentation media such as photography, video, computer and software for presentations.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Evaluate quality and performance of a variety of systems considering external factors and uncontrolled variables.
2. Design, manage and analyze systems.

Resources:

Homes and Interiors, Glencoe-McGraw-Hill
- Student Text
- Student Workbook
- Teacher's Annotated Edition
- Color Transparency Package
- Teacher's Classroom Resources
- Teaching and Learning Tools Package
- Application Activities Package

Residential Housing and Interiors, Goodheart-Willcox
- Student Text
- Instructor's Manual
- Student Guide

Housing Decisions, Goodheart-Willcox
- Student Text
- Teacher's Resource Guide
- Student Activity Guide

Assessments:

Assessments may include written tests, class assignments, and class participation.

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Hospitality, Tourism, and Recreation (HTR) I
Grades 10 – 12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

HTR I introduces the student with the scope and economic impact of the hospitality, tourism and recreation industry. Major industry components are explored including food and beverage management, recreation and leisure, meeting and event planning, travel, tourism and lodging.

Hospitality, Tourism, and Recreation (HTR) I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Overview and orientation to the industry
History of tourism
Food and beverage management
Travel, trade and tourism Services
Lodging and accommodations
Adventure and eco tourism
Events and conference management
Attractions management
Careers of the industry
Tourism in Montana

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use technology effectively.

2. Design, produce and market tourism utilizing various types of technology.
3. Discover technological advances related to the tourism industry.
4. Outline the functional areas of departments commonly found in lodging and food service operations and explain their interrelationships.
5. Justify the importance of knowing history and historical facts related to tourism.
6. Examine Montana's tourism regions.
7. Develop a travel plan using a computerized system for domestic or international travel.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Recognize the variety of career opportunities relating to the various segments of the hospitality industry.
2. Explore tourism-related occupational resources.
3. Compile a resume and other work-related information.
4. Plan and prepare for job interviews.
5. Identify personal qualities needed for success on-the-job.
6. Examine education, training requirements and opportunities for career paths in hospitality, tourism and recreation.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Understand the need for good human relationship skills within the tourism industry.
2. Continue to learn, grow and adapt to the changing job market.
3. Interact and work cooperatively and individually to solve problems.
4. Develop an appreciation of the hospitality industry and understand its complexity.
5. Integrate employment procurement procedures into a personal plan of action for employment.
6. Determine the relationship between employees' attitude and actions and customer satisfaction.
7. Develop strategies for resolving complaints.
8. Gather, compile, and analyze data from a variety of sources, and evaluate their relevance and accuracy in making informed decisions in the workplace.
9. Organize, process, analyze, and maintain written or computerized records and other forms of information.
10. Select and analyze information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
11. Practice and evaluate positive service skills (e.g., resolving misunderstandings, consumer

complaints).

12. Apply *Reading Comprehension Strategies*.
13. Use research material for papers and speeches, citing sources.
14. Establish a purpose for reading, such as discovery, interpretation, and enjoyment.
15. Locate appropriate print and non-print information using texts and technical resources.
16. Read to increase knowledge of their own culture, the culture of others, and the common elements across cultures.
17. Connect personal experience to literature.
18. Employ pre-writing, drafting, revision, proofreading and editing strategies of standard written English.
19. Use reference materials and technology to improve writing.
20. Evaluate writing for effectiveness.
21. Prepare, organize, and effectively deliver a variety of presentations.
22. Incorporate multi-media and audio/visual aids into effective presentations.
23. Evaluate the clarity, coherence, effectiveness, and quality of a media presentation.
24. Analyze a speaker's message in order to distinguish between fact and opinion.
25. Apply effective leadership skills in formal and informal situations.
26. Use listening and viewing skills to analyze, appreciate and evaluate informal and formal performances and presentations.
27. Analyze the methods in which media influences individuals and societies.
28. Expand vocabulary through reading, listening, and discussing.
29. Reason logically and solve problems.
30. Connect mathematical ideas within the Hospitality Industry.
31. Use appropriate technology.
32. Express probability of an event as a ratio, decimal and percent.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Demonstrate skills related to promoting and publicizing events.
2. Determine the roles and functions of individuals engaged in hospitality, tourism and recreation careers.
3. Understand complex interrelationships within the travel tourism industry.
4. Evaluate quality and performance of a variety of systems.
5. Practice and analyze principles of system management considering external factors and uncontrolled variables.

Resources:

Hospitality and Tourism; Glencoe McGraw-Hill
Teacher Edition
Power Point CD
Exam View Pro CD
Career Cluster Hospitality and Tourism

Introduction to Hospitality; Prentice Hall
Student Text
Student Workbook

Passport: An Introduction t the Travel and Tourism Industry; Thompson Learning South-Western Publishing

Assessments:

Assessments may include student assignments, written tests, projects, presentations, class participation.

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Hospitality, Tourism, and Recreation (HTR) II
Grades 11 - 12

Units of Credit:

One semester (Elective)

Prerequisites:

Successful completion of HTR I with a grade of "C" or higher, and/or consent of instructor

Course Overview:

HTR II encourages students to collaboratively investigate personalized areas of interest in HTR and develop and build upon their chosen area. Students become aware of and react to issues of the HTR industry.

HRT II is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Market environment
Market information and research
Designing products
Pricing products
Distribution
Promoting hospitality and tourism
Customer and employee relations
Career and employment skills

Content Competencies:

Standard #1: Technical and Content Knowledge Skills

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Select, design, complete and evaluate a project (e.g., manage multiple facets of a project).
2. Analyze interrelationship between the economic system and consumer actions.
3. Use resources wisely to accomplish a goal.
4. Demonstrate procedures applied to safety, security, and environmental issues.

5. Apply concepts of service to meet customer expectations.
6. Demonstrate professional practices and skills for travel related services.
7. Examine management of recreation, leisure, and other programs and events.
8. Understand the marketing process and its elements.
9. Understand the importance of market resources and develop a marketing plan.
10. Understand the various methods to price goods and services.
11. Understand the internal and external factors and other various factors that affect pricing strategies.
12. Demonstrate the process to be effective at selling and serving customers.
13. Analyze the various media used to advertise and promote products.
14. Integrate knowledge, skills, and practices required for careers in hospitality, tourism, and recreation.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Analyze career paths within the hospitality, tourism, and recreation industries.
2. Demonstrate effective methods to secure, maintain, and terminate employment.
3. Experience an internship, job shadow, or work experience related to their career plan.
4. Evaluate career choices and the effect on family and lifestyle.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Apply effective leadership skills in formal and informal situations.
2. Use appropriate technology.
3. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
4. Utilize effective resource management to access, collect, and process data.
5. Evaluate quality and performance of a variety of systems.
6. Allocate time, materials and resources to set and achieve goals.
7. Assess skills and distribute work accordingly, evaluate performance and provide feed back toward the accomplishment of personal and team goals.
8. Recognize and practice various roles required as a member of an effective team.
9. Practice and evaluate the negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
10. Demonstrate competence in working with cultural diversity.
11. Practice and evaluate positive service skills, (e.g., resolving misunderstandings, consumer complaints).

12. Demonstrate positive interpersonal skills including conflict resolution, negotiation, teamwork and leadership.
13. Identify internal and external factors that motivate employees.
14. Describe ethical issues in the hospitality industry.
15. Acquire the skills needed to succeed in the hospitality industry.
16. Apply *Reading Comprehension Strategies* and math strategies..
17. Develop researched material for papers and speeches, citing sources and including visual aids.
18. Establish a purpose for reading, such as discovery, interpretation, and enjoyment.
19. Locate appropriate print and non-print information using texts and technical resources.
20. Distinguish between primary and secondary information to recognize organization and draw conclusions.
21. Read to increase knowledge of their own culture, the culture of others, and the common elements across cultures.
22. Connect personal experience to literature.
23. Adapt subject matter to a variety of styles and formats.
24. Employ pre-writing, drafting, revision, proofreading and editing strategies for commercial publication.
25. Use reference materials and technology to improve writing.
26. Evaluate published models of writing for effectiveness.
27. Prepare, organize, and effectively deliver a variety of presentations.
28. Incorporate multi-media and audio/visual aids into effective oral presentations.
29. Compare the methods in which media genres influence individuals and societies.
30. Evaluate the clarity, coherence, effectiveness, and quality of a media presentation.
31. Analyze a speaker's message to distinguish between fact and opinion.
32. Analyze the methods in which media influences individuals and societies.
33. Use listening and viewing skills to analyze, appreciate and evaluate informal and formal performances and presentations.
33. Expand vocabulary through reading, listening, and discussing.
34. Rely on context to determine meanings of words and phrases.
35. Construct, read and interpret appropriate displays.
36. Reason logically and solve problems.
37. Connect mathematical ideas to the Hospitality Industry.
38. Express probability of an event as a ratio, decimal and percent.
39. Determine when to use ratios, rates, proportions, and scientific notation to solve problems.
40. Demonstrate effective verbal, nonverbal, written, and electronic communication skills.
41. Demonstrate positive interpersonal skills including conflict resolution, negotiation, teamwork and leadership.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Practice and analyze principles of system management considering external factors and uncontrolled variables.
2. Manage and analyze existing systems, including optimizing outputs and making in-process adjustments.
3. Design and evaluate a system composed of subsystems.

Resources:

Hospitality and Tourism; Glencoe McGraw-Hill
Teacher Edition
Power Point CD
Exam View Pro CD
Career Cluster Hospitality and Tourism

Introduction to Hospitality; Prentice Hall
Student Text
Student Workbook

Passport: An Introduction t the Travel and Tourism Industry; Thompson Learning South-Western Publishing

Assessments:

Assessments may include successful procurement and maintenance of employment, positive evaluation from community employer, final presentation.

Meeting Diverse Student Needs:

Students with diverse needs--those with unique abilities and/or disabilities--will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Preparation for Career, Family and Community Connections
Grades 11 - 12 (Hellgate, Seeley Swan)
Grade 12 (Big Sky, Sentinel)

Units of Credit:

One year (Elective)

Prerequisites:

None

Course Overview:

Career, Family and Community Connections is a course designed to help students understand the level of commitment required to manage a career and family. It assists students in developing the skills needed to resolve family and work issues. The extent to which a career impacts family dynamics, meets financial goals and reflects personal values is also explored.

Career, Family and Community Connections is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure and Organization of Work. Other standards considered include the National Standards for Family and Consumer Sciences Education, Montana K-12 Content Standards for Career and Vocational Technical Education, and Career Clusters.

Topics:

Personal identity
- Who am I and how did I get this way
  - The brain and personality

Values, goals, needs and wants
- Goal setting
- Values clarification
- Tolerance
- People with special needs
  - Aging
  - Disabilities
  - Racism

The business side of life
- Resumes
- Letters of applications
- Cover letters

- Interviewing skills
- Interest inventory-future choices

Wellness/stress management
- From where does my stress come
- Techniques to handle stress
- Your health and stress

Addictive behaviors
- Causes
- Symptoms
- Effects on the family
- Help in the community

Communication and conflict resolution
- How we communicate
- Verbal vs. non-verbal
- Constructive quarreling
- How to be a good communicator

Interpersonal relationships
- Kinds and purpose of relationships
- Male and female roles
- The changing family
- Balancing work and home
- Abusive relationships
- Community help and programs
- Marriage/Divorce

Financial literacy
- Checking, savings and credit
- Budgeting and investments
- Housing
- Transportation
- Insurance
- Identity Theft

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Analyze strategies to manage individual, family, career, and community roles and responsibilities.
2. Analyze the reciprocal impact of individual and family participation in community activities.
3. Demonstrate management of individual and family resources, including food, clothing, shelter, health care, recreation, and transportation.
4. Analyze the relationship of the environment to family and consumer resources.

5. Analyze policies that support consumer rights and responsibilities.
6. Evaluate the impact of technology on individual and family resources.
7. Analyze interrelationship between the economic system and consumer actions.
8. Demonstrate management of financial resources to meet the goals of individuals and families across the life span.
9. Demonstrate appreciation for diverse perspectives, needs, and characteristics of individuals and families.
10. Analyze factors related to providing family and community services.
11. Evaluate external support systems that provide services for individuals and families.
12. Analyze principles of human growth and development across the life span.
13. Analyze functions and expectations of various types of relationships.
14. Analyze how personal needs and characteristics impact interpersonal relationships.
15. Demonstrate communication skills that contribute to positive relationships.
16. Evaluate effective conflict prevention and management techniques.
17. Demonstrate teamwork and leadership skills in the family, workplace, and community.
18. Demonstrate standards that guide behavior in interpersonal relationships.
19. Analyze and evaluate the nutritional needs of individuals and families in relation to health and wellness across the life span.
20. Analyze roles and responsibilities of parenting.
21. Evaluate parenting practices that maximize human growth and development.
22. Analyze physical and emotional factors related to the parenting process.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
2. Utilize local resources to develop career plans.
3. Analyze career paths within family and community services.
4. Recognize the interrelationships of family, community, career, and leisure roles.
5. Develop, evaluate, and modify personal career plans.
6. Evaluate career choices and the effect on family and lifestyle.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

1. Demonstrate active leadership skills by participation in group activities and projects.
2. Demonstrate positive personal and work ethic.
3. Demonstrate skills to be a productive citizen.
4. Apply self-esteem building strategies.

5. Demonstrate appreciation for diversity.
6. Practice several methods of effective communication.
7. Implement and evaluate a successful, productive citizenship activity (i.e., community service project).
8. Apply *Reading Comprehension Strategies*.
9. Use research material for papers and speeches, citing sources.
10. Establish a purpose for reading, such as discovery, interpretation, and enjoyment.
11. Locate appropriate print and non-print information using texts and technical resources.
12. Read to increase knowledge of their own culture, the culture of others, and the common elements across cultures.
13. Connect personal experience to literature.
14. Employ pre-writing, drafting, revision, proofreading and editing strategies of standard written English.
15. Use reference materials and technology to improve writing.
16. Prepare, organize, and effectively deliver a variety of presentations.
17. Incorporate multi-media and audio/visual aids into effective oral presentations.
18. Use listening and viewing skills to analyze, appreciate and evaluate informal and formal performances and presentations.
19. Analyze the methods in which media influences individuals and societies.
20. Expand vocabulary through reading, listening, and discussing.
21. Reason logically and solve problems.
22. Connect mathematical ideas to career and family life.
23. Understand professional behaviors, skills, and knowledge required in the area of family and community services.
24. Demonstrate transferable and employability skills in community and workplace settings.

Standard #4: Structure of Organizations and Work

Students gain understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

1. Recognize how personal relationships affect success in the work place and family.
2. Practice and demonstrate academic and technical skills to a workplace setting.
3. Identify possible outcomes and consequences of decisions.
4. Use acceptable industry standard equipment in a school setting.
5. Demonstrate decision-making and problem-solving skills.
6. Recognize complex social systems, organizational systems and technological systems in the work place and family and function effectively within them.
7. Gather, compile, and analyze data from a variety of sources, and evaluate their relevance and accuracy in making informed decisions.
8. Analyze the impact of family as a system on individuals and society.

Resources:

Life in Montana: Family Financial Literacy; Montana State University
FISH
Financial Institutions
Montana State University Extension Service
Creative Living Skills; Glencoe McGraw-Hill
    Student Text
    Teacher's Resource Guide
    Teacher's Wraparound
    Teaching and Learning Resources
    Creative Living Skills Technology
Life on Your Own; Glencoe McGraw-Hill
Consumer Education and Economics; Glencoe McGraw-Hill
    Student Workbook
    Teacher's Resource Guide
    AW TAE
Career and Family Connections Resources

Assessments:

Assessments may include classroom assignments, tests and quizzes, cooperative learning experiences, projects**.**

Meeting Diverse Student Needs:

Students with diverse needs--those with unique abilities and/or disabilities--will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Health Care Foundations I
Grades 10-12

Units of Credit:

One semester

Prerequisites:

Successful completion or concurrent enrollment in Biology I, Integrated Mathematics I, and Health and Physical Education II.

Other recommended/related courses:

Computer Word Processing, Computer and Internet Applications.

Course Overview:

This semester course provides students with an overview of the health care career clusters, introduces them to the National Health Care Standards, and affords them opportunities to refine and apply many of the skills needed to reach each of the National Health Care Foundation Standards. Students in this course benefit from a wide variety of guest speakers, as well as participate in varied job shadowing experiences and field trips to sites that introduce them to all aspects of the health care industry. Students earn their First Aid and CPR certification.

The content of Health Occupations I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Assessments will include written and oral student responses, student-assembled products and presentation, teacher observation, and performance assessment of learning activities and tasks.

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

1. Students acquire and demonstrate current knowledge and skills leading to an occupation.
2. Students will know and understand the precautions needed to avoid accidents and prevent injury.
3. Students will describe infection control practices.
4. Students will become certified in First Aid and Cardiopulmonary Resuscitation (CPR).
    A. Perform CPR for the one-rescuer adult, child and infant and two-rescuer adult.
    B. Perform responsive and unresponsive foreign body airway obstruction (FBAO) for adult, child and infant.
    C. Successfully complete sixteen first-aid and CPR procedures.
5. Students will demonstrate familiarity with common medical terminology.

A. Use structural analysis to create or define terms.
B. Use the common medical terminology for each body system.
C. List common medical abbreviations.

6. Students will demonstrate knowledge of basic anatomy and physiology.
   A. Define elements of human body structure.
   B. Understand directional terms and label body planes and cavities.
   C. Identify the organs and functions of the major systems of the human body.
   D. Compare diseases and disorders of the major systems of the human body.
7. Students will understand the various stages of growth and development experienced by all people.
   A. Identify developmental tasks appropriate to various stages.
   B. Identify health-related issues associated with various stages.
   C. Perform various growth and development procedures.
8. Students will describe the connection between health and nutrition.
   A. Identify the six categories of nutrients and the functions of each.
   B. Successfully perform a nutrition procedure.
9. Students will recognize normal and abnormal values and characteristics of temperature, pulse, respirations, and blood pressure (vital signs) for infants, children, and adults.
   A. Complete various vital sign procedures.
   B. Recognize common terminology and abbreviations used in documenting and discussing vital signs.
10. Students will demonstrate a basic understanding of pharmacology.
   A. Identify origin of drugs.
   B. List mechanisms of action of drugs.
   C. Identify therapeutic classes of drugs.
   D. Discuss advantages and disadvantages of various routes of administration.
   E. Calculate dosages with accuracy and an understanding of the processes that affect how the dosage is determined.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Students will identify the five health care career clusters and provide examples of possible occupations within each.
2. Students will complete a career interest inventory and compare their interests and aptitudes to those suggested for various health care careers.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Students will understand the legal and ethical responsibilities of a health care worker.
   A. Explain how laws, morals, and ethics differ.
   B. Define standards of care and scope of practice.
   C. Describe the various rights and responsibilities of a client.
2. Students will identify basic employability skills.
   A. Students will analyze their strengths and weaknesses and develop strategies for improving their skills.
   B. Students will apply their skills in preparing resumes, cover letters and in interviews.
3. Students will discuss the importance of standards in the health care industry.
4. Students will demonstrate awareness and understanding of the National Health Care Foundation Standards.
5. Students will describe various health care facilities, agencies, and insurance programs.
6. Students will identify major trends and issues in health care.
7. Students will identify the role of OSHA in the health care workplace.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Course Content

1. None.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Health Care Science Technology, Glencoe

Assessments:

A variety of written, oral and performance assessments

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Careers in Health Care IIA: Therapeutic Services
Grades 11 -12

Units of Credit:

One semester

Prerequisites:

Health Care Foundations

Other recommended/related courses:

Human Biology, Exploring Early Childhood Education I and II, Culinary Arts I and II.

Course Overview:

This semester course provides students the opportunity to explore various career possibilities within one of the major health care career clusters: therapeutic services. Students in this course benefit from a wide variety of guest speakers, as well as participate in varied job shadowing experiences and field trips to sites that introduce them to all aspects of the health care industry.

The content of Health Occupations IIA is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Assessments will include written and oral student responses, student-assembled products and presentation, teacher observation, and performance assessment of learning activities and tasks.

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Compare the roles and responsibilities of various jobs in the emergency medical services.
2. Successfully complete three EMS procedures.
3. Summarize the roles and responsibilities of the various unlicensed nursing personnel.
4. Differentiate among the roles of the various licensed nurses.
5. Successfully complete sixteen nursing procedures.
6. Define the educational requirements needed to become a physician, physician's assistant, and medical assistant.
7. Compare the job responsibilities of a physician, physician's assistant, and medical assistant.
8. Describe the licensure, certification and credentialing of the physician office professional.
9. List and define various medical specialties.

10. Differentiate between administrative and clinical duties in a physician's office.
11. Successfully complete five physician's office procedures.
12. Identify the roles and responsibilities of the various personnel in mental health care.
13. Compare the roles and responsibilities of the various licensed mental health providers.
14. Successfully complete three mental health procedures.
15. Distinguish between the roles and responsibilities of the pharmacy aide and the pharmacy technician.
16. Outline the education and responsibilities of the pharmacist.
17. Successfully complete two pharmacy procedures.
18. Define the respiratory system.
19. Summarize the services provided by respiratory care professionals.
20. Successfully complete three respiratory procedures.
21. State the goal of rehabilitation
22. Discuss the roles and responsibilities of people who have careers in physical, occupational and recreational therapy.
23. Discuss the roles and responsibilities of a speech-language pathologist and an audiologist.
24. Successfully complete seven rehabilitation procedures.
25. List the job duties of a sports medicine technician, athletic trainer, personal trainer, strength and conditioning specialist, sports physical therapist, and exercise physiologist.
26. Successfully complete two sports medicine procedures.
27. Describe various careers in alternative medicine (chiropractor, acupuncturist, massage therapist, herbalist).
28. Successfully complete one alternative medicine procedure.
29. Identify the members of the dental team and their responsibilities, education, and credentialing.
30. Successfully complete four dental care procedures.
31. Summarize the roles and responsibilities of the veterinarian, the veterinary technician, and the veterinary assistant.
32. Successfully complete two animal health procedures.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Students will identify the five health care career clusters and provide examples of possible occupations within each.
2. Students will complete a career interest inventory and compare their interests and aptitudes to those suggested for various health care careers.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the

realities of today's workplace.

3a: Skills for Life and Work Content

1. Students will understand the legal and ethical responsibilities of a health care worker.
    A. Explain how laws, morals, and ethics differ.
    B. Define standards of care and scope of practice.
    C. Describe the various rights and responsibilities of a client.
2. Students will identify basic employability skills.
    A. Students will analyze their strengths and weaknesses and develop strategies for improving their skills.
    B. Students will apply their skills in preparing resumes and cover letters and in interviews
3. Students will discuss the importance of standards in the health care industry.
4. Students will demonstrate awareness and understanding of the National Health Care Foundation Standards.
5. Students will describe various health care facilities, agencies, and insurance programs.
6. Students will identify major trends and issues in health care.
7. Students will identify the role of OSHA in the health care workplace.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.

5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Course Content

1. None.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Health Care Science Technology; Glencoe

Assessments:

A variety of written, oral and performance assessments

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Careers in Health Care IIB: Diagnostic Services
Health Information Services and Support Services
Grades 11 -12

Units of Credit:

One semester

Prerequisites:

Health Care Foundations

Other recommended/related courses:

Human Biology, Exploring Early Childhood Education I and II, Culinary Arts I and II.

Course Overview:

This semester course provides students the opportunity to explore various career possibilities within three major health care career clusters: diagnostic services, health information services, and support services. Students in this course benefit from a wide variety of guest speakers, as well as participate in varied job shadowing experiences and field trips to sites that introduce them to all aspects of the health care industry.

The content of Health Occupations IIB is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Assessments will include written and oral student responses, student-assembled products and presentation, teacher observation, and performance assessment of learning activities and tasks.

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Summarize the roles and responsibilities of a phlebotomist, medical laboratory assistant, medical laboratory technician, and medical technologist.
2. List the various places where a medical laboratory worker can be employed.
3. Successfully complete eight medical laboratory procedures.
4. Describe the role and responsibility of an electrocardiography (ECG) technician.
5. Explain the role and responsibilities of a cardiovascular technologist.
6. Contrast the roles and responsibilities of the electroencephalography (EEG) technologist and the electroneurodiagnostic (END) technologist.
7. Successfully complete one medical testing procedure.

8. Summarize two primary roles of the radiologist.
9. Define radiologic technologist and identify three primary roles.
10. Successfully complete one radiologic procedure.
11. Compare the roles and responsibilities of the optometrist and the ophthalmologist.
12. Summarize the role and responsibilities of an orthoptist.
13. Successfully complete three ophthalmic procedures.
14. Identify the education and training required to become an administrative medical assistant, a medical insurance specialist, a medical office manager, and a billing and collection specialist.
15. Successfully complete six medical office procedures.
16. Summarize the key roles and responsibilities of a health care receptionist, medical biller, health unit coordinator, health information technician, medical coder, medical transcriptionist, and privacy officer.
17. Successfully complete two health information procedures.
18. Discuss the roles and responsibilities of a biomedical equipment technician (BMET).
19. Compare the roles and responsibilities of the biomedical engineer and the industrial hygienist.
20. Successfully complete one procedure in biomedical technology.
21. Compare the roles and responsibilities of a central supply assistant and a central supply technician.
22. Summarize the roles and responsibilities of a supply supervisor/coordinator.
23. Successfully complete six central supply procedures.
24. Summarize the key roles and responsibilities of a dietetic aide, certified dietary manager, dietetic technician, a registered dietician.
25. Compare two or more types of therapeutic diets.
26. Successfully complete three procedures in Dietetics.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Students will identify the five health care career clusters and provide examples of possible occupations within each.
2. Students will complete a career interest inventory and compare their interests and aptitudes to those suggested for various health care careers.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Students will understand the legal and ethical responsibilities of a health care worker.
    A. Explain how laws, morals, and ethics differ.
    B. Define standards of care and scope of practice.
    C. Describe the various rights and responsibilities of a client.
2. Students will identify basic employability skills.
    A. Students will analyze their strengths and weaknesses and develop strategies for improving their skills.
    B. Students will apply their skills in preparing resumes and cover letters and in interviews.
3. Students will discuss the importance of standards in the health care industry.
4. Students will demonstrate awareness and understanding of the National Health Care Foundation Standards.
5. Students will describe various health care facilities, agencies, and insurance programs.
6. Students will identify major trends and issues in health care.
7. Students will identify the role of OSHA in the health care workplace.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace

information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Course Content

1. None.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Health Care Science Technology, Glencoe

Assessments:

A variety of written, oral and performance assessments

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners

consistent with their needs. For methodology, please see Appendix I.

3D Modeling and Animation
Grades 9 - 12

Units of Credit:

One year (Elective)

Prerequisites:

Drafting I

Course Overview:

This course provides students an overview of 3D graphics and design. The content of 3D Modeling and Animation is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Current professional standards are also applied. Students develop and use a variety of skills including assessing, organizing, problem solving, and analyzing in the application of three-dimensional drafting, design, and animation techniques. Students engage in a variety of learning activities including lecture and note taking, research, individual projects, demonstrations, and performance tasks. Students are assessed through observing and measuring performance on tests, quizzes, assigned tasks and projects and by the quality of work produced.

This class will focus on the fundamentals of 3D modeling and animation. Students will acquire skills in solving advanced geometry and movement problems. Fundamentals will be covered through instruction, class discussion, Internet research, text/workbook, and hands on projects. The class will culminate with an instructor-approved individual student project. The course is designed to provide a working knowledge of interpreting and creating 3-dimensional models and animated movement.

Topics:

3D Modeling: Spline Patching, Box Modeling, Subpatching and Point Editing
Character Modeling, Rigging and Posing
Introduction to Inverse and Forward Kinematics, Hierarchies
Texturing Properties (Transparencies, Opacities, Diffusion, Luminosity and Translucency)
Image Mapping, UV, Gradient and Procedural Textures
Lighting Basic And Light Properties
3 Point Lighting and Advanced Lighting Plans
Caustics, Reflections, Specularity Mapping and Refractions
Gobos, Shadows, and Projections
Volumetrics and Dynamics
Motion Path Study

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use computers, telecommunications and other tools of technology for research, gathering ideas and representing information or ideas accurately and appropriately.
2. Design and create media projects that successfully communicate.
3. Develop and present projects utilizing multi-media equipment.
4. Develop an understanding of the cultural, social, economic, and political effects of technology.
5. Develop an understanding of the characteristics and scope of technology.
6. Create designs using computer software and hardware as tools.
7. Demonstrate knowledge of new and emerging technologies that may affect design and drafting.
8. Demonstrate CAD modeling and animation skills.
9. Use math, science, and language arts skills in developing reports and solving drafting problems.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Research and analyze information related to CAD or advanced graphics design careers.
2. Demonstrate skills and knowledge of technological equipment, materials, and processes used in design-related careers.
3. Research and explore continuing education opportunities.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Know about various careers.
2. Use and apply computer aided design processes.
3. Participate in a job shadowing experience.
4. Present and produce drawings in a timely manner.
5. Create developmental sketches used in the design process.

6. Practice accepted standards, symbols, and conventions to create and present 3D models from 2D or 3D design drawings.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
3. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen, interpret and recall details and instructions.
2. Respond appropriately during conversations.
3. Locate and demonstrate written technical information.
4. Uses proper technical writing style.
5. Apply computation skills and solve problems.
6. Use knowledge of geometry to solve problems.
7. Apply procedures of measurement.
8. Apply mathematical reasoning to solve problems.
9. Use formulas to solve problems.
10. Employ graphs, tables, and maps in making arguments and drawing conclusions.
11. Make and use appropriate symbols, pictures and diagrams, scaled drawings and models to simply real life situations and solve problems.
12. Use computers to organize data generate models and do research for problem solving.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Course Content

1. Use tools, materials, and equipment commonly employed in the field of CAD design efficiently and safely.
2. Participate in group or team activities to produce an original, complex multimedia presentation.
3. Form aesthetic judgments, using appropriate vocabulary and background knowledge to critique their own work and the work of others, and to support their perception of work in the arts, language and literature.
4. Critique their own work and others work in progress, both individually and in groups, to improve upon intent.

Resources:

Inside Lightwave 8; Alban
Lightwave Quickstart; Albee
Lightwave 8 3d Model and Animation Software; Newtek
Photoshop Software; Adobe
NewTek.com and other internet resources

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Applied Technology I
Grades 9-12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

In this course, students gain knowledge and skills in the application, design, production, and assessment of products, services, and systems. Knowledge and skills in the proper application of technology, the design of technology, the efficient production of technology, and the assessment of the effects of technology prepare students for success in the modern world. The study of technology allows students to reinforce, apply, and transfer their academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. In addition to their general academic and technical knowledge and skills, students gain an understanding of career opportunities and employment requirements inherent in technology. Students are assessed by observing and measuring performance on tests, quizzes, assigned tasks and projects and by the quality of work produced.

The content of Exploring Technology I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Introduction to Technology
Communication Technology
Manufacturing Technology
Construction Technology
Transportation Technology

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use tools, machines, and equipment to manufacture or produce solutions to problems.

2. Use the computer as a problem-solving and design tool.
3. Demonstrate knowledge of new and emerging technologies that may affect technology.
4. Describe how technology has affected individuals, societies, cultures, economics, and environment.
5. Use math, science, and language arts skills in developing solutions to problems.
6. Use prior knowledge to formulate new ideas for problem-solving.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Research information related to technological continuing education and career decisions.
2. Demonstrate skills and knowledge of current equipment, materials, and processes used in related careers.
3. Recognize career opportunities for a person with technology skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Use and apply the technological design processes.
2. Apply teamwork and cooperative learning abilities.
3. Develop organizational and time management skills as part of the problem-solving process.
4. Incorporate critical thinking and assessment skills.
5. Demonstrate basic understanding of historical technological advancements by interpreting and applying to problems.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.

4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Use instruments to collect and analyze data.
2. Apply communication skills through presentations, reports and demonstrations. Read, write and present technical material to class.
3. Use Cartesian co-ordinate system to plot data, create and design a manufacturing project.
4. Use basic math skills to create and follow project budgets.
5. Find locations using latitude/longitude elevation data.
6. Use tools to take measurements and convert imperial / metric measurement units.
7. Use formulas to calculate the design efficiency of various projects.
8. Research the Internet for technical data relevant to projects.
9. Read, apply and critically analyze and apply specific rules for each project.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or

application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Course Content

1. Use tools, materials, and equipment commonly employed in industry in a safe manner.
2. Assess product quality utilizing quality control management processes.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).

Resources:

Internet
Teacher created documents

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Applied Technology II
Grades 10-12

Units of Credit:

One year (Elective)

Prerequisites:

Applied Technology I

Course Overview:

In this course, students build upon knowledge and skills gained in Applied Technology I in the application, design, production, and assessment of products, services, and systems. Knowledge and skills in the proper application of technology, the design of technology, the efficient production of technology, and the assessment of the effects of technology prepare students for success in the modern world. The study of technology allows students to reinforce, apply, and transfer their academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. In addition to their general academic and technical knowledge and skills, students gain an understanding of career opportunities and employment requirements inherent in technology. Students are assessed through observation, performance on tests, quizzes, assigned tasks and projects and by the quality of work produced.

The content of Applied Technology II is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Communication Technology
Manufacturing Technology
Construction Technology
Power, Transportation, and Energy Technology

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use tools, machines, and equipment to manufacture or produce solutions to problems.
2. Use the computer as a problem-solving and design tool.
3. Demonstrate knowledge of new and emerging technologies that may affect technology.

4. Describe how technology has affected individuals, societies, cultures, economics, and environment.
5. Use math, science, and language arts skills in developing solutions to problems.
6. Use prior knowledge to formulate new ideas for problem-solving.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Research information related to technological continuing education and career decisions.
2. Demonstrate skills and knowledge of current equipment, materials, and processes used in related careers.
3. Recognize career opportunities for a person with technology skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Use and apply the technological design processes.
2. Apply teamwork and cooperative learning abilities.
3. Develop organizational and time management skills as part of the problem-solving process.
4. Incorporate critical thinking and assessment skills.
5. Demonstrate basic understanding of historical technological advancements by interpreting and applying to problems.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Use instruments to collect and analyze data.
2. Apply communication skills through presentations, reports and demonstrations. Students read, write and present technical material to class.
3. Use Cartesian co-ordinate system to plot data, create and design a manufacturing project.
4. Use basic math skills to create and follow project budgets.
5. Use tools to take measurements and convert imperial / metric measurement units.
6. Use formulas to calculate the design efficiency of various projects.
7. Research the Internet for technical data relevant to projects.
8. Read, apply and critically analyze and apply specific rules for each project.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content

1. Use tools, materials, and equipment commonly employed in industry in a safe manner.
2. Assess product quality utilizing quality control management processes.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).

Resources:

Internet
Teacher created documents

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Building Trades I
Grades 11-12

Units of Credit:

One year (Elective)

Prerequisites:

Wood Technology I and II
Drafting I
Drafting II (or consent of instructor)

Course Overview:

Building Trades I emphasizes a combination of advanced machine operations, millwork, cabinetry, and basic residential construction methodology. Students improve their skills related to the aforementioned areas of study. The course promotes strong work ethics, communication skills, problem solving, teamwork, and continued skill development in the construction trades. This course prepares students for Building Trades II and/or entry-level construction positions.

The content of Building Trades I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Current industry standards are introduced. Students develop and use a variety of skills including safe work habits, organization, problem solving, and practical application of construction techniques. Students engage in a variety of learning activities including lecture, note taking, research, individual projects, demonstrations, and performance tasks. Student achievement is measured in a variety of ways. Written, oral, and performance tests are administered. In addition, student projects and behavior are evaluated using criteria specified by teacher/industry standards.

Topics:

Measurement Systems
In-Depth Use of Portable Power Tools
Personal Safety
Advanced Design and Planning
Plan and Blueprint Interpretation
Cabinets and Countertops
Interior Finish Work
Building Codes, Regulations, and Zoning
Site Work

Foundation Systems
Floor Systems
Wall Systems
Roof Systems
Enclosing the Structure

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Set up tools, machines, and equipment to manufacture or produce solutions to problems.
2. Demonstrate application of appropriate woodworking/construction techniques based on knowledge of modern equipment and newly developed woodworking/construction processes.
3. Develop, read and interpret project plans and blueprints.
4. Apply critical-thinking strategies to the analysis and evaluation of project design and fabrication activities.
5. Use cross-curricular resources and knowledge to develop solutions to problems.
6. Utilize knowledge and resources to create innovative solutions and ideas.
7. Utilize correct techniques for proper handling of hazardous materials.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Use information related to woods technologies/building trades as it applies to continuing education, vocational, avocational, and career decisions.
2. Acquire skills and knowledge related to industry, materials, and processes in related careers.
3. Observe and summarize the career opportunities for a person with woodworking/construction skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Apply advanced woodworking/construction skills in a working environment.

2. Apply teamwork and cooperative learning skills.
3. Develop and justify organizational and time management skills as part of the problem-solving process.
4. Evaluate and apply knowledge of the concepts and skills related to health and safety in the workplace.
5. Produce work of the highest quality possible.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrate understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Solve linear equations.
6. Use basic operations with real numbers.
7. Use fractions, decimals, and percents.
8. Use ratios and proportions.
9. Apply coordinate geometry.
10. Apply vocabulary and formulas of two-dimensional geometric shapes.
11. Use vocabulary and formulas of three-dimensional geometric shapes.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content

1. Build upon the principles of effective group participation and leadership related to workplace hierarchy.
2. Use tools, materials, and equipment common to the field of woodworking in a safe manner.
3. Select raw materials based on product application.
4. Recognize and produce acceptable finished product quality.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g. impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.

Resources:

Modern Cabinetmaking, Goodheart-Wilcox
Cabinetmaking and Millwork, Glencoe Publishing
Carpentry, Delmar Publishers
Carpentry and Building Construction, Glencoe/McGraw Hill
Construction Technology, Delmar Publishing

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Building Trades II
Grades 11-12

Units of Credit:

One year (Elective)

Prerequisites:

Wood Technology III/Building Trades I

Course Overview:

Building Trades II emphasizes a combination of advanced machine operations and advanced residential construction methodology. Students improve their skills related to the aforementioned areas of study. The course emphasizes work ethics, communication skills, problem solving, teamwork, and continued skill development in the construction trades. This course prepares students for entry-level construction positions.

The content of Building Trades II is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Current industry standards are incorporated and stressed to meet current building codes and regulations relevant to the industry. Students develop and use a variety of skills including safe work habits, organization, problem solving, and practical application of construction techniques. Students engage in a variety of learning activities including lecture, note taking, research, on-site construction, demonstrations, and performance tasks. Student achievement is measured in a variety of ways. Written, oral, and performance tests are administered. In addition, student performance and work ethics are evaluated using criteria specified by teacher/industry standards.

Topics:

Measurement Systems
In-Depth Use of Portable Power Tools
Personal Safety
Advanced Design and Planning
Plan and Blueprint Interpretation
Building Codes, Regulations, Zoning and Contracts
Site Work and Preparation
Foundation Systems
Floor Systems
Wall Systems
Roof Systems

Enclosing the Structure
Plumbing
Electrical
Heating
Air Conditioning
Interior Finishing
Exterior Finishing
Landscaping

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Set up equipment to manufacture or produce solutions to construction problems.
2. Demonstrate application of appropriate construction techniques based on knowledge of modern equipment and newly developed advanced construction processes.
3. Develop, read and interpret blueprints.
4. Apply critical-thinking strategies to the analysis and evaluation of building design and fabrication activities.
5. Use cross-curricular resources and knowledge to develop solutions to problems.
6. Utilize knowledge and resources to create innovative solutions and ideas.
7. Utilize correct techniques for proper handling of hazardous materials.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Use information related to woods building trades as it applies to continuing education, vocational, avocational, and career decisions.
2. Acquire skills and knowledge related to industry, materials, and processes in related careers.
3. Observe and summarize the career opportunities for a person with construction skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Apply advanced construction skills in a working environment.
2. Apply teamwork and cooperative learning skills.
3. Develop and justify organizational and time management skills as part of the problem-solving process.
4. Evaluate and apply knowledge of the concepts and skills related to health and safety in the workplace.
5. Produce work of the highest quality possible.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrate understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Solve linear equations.
6. Use basic operations with real numbers.
7. Use fractions, decimals, and percents.
8. Use ratios and proportions.
9. Apply coordinate geometry.
10. Apply vocabulary and formulas of two-dimensional geometric shapes.
11. Use vocabulary and formulas of three-dimensional geometric shapes.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Content Competencies

1. Build upon the principles of group participation and leadership related to workplace hierarchy.
2. Use tools, materials, and equipment common to the field of building trades in a safe manner.
3. Select raw materials based on product application.
4. Recognize and produce acceptable finished product quality.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g. impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.

Resources:

Modern Cabinetmaking, Goodheart-Wilcox
Cabinetmaking and Millwork, Glencoe Publishing
Carpentry, American Technical
Carpentry, Delmar Publishers
Carpentry and Building Construction, Glencoe/McGraw Hill
Construction Technology, Delmar Publishing

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

CCNA 1: Networking Basics
Grade: 9-12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview

CCNA 1: Networking Basics is the first of four courses leading to the Cisco Certified Network Associate (CCNA) designation. CCNA 1 introduces Cisco Networking Academy Program students to the networking field. In addition, the course provides instruction and training in the proper care, maintenance, and use of networking software, tools, and equipment. This course will consist of classroom instruction and assignments and hands-on activities. The technology issues of computer functions and keeping computers and networks functioning is addressed by the curriculum of this course.

The content of " CCNA 1: Networking Basics" is arranged around the four Missoula County Curriculum Consortium/MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Introduction to Networking
Networking Fundamentals
Networking Media
Cable Testing
Cabling LANs and WANs
Ethernet Fundamentals
Ethernet Technologies
Ethernet Switching
TCP/IP Protocol Suite and IP Addressing
Routing Fundamentals and Subnets
TCP/IP Transport and Application Layer

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Identify the key components of a computer and computer network system
2. Compose a plan for proper computer network maintenance.
3. Compose a plan for proper network tech plan..
4. Assemble a computer network from individual component parts.
5. Diagnose and remedy the problems in a non-working computer network.
6. Install software and test networks.

Standard #2: Career and Life Planning

Students develop self-knowledge; explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Summarize the career opportunities for a person with Cisco network skills.
2. Interview a person working in a IT network related job.
3. Write a report on a IT network occupation of choice.

Standard #3: Skills for Life and Work

3a: Skills for Life and Work Content

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare work order pricing estimates, make forecasts, keep records, make adjustments to meet objectives, and evaluate actual cost of repair records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.

2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Use various techniques to approximate solutions, determine the reasonableness of answers, and justify the results.
2. Use measurement tools and units appropriately and recognize limitations in the precision of the measurement tools.
3. Derive and use formulas for area, surface area, and volume of many types of figures.
4. Analyze how matter is affected by changes in temperature, pressure and volume
5. Use mathematics to describe the work and power in a system.
6. Use mathematics to describe and predict electrical and magnetic activity (current, resistance, voltage)
7. Compare and contrast how conductors, semiconductors, and superconductors work and describe their present and potential uses.
8. Demonstrate an understanding that energy can be found in chemical bonds and can be used when it is released from those bonds.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Content Competencies

1. Apply the skills of effective group participation and leadership related to citizenship and career preparation.

2. Develop effective oral and written communication skills with individuals from varied cultures, including fellow workers, management, and customers.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g. impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.

Resources:

Cisco Certified text books.
Software to enable the instructor to teach to Cisco Certification.
Factory Cisco and aftermarket network orientated training films.

Assessments:
Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, computerized testing and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Drafting I
Grades 9-12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

This course offers students an opportunity to learn the fundamentals of mechanical drawing and design. The content of Drafting I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Current industry standards are introduced. Students develop and use a variety of skills including assessing, organizing, problem solving, and analyzing in the application of drafting techniques. Students engage in a variety of learning activities including lecture and note taking, research, individual projects, demonstrations, and performance tasks. Students are assessed through observation, performance on tests, quizzes, assigned tasks and projects and by the quality of work produced.

Topics:

Introduction to Drafting
Freehand Sketching
Lettering
Use and Care of Instruments and Equipment
Geometry for Technical Drawing
Multi-view Drawing
Pictorial Drawing
Dimensioning
Sectional Views
Working Drawings
Introducing CAD

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Demonstrate competency in using traditional board drafting tools.
2. Use computer software and hardware as a drafting tool to produce technical drawings.
3. Apply the principles of size description related to standard dimensioning.
4. Demonstrate knowledge of new and emerging technologies that may affect mechanical/architectural drafting.
5. Use math, science, and language arts skills in developing reports and solving drafting problems.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Research information related to drafting/career decisions.
2. Demonstrate skills and knowledge of current equipment, materials, and processes used in drafting related careers.
3. Summarize the career opportunities for a person with drafting/design skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Apply accepted lettering practices and styles used in manufacturing graphics.
2. Use sketching techniques to develop drawing format and graphic problem solving.
3. Detail objects accurately through the principles of shape and size description.
4. Practice accepted standards, symbols, and conventions.
5. Develop computer 3D models, and pictorials drawings.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, allocate time, and prepare and follow schedules.

2. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
3. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others.

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen, interpret, and recall details and instructions.
2. Respond appropriately during conversations.
3. Locate and demonstrate written technical information.
4. Use proper technical drawing and writing.
5. Apply computation skills to solve problems.
6. Use knowledge of geometry to solve problems.
7. Apply measurement skills to solve problems.
8. Apply mathematical reasoning skills to solve problems.
9. Use formulas to solve problems.
10. Employ graphs, tables, maps and illustrations in making arguments and drawing conclusions (Science).
11. Make and use appropriate symbols, pictures, diagrams, scaled drawings and models to simplify real life situations and solve problems (Science).
12. Use computers to organize data generated models and to do research for problem solving. (Science).

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content

1. Produce drawings related to manufacturing.
2. Use tools, materials, and equipment commonly employed in mechanical drafting efficiently and safely.

Resources:

Basic Technical Drawing, Glencoe-McGraw Hill
Exploring Drafting, John Walker
Rhino 3D Modeling software and electronic document
AutoDesk AutoCad software and texts

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Drafting II—Architectural Design
Grades 10-12

Units of Credit:

One year (Elective)

Prerequisites:

Drafting I

Course Overview:

This course offers students an opportunity to learn the fundamentals of architectural design. The content of Drafting II—Architectural Design is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Students develop and use a variety of skills including assessing, organizing, problem solving, and analyzing in the application of drafting techniques. Students engage in a variety of learning activities including lecture and note taking, research, individual projects, demonstrations, and performance tasks. This course provides experience in area planning, basic architectural plans, technical details, architectural support services, and creative ideas on basic principles and techniques of mechanical drawing. Students are assessed by observing and measuring performance on tests, quizzes, assigned tasks and projects and by the quality of work produced.

Topics:

Introduction to Architecture
Architectural Drafting Fundamentals
Basic Area Design
Basic Architectural Drawings
Presentation Methods
Foundations and Construction Systems
Framing Systems
Electrical and Mechanical Design
Site Design and Drawings
Checking Standards and Building Codes
Careers in Architecture and Related Fields
Building Materials
Regional Building Topics
Architectural History

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use computer software and hardware as a drafting tool to produce architectural drawings.
2. Demonstrate knowledge of new and emerging technologies that may affect architectural drafting and design.
3. Use math, science, and language arts skills in developing reports and solving drafting problems.
4. Students apply technological activities and knowledge to information in order to broaden their understanding.
5. Produce drawings related to residential design.
6. Use tools, materials, and equipment commonly employed in the field of architectural design efficiently and safely.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Research information related to architectural continuing education and career decisions.
2. Demonstrate skills and knowledge of current equipment, materials, and processes used in related careers.
3. Summarize the career opportunities for a person with architectural design skills.
4. Explore an architectural related job or career.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1.
2. Use and apply the architectural design process.
3. Demonstrate the ability to use codes, specifications, symbols, and conventions.
4. Apply the principles of design to architecture.
5. Apply accepted lettering practices and styles used in architectural graphics.
6. Develop computer 3D models, and pictorials drawings

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, allocate time, and prepare and follow schedules.
2. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
3. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Communicate ideas to justify position, persuade and convince others.
3. Practice and evaluate processes including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen, interpret, and recall details and instructions.
2. Respond appropriately during conversations.
3. Locate and demonstrate written technical information.
4. Use proper technical drawing and writing.
5. Apply computation skills to solve problems.
6. Use knowledge of geometry to solve problems.
7. Apply measurement skills to solve problems.
8. Apply mathematical reasoning skills to solve problems.
9. Use formulas to solve problems.
10. Employ graphs, tables, maps and illustrations in making arguments and drawing conclusions (Science).

11. Make and use appropriate symbols, pictures, diagrams, scaled drawings and models to simplify real life situations and solve problems (Science).
12. Use computers to organize data generated models and to do research for problem solving. (Science).

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Content Competencies

1. None.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g. impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.

Resources:

AutoDesk AutoCad Software
AutoCAD 2005; Sybex
Problem Solving in AutoCAD, 2005; Tickoo
Architecture Residential Drawing and Design; Goodheart-Willcox
Architectural Drawing and Design; Glencoe-McGraw Hill
http://www.we-r-here.com
Architectural Graphics Standards

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Drafting III
Grades 10-12

Units of Credit:

One year (Elective)

Prerequisites:

Drafting I and Drafting II

Course Overview:

This course offers students an opportunity to learn more complex drafting design and engineering concepts. The content of Drafting III is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Current industry standards are also applied. Students develop and use a variety of skills including assessing, organizing, problem solving, and analyzing in the application of drafting and design techniques. Students engage in a variety of learning activities including lecture and note taking, research, individual projects, demonstrations, and performance tasks. Students are assessed by observation, performance on tests, quizzes, assigned tasks and projects and by the quality of work produced.

Topics:

Advanced Sketching and Lettering
ANSI Graphics Standards
Design Processes
Auxiliary Views
Fasteners and Standard Parts
Technical Illustration and Pictorial Drawing
Surface Developments and Intersections
Sectional Drawings
Working and Assembly Drawings
Geometric Tolerance and Dimensioning
Cams and Gears
Welding Drafting
Intermediate and Advanced CAD
3D Computer Modeling

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use extensive computer AutoCad and Rhino software and hardware as a drafting/ modeling tool to produce a variety of engineering drawings.
2. Apply the principles of size description related to geometric tolerance and precision dimensioning.
3. Use reproduction/media equipment.
4. Demonstrate knowledge of new and emerging technologies that may affect engineering/design drafting.
5. Define and simulate advanced modeling CAD/CAM techniques.
6. Use math, science, and language arts skills in developing reports and solving drafting problems and making presentations.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Research information related to engineering and design career decisions.
2. Demonstrate skills and knowledge of current equipment, materials, and processes used in engineering and design-related careers.
3. Analyze the career opportunities for a person with engineering/design skills.
4. Interview a person working in drafting/design related job or write a report on a drafting/design occupation of choice.
5. Research and explore continuing education opportunities.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Use and apply the engineering design processes.
2. Utilize industry standards (MILSPEC, ISO, ANSI, SAE, etc.).
3. Apply accepted lettering practices and styles.
4. Create design sketches in the development of engineering drawings.
5. Practice accepted standards, symbols, and conventions.
6. Develop computer 3D models, and pictorials drawings

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, allocate time, and prepare and follow schedules.
2. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
3. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Practice and evaluate processes including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
4. Practice and evaluate positive service skills.

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen, interpret, and recall details and instructions.
2. Respond appropriately during conversations.
3. Locate and demonstrate written technical information.
4. Use proper technical drawing and writing.
5. Apply computation skills to solve problems.
6. Use knowledge of geometry to solve problems.
7. Apply measurement skills to solve problems.
8. Apply mathematical reasoning skills to solve problems.
9. Use formulas to solve problems.

10. Employ graphs, tables, maps and illustrations in making arguments and drawing conclusions (Science).
11. Make and use appropriate symbols, pictures, diagrams, scaled drawings and models to simplify real life situations and solve problems (Science).
12. Use computers to organize data generated models and to do research for problem solving. (Science).

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content

1. Produce drawings related to engineering design.
2. Use tools, materials, and equipment commonly employed in the field of engineering design efficiently and safely.
3. Participate in group or team activities.
4. Produce extensive AutoCAD drawings and 3d models.

Resources:
Engineering Drawing and Graphic Technology; Glencoe-McGraw-Hill
Mechanical Drawing; Glencoe-McGraw-Hill
Rhino, NURBS 3D Modeling Software and electronic documents
Hands On AutoCAD LT; Timothy Looney
Technical Drawing; Prentice-Hall
AutoDesk AutoCAD Software

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Drafting IV
Grades 11-12

Units of Credit:

One year (Elective)

Prerequisites:

Drafting I and II or III

Course Overview:

This is an independent study course providing students an in-depth analysis in either engineering or architectural design. The content of Drafting IV is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Current professional standards are also applied. Students develop and use a variety of skills including assessing, organizing, problem solving, and analyzing in the application of drafting , design, and CAD techniques. Students engage in a variety of learning activities including lecture and note taking, research, individual projects, demonstrations, and performance tasks. Students are assessed through observation, performance on tests, quizzes, assigned tasks and projects and by the quality of work produced.

Topics:

Topics may be developed through mutual agreement between the teacher and the student in the pursuit of independent study including, but not limited to:

Descriptive Geometry
Advanced Design Processes
Residential Design
Commercial Architectural Design
Community Design
Civil engineering
Naval Architecture
Electrical Engineering
H.V.A.C.
Computer Animation
Facilities Management
Virtual and Physical Modeling
Advanced CAD Techniques

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Create designs using computer software and hardware as tools.
2. Develop and present projects utilizing multi-media equipment.
3. Demonstrate knowledge of new and emerging technologies that may affect design drafting.
4. Illustrate and demonstrate CAD modeling and animation.
5. Use math, science, and language arts skills in developing reports and solving drafting problems.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Research and analyze information related to CAD or advanced graphics design careers.
2. Demonstrate skills and knowledge of technological equipment, materials, and processes used in design-related careers.
3. Research and explore continuing education opportunities.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Use and apply computer aided design processes.
2. Participate in a job shadowing experience.
3. Present and produce drawings in a timely manner.
4. Create developmental sketches used in the design process.
5. Practice accepted standards, symbols, and conventions.
6. Create and present 3D models from 2D or 3D design drawings.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others.
4. Practice and evaluate processes including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills.

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen, interpret, and recall details and instructions.
2. Respond appropriately during conversations.
3. Locate and demonstrate written technical information.
4. Use proper technical drawing and writing.
5. Apply computation skills to solve problems.
6. Use knowledge of geometry to solve problems.
7. Apply measurement skills to solve problems.
8. Apply mathematical reasoning skills to solve problems.
9. Use formulas to solve problems.
10. Employ graphs, tables, maps and illustrations in making arguments and drawing conclusions (Science).

11. Make and use appropriate symbols, pictures, diagrams, scaled drawings and models to simplify real life situations and solve problems (Science).
12. Use computers to organize data generated models and to do research for problem solving. (Science).

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content

1. Use tools, materials, and equipment commonly employed in the field of CAD design efficiently and safely.
2. Use tools, materials and equipment commonly employed in board drafting for advanced drawings.
3. Participate in group or team activities to produce an original, complex multimedia presentation.

Resources:
Engineering Drawing and Graphic Technology; Glencoe-McGraw-Hill
Mechanical Drawing; Glencoe-McGraw-Hill
Rhino, NURBS 3D Modeling Software and electronic documents
Hands On AutoCAD L; Timothy Looney
Technical Drawing; Prentice-Hall
AutoDesk AutoCAD Software
Architectural Graphics Standards or related texts and catalogs

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Home Technology Integrator
Grades 10-12

Units of Credit:

One year (Elective)

Prerequisites:

None

Course Overview:

This course helps students comprehend the basic principles of the industrial standards and competencies required for the installation, integration and troubleshooting of entertainment, comfort, security, and networking subsystems used in an automated home.

The modules provide an introduction to home integration that includes an overview of residential subsystems, structured wiring, system integration, and an introduction to networking, safety, and troubleshooting.

The content of Home Technology Integrator is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Students learn from a variety of resources: textbooks, workbooks, computers, simulations, guest speakers, field trips, group projects, note taking, and instructional media materials.

Outcome-based performance indicators provide an accountability system for each subject area. Measures of learning and competency gains, including student progress in the achievement of basic and academic skills, are evaluated in a variety of ways.

Topics

HTI Design
Safety and design of home technology integration
Basic components of HTI systems
Designing and installing HTI systems
Home technology network basics
Home network design and configuration
Planning a home network
Installing central components and low-voltage wiring
High voltage electrical safety standards
Calculating AC load requirements
Planning and installing new circuits
Circuit protection
High-voltage wiring

Video and audio fundamentals and components
Analog and digital transmission
Audio recording and broadcasting
Television recording and broadcasting
Audio and video service sources
Video storage files and formats
Connected audio/video system design
Installation and setup of audio and visual systems
Configuration and settings for external audio and video
Configuration for internal video/audio

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Develop an awareness of the value and importance of office technology as time-saving devices in business.
2. Demonstrate the ability to use technology in completing an assigned task in a timely fashion.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore related accounting careers.
2. Explore career opportunities in business-related fields.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Develop the ability to analyze and correct errors.
2. Adapt problem-solving and reasoning skills to daily work.
3. Perform accounting procedures using computer and/or manual methods for keeping financial records for an individual proprietorship, a partnership, and a corporation for an entire accounting cycle.
4. Analyze monetary transactions that affect daily life.

5. Evaluate and assess accounting records.
6. Display appropriate and ethical work behaviors.

3b: Workplace Competencies Standards

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Develop proficiency in touch addition and touch subtraction.

2. Develop the ability to analyze and correct errors.
3. Apply mathematical concepts (add, subtract, multiply, divide, fractions) within the context of the accounting equation.
4. Demonstrate the ability to compute a given percent of a number and the percent of increase or decrease.
5. Compute individual extensions and accumulate them.
6. Compute discounts (including chain discounts) and determine the net amount of the bill.
7. Develop critical thinking skills to make informed decisions as consumers and producers of information.
8. Write clearly and effectively for the purpose of communicating financial information.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Course Content:

1. Compare and contrast organizational structure of a proprietorship, partnership, and corporation.
2. Compare and contrast financial records for a proprietorship, partnership, and corporation.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

Supplementary, consumable materials
Varied software and hardware.

Assessments:

Assessments may include daily assignments and quizzes, teacher observations, performance/written tests, student projects/simulations, writing assignments, and lab performance.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Independent Study--Career and Technology Education
Grades 12

Units of Credit:

One semester or one year (Elective)

Prerequisites:

Consent of Instructor; two to three career and technology education courses in a coherent sequence

Course Overview:

Rapid advances in technology, business, science, trades and industry have created new career opportunities and demands. Career and Technology Education provides the knowledge, skills and technologies required for employment in several broad systems. Students need to develop knowledge of the concepts and skills related to individual career concentrations in order to apply them to personal/career development. Career and Technology Education depends on and supports the integration of academic, career and technology knowledge and skills. To prepare students for success, students must have opportunities to reinforce, apply and transfer their knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepares students for success.

In collaboration with the teacher and a related professional mentor, students will develop a school and/or workplace-based learning activity that provides an in-depth study of at least one aspect of a selected business/industry/labor.

Topics:

Various

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Present the project/independent study results in a variety of formats incorporating appropriate use of technology.
2. Acquire advanced skills related to the specific business/industry/school.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Analyze how the project relates to future plans.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Develop and execute the project and presentation in a timely and cost-effective manner.
2. Interact effectively with teachers, mentors, and co-workers.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Apply communication, mathematics, and science knowledge and skills in the development and execution of the project and subsequent presentation.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content

1. Work effectively within the structure of the selected business/industry/school.

Resources:

Various

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Installation and Maintenance of Computers
Grades 9-12

Units of Credit:

One year (Elective)

Prerequisites:

None

Course Overview:

This course introduces students to computer architecture and computer literacy for basic and advanced computer repair. After successful completion of this program, students have a thorough understanding of the types of questions presented, level of knowledge tested, and skills required by the computer industry for the A+ Certification Process relating to computers and networking. Students learn how a computer works by studying the different components of a computer system and how they interact with a network. This knowledge is translated into practical skills through lab activities wherein students disassemble and reassemble computers and networks. They learn to diagnose and solve the problems of non-functional computers and networks. This course consists of classroom instruction and assignments and hands-on lab activities. The technology issues of understanding computer functions, keeping computers operational, and expanding a computer's usefulness in a network are addressed by the curriculum of this course.

The content of Installation and Maintenance of Computers is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Assessments include written and oral student responses, student-assembled products and presentation, teacher observation, and performance assessment of learning activities and tasks.

Topics:

Career Possibilities
Introduction to Computer Repair
Identify Hardware Components
Safety and Preventative Maintenance
Motherboard/Processors/Memory
Installation/Configuration/Upgrading
Diagnosing/Troubleshooting
Portable Computer Systems

Basic Networking/Communication
Customer Service and Satisfaction
Installation and Configuration of Peripherals
Diagnosing/Troubleshooting Peripherals
Networking
Internship

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Identify the key components of a computer system.
2. Compose a plan for proper computer maintenance.
3. Assemble a computer from individual component parts.
4. Diagnose and remedy the problems in a non-working computer.
5. Develop safe work habits by following established procedures relating to the risks associated with environmental hazards, high voltage equipment, and lasers.
6. Examine the fundamental operation and organization of digital computer systems.
7. Assess capabilities and make appropriate changes to a computer system to enable it to run a given piece of software.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Summarize the career opportunities for a person with computer maintenance and assembly skills.
2. Interview a person working in a computer-related job or write a report on a computer occupation of choice.
3. Summarize the career opportunities for a network administrator or network technician.
4. Develop, evaluate and adjust personal career plans.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Summarize major issues facing computer repair personnel dealing with customer satisfaction.
2. Serve an internship solving computer problems within the high school.
3. Construct an appropriate maintenance plan to meet the conditions of use for a given computer.
4. Combine knowledge of computer equipment with testing techniques and deductive reasoning skills to successfully troubleshoot microprocessor based equipment.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).

4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content

1. Analyze issues of improving customer satisfaction in a repair business and develop a plan to address each issue.
2. Analyze, arrange, and construct a computer network.
3. Construct and connect a computer system to access the Internet by following basic procedures.

4b: Workplace Competencies

WC Standard #4: Workplace Systems—Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g., impact of technology on production).
2. Practice and analyze principles of successful system management considering external factors and planning for uncontrolled variables (e.g., balance professional and personal lives).
3. Design, evaluate, and refine a system composed of subsystems (e.g. community service project, peer mediation, web page design).

Resources:

A+ Certification Interactive Workbook—First Edition
The New A+ Certification Training Guide (Theory)—Seventh Edition, Marcraft International Corporation
The New A+ Certification Training Guide (Lab Guide), Marcraft International Corporation
Network+ Certification Training Guide (Theory), Marcraft International Corporation
Network+ Certification Training Guide (Lab Guide), Marcraft International Corporation
A+ Certification Exam Guide—Second Edition, McGraw-Hill
TechRef, Sequoia Publishing
CES Computer Repair Manuals (Vols I-VII)
Windows 95/98/NT Reference Texts
DOS Reference Texts
Related Training Video and/or CD-Rom Media
Inventory of Used Hardware

Assessments:

Assessments may include A+ Certification study guides or discs and performance-based activities.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Media Communications
Grades 9 - 12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

This course provides students an overview of 3d graphics and design. The content of Media Communications is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Current professional standards are also applied. Students develop and use a variety of skills including assessing, organizing, problem solving, and analyzing in the application of electronic and printed media. Students engage in a variety of learning activities including lecture and note taking, research, individual projects, demonstrations, and performance tasks. Students are assessed through observation, performance on tests, quizzes, assigned tasks and projects and by the quality of work produced.

This course takes a broad look at media emphasizing the technology, cultural issues, and personal perspectives that communicate and influence target audiences. The Media Communications class will give students the opportunity to sharpen their media skills and learn how to communicate effectively through print, radio, video and web technologies. Students will work individually and in groups to produce media projects. Consideration will be given to writing, producing and critiquing each media assignment.

Topics:

History Research Project
Newspaper Submission
Audio Narrative Recording
Video Documentary
Video Commercial
Movie Short
Web Site for Education or Commercial Purpose
Power Point Presentation
Career Research Paper

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use computers, telecommunications and other tools of technology for research, gathering ideas and representing information or ideas accurately and appropriately.
2. Design and create media projects that successfully communicate. Students develop and present projects utilizing multi-media equipment.
3. Develop an understanding of the cultural, social, economic, and political effects of technology.
4. Develop an understanding of the characteristics and scope of technology.
5. Create designs using computer software and hardware as tools.
6. Demonstrate knowledge of new and emerging technologies that may affect media production.
7. Use math, science, and language arts skills in developing reports and solving drafting problems.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Research and analyze information related to media production, advanced graphics, and sound design careers.
2. Demonstrate skills and knowledge of technological equipment, materials, and processes used in media production and design-related careers.
3. Research and explore continuing education opportunities.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Know about various careers
2. Use and apply computer aided design processes.
3. Participate in a job shadowing experience.
4. Present and produce media projects in a timely manner.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
3. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen, interpret, and recall details and instructions.
2. Respond appropriately during conversations.
3. Locate and demonstrate written technical information.
4. Use proper technical drawing and writing.
5. Apply computation skills to solve problems.
6. Use knowledge of geometry to solve problems.
7. Apply measurement skills to solve problems.
8. Apply mathematical reasoning skills to solve problems.
9. Use formulas to solve problems.

10. Employ graphs, tables, maps and illustrations in making arguments and drawing conclusions (Science).
11. Make and use appropriate symbols, pictures, diagrams, scaled drawings and models to simplify real life situations and solve problems (Science).
12. Use computers to organize data generated models and to do research for problem solving. (Science).

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content

1. Use tools, materials, and equipment commonly employed in the field of media design efficiently and safely.
2. Participate in group or team activities to produce an original, complex multimedia presentation.
3. Form aesthetic judgments, using appropriate vocabulary and background knowledge to critique their own work and the work of others, and to support their perception of work in the arts, language and literature.
4. Critique their own work and others work in progress, both individually and in groups, to improve upon intent.

Resources:

Current Internet, printed periodicals, movies, television commercials, and other media supplements will be drawn upon for examples and information.
Software :

Acid Sound Editing software
Cannopus Video Capture and Adobe Premiere Video Editing software
Adobe PhotoShop software
Microsoft Office software
Video camera, microphones, tripod, headphones
Digital still camera

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs–those with unique abilities and/or disabilities–will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Metals Technology I
Grades 9-12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

Metals Technology I provides students with a broad, basic knowledge of various metalworking processes and techniques. Areas of study include sheet metal, foundry, ornamental iron and precision machining. Industrial principles of safety and machine operation and techniques will be stressed. The study of metals technologies allows students to reinforce, apply, and transfer their academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. In addition to their general academic and technical knowledge and skills, students gain an understanding of career opportunities and employment requirements inherent in metals technologies. Assessments include written and oral student responses, presentations, teacher observation, and performance assessment of learning activities and tasks.

The content of Metals Technology I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Sheet Metal
Personal Safety in Metalworking
Sheet Metal Pattern Development, Hand
Tools, and Cutting Tools
Sheet Metal Manufacturing Methods
Metal Buffing, Finishing, and Marking systems
Precision Machining
Personal Safety Using Metal Working
Machines
Measuring and Layout Tools
Micrometers and Verniers
Layout Tools
Machining Processes
Metalworking Lathe
Lathe Cutting Tools, Tool Holders, Cutting Speeds and Feed Selection

Sharpening Lathe Cutting Tools
Drilling, Reaming, Countersinking, and Counterboring in a Lathe
Straight Turning, Facing, and Boring
Taper Turning
Knurling
Filing and Polishing
Cutting Threads on the Lathe
Milling Machines
Work Piece-Holding Devices and Accessories
Milling Cutters
Cutting Speeds and Feeds for Milling
Milling Flat Surfaces, Bevels and Chamfers
Procedures for Square Stock
Milling Grooves and Keyways
Drilling and Boring Operations
Dividing or Indexing Operations
Foundry
Personal Safety and Equipment Usage
Sand Casting
Investment Molding
Permanent-Mold Casting and Die Casting
Miscellaneous Casting Processes
Melting and Pouring Metal
Powder Metallurgy
Ornamental Iron/Non-Ferrous Metal
Tool Safety and Layout
Getting Acquainted with Metals
Iron
Steelmaking
Kinds of Steel
Non-ferrous Metals and their Alloys
Metal Designations and Identification
Composition and Design
Electroplating Project Fabrication and Finishing

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use tools, machines, and equipment to manufacture or produce solutions to problems.
2. Use the computer as a problem-solving and design tool.
3. Demonstrate knowledge of new and emerging metal technologies that may affect the field of metals.

4. Describe how metals technologies have affected individuals, societies, cultures, economics, and environment.
5. Use technology tools to enhance learning, increase productivity, and promote creativity.
6. Use math, science, and language arts skills to develop solutions to problems.
7. Use prior knowledge to create new ideas for problem solving.
8. Identify current techniques for proper disposal of hazardous materials.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Research information related to technological continuing education and career decisions.
2. Demonstrate skills and knowledge of current equipment, materials, and processes used in related careers.
3. Recognize the career opportunities for a person with metals technologies skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Use and apply metal design processes.
2. Apply teamwork and cooperative learning abilities.
3. Develop organizational and time management skills as part of the problem-solving process.
4. Incorporate critical thinking and assessment skills.
5. Demonstrate basic understanding of historical technological advancements by interpreting and applying to problem solving.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.

4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrate understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Solve linear equations.
6. Use basic operations with real numbers.
7. Use fractions, decimals, and percents.
8. Use ratios and proportions.
9. Apply coordinate geometry.
10. Apply vocabulary and formulas of two-dimensional geometric shapes.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content

1. Describe managerial hierarchy inherent to industry.
2. Use tools, materials, and equipment commonly employed in the industry in a safe manner.
3. Assess product quality utilizing quality control management processes.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of systems (e.g., impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems, including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.

Resources:

Metalwork Technology and Practice, Glencoe/McGraw-Hill
Technology of Machine Tools, Glencoe/McGraw-Hill
Metallurgy—Second Edition, American Technical Publishers
Sheet Metal, American Technical Publishers
Technical Reference Handbook—Third Edition, American Technical Publishers
Machine Shop Operations and Setups—Fourth Edition, American Technical Publishers
Metal Projects—Book 2, Goodheart-Wilcox
Modern Metalworking, Goodheart-Wilcox
Exploring Metalworking, Goodheart-Wilcox
Metallurgy Fundamentals, Goodheart-Wilcox
Machining Fundamentals, Goodheart-Wilcox

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Metals Technology II
Grades 10-12

Units of Credit:

One year (Elective)

Prerequisites:

Metals Technology I
Drafting I (recommended)

Course Overview:

Metals Technology II is for students who have a definite desire to master basic metalworking skills. Industrial principles of safety and machine operation and techniques are emphasized. Areas of study include advanced sheet metal, ornamental ironwork, advanced machining, oxy-acetylene and mig welding. The study of metals technologies allows students to reinforce, apply, and transfer their academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. In addition to their general academic and technical knowledge and skills, students gain an understanding of career opportunities and employment requirements inherent in metals technologies. Assessments include written and oral student responses, presentations, teacher observation, and performance assessment of learning activities and tasks.

The content of Metals Technology II is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Sheet Metal
Personal Safety in Metalworking
Advanced Sheet Metal Pattern Development, Hand Tools, and Cutting Tools
Advanced Sheet Metal Manufacturing Methods
Advanced Metal Buffing, Finishing, and Marking of Metal Products
Precision Machining
Personal Safety Using Metal Working
Machines
Measuring and Layout Tools
Micrometers and Verniers
Layout Tools
Advanced Machining Processes
Personal Safety using Metal Working Machines
Metalworking Lathe

Lathe Cutting Tools, Tool Holders, Cutting Speeds and Feed Selection
Sharpening Lathe Cutting Tools
Drilling, Reaming, Countersinking,and Counterboring in a Lathe
Straight Turning, Facing, and Boring
Taper Turning
Knurling
Filing and Polishing
Cutting Treads on the Lathe
Milling Machines
Work Piece-Holding Devices and Accessories
Milling Cutters
Cutting Speeds and Feeds for Milling
Milling Flat surfaces, Bevels and Chamfers
Procedures for Square Stock
Milling Grooves and Keyways
Drilling and Boring Operations
Dividing or Indexing Operations
Foundry
Personal Safety and Equipment Usage
Sand Casting
Investment Molding
Permanent-Mold casting and Die Casting
Miscellaneous Casting Processes
Melting and Pouring Metal
Powder Metallurgy
Ornamental Iron/Non-Ferrous Metal
Tool Safety and Layout
Metals Identification and Advance Uses
Iron
Steelmaking
Kinds of Steel
Non-ferrous Metals and their Alloys
Metal Designations and Identification
Composition and Design
Electroplating
Advanced Project Fabrication and Finishing

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Determine and justify use of tools, machines, and equipment to manufacture or produce solutions to problems.

2. Develop a solution to a metal working problem using the computer as a problem-solving and design tool.
3. Compare and contrast new and emerging metal technologies that may affect the field of metals.
4. Evaluate how metals technologies have affected individuals, societies, cultures, economics, and environment.
5. Use various technology tools to enhance learning, increase productivity, and promote creativity.
6. Apply appropriate math, science, and language arts skills to develop solutions to problems.
7. Use prior knowledge to formulate new ideas used in problem-solving.
8. Formulate an environmentally-proper procedure for disposal of hazardous materials.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Analyze research information related to technological continuing education and career decisions.
2. Evaluate current equipment, materials, and processes used in related careers.
3. Assess the career opportunities for a person with metals technologies skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1.
1. Select, use and apply metal design processes.
2. Determine benefits of teamwork and cooperative learning abilities.
3. Develop organizational and time management skills as part of the problem-solving process.
4. Incorporate critical thinking and assessment skills.
5. Evaluate basic understanding of historical technological advancements by interpreting and applying to problem solving.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrate understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Solve linear equations.
6. Use basic operations with real numbers.
7. Use fractions, decimals, and percents.
8. Use ratios and proportions.
9. Apply coordinate geometry.
10. Apply vocabulary and formulas of two-dimensional geometric shapes.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Course Content

1. Describe managerial hierarchy inherent to industry.
2. Evaluate tools, materials, and equipment commonly employed in the industry for safety.
3. Assess product quality utilizing quality control management processes.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of systems (e.g., impact of change).
2. Practice e and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems, including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.

Resources:

Metalwork Technology and Practice, Glencoe/McGraw-Hill
Technology of Machine Tools, Glencoe/McGraw-Hill
Metallurgy—Second Edition, American Technical Publishers
Sheet Metal, American Technical Publishers
Technical Reference Handbook—Third Edition, American Technical Publishers
Machine Shop Operations and Setups—Fourth Edition, American Technical Publishers
Metal Projects—Book 2, Goodheart-Wilcox
Modern Metalworking, Goodheart-Wilcox
Exploring Metalworking, Goodheart-Wilcox
Metallurgy Fundamentals, Goodheart-Wilcox
Machining Fundamentals, Goodheart-Wilcox

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Power Technology I: Small Engines
Grades 9-12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

The small gasoline engine forms the basis of instruction for this course. Books, manuals, and lab work help the student learn engine design, mechanical principles, troubleshooting, tune-up, reconditioning, and maintenance. Basic principles in safety, machining and tool usage are studied. This knowledge is translated into practical skills through lab activities wherein students disassemble, then reassemble small engines. They become familiar with the functions and components of a small engine and diagnose simple failures. This course consists of classroom instruction and assignments and hands-on lab activities. Assessments include written and oral student responses, student-assembled engine and presentation, teacher observation, and performance assessment of learning activities and tasks.

The content of Powers Technology I Small Engines is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Safety in the Small Gas Engine Shop
Tools and Measuring Instruments
Fasteners, Sealants and Gaskets
Two-Cycle and Four-Cycle Engines
Engine Construction and Principles of Operation
Two-Cycle and Four-Cycle Engines
Measuring Engine Performance
Fuel Emission Control Systems
Carburetion
Ignition Systems
Lubrication Systems
Cooling Systems
Preventive Maintenance and Troubleshooting

Fuel System Service
Ignition System Service
Engine Inspection, Disassembly, and Cylinder Reconditioning
Piston and Piston Ring Service
Bearing, Crankshaft, Valve and Camshaft Service
Career Opportunities and Certification

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Identify the key components of a small engine.
2. Develop a plan for proper overhaul and maintenance.
3. Read and interpret appropriate schematics, charts and service-repair manuals and bulletins.
4. Disassemble and assemble an engine from component parts.
5. Diagnose and remedy the problems in a non-working engine.
6. Safely use hand and power tools and equipment commonly employed in the service and repair of small engines.
7. Understand the functions and the applications of the tools, equipment, technologies, and materials used in small engine services.
8. Demonstrate knowledge of new and emerging technologies that may affect the service of small engines.
9. Apply the concepts and skills of the trade to simulate actual work situations.
10. Apply the essential knowledge and skills in small engines to work-based learning experiences including, but not limited to, cooperative education, job shadowing, mentoring, and apprenticeship training.
11. Discover the principles of group participation and leadership related to citizenship and career preparation.
12. Develop the skills of effective group participation and leadership related to citizenship and career preparation.
13. Develop effective oral and written communication skills with individuals from varied cultures, including fellow workers, management, and customers.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Summarize career opportunities for a person with mechanical skills.
2. Interview a person employed in a mechanical related field or write a report on a mechanical occupation of choice.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Summarize major issues facing engine repair personnel related to customer satisfaction.
2. Assess the employability characteristics of a successful worker in the modern workplace.
3. Build knowledge of the concepts and skills related to health and safety in the workplace.
4. Practice safety in the workplace as specified by appropriate government regulations.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess work and evaluate work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate the negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Use various techniques to approximate solutions, determine the reasonableness of answers, and justify the results.
2. Use measurement tools and units appropriately and recognize limitations in the precision of the measurement tools.
3. Derive and use formulas for area, surface area, and volume of many types of figures.
4. Analyze how matter is affected by changes in temperature, pressure and volume.
5. Use mathematics to describe the work and power in a system.
6. Use mathematics to describe and predict electrical and magnetic activity (current, resistance, voltage).
7. Compare and contrast how conductors, semiconductors, and superconductors work and describe their present and potential uses.
8. Demonstrate an understanding that energy can be found in chemical bonds and can be used when it is released from those bonds.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Content Competencies

1. None.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g. impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.

Resources:

Small Gas Engines (Student Text and Workbook), Goodheart-Willcox
Shopware—Small Engine Software Series; Shopware—Five Part Series
Shopware—Small Engine Software Series--Three Part Series
Small Engines, American Technical Publishers
Small Engines Operation and Service, (Student Text and Workbook), American Technical Publishers
Engine and Equipment Manuals, Intertec Publishing Company
Briggs and Stratton Videotapes and Repair Manual, Briggs and Stratton Corporation
Manufacturer Videotapes and Repair Manuals

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Power Technology II
Grades 10-12

Units of Credit:

One year (Elective)

Prerequisites:

Power Technology I

Course Overview:

Powers Technology II includes the operation, diagnosis, maintenance and service of power production systems. Motorcycle repair, consumer mechanics, basic electrical/hydraulics, and practical engine repair techniques are all studied in this course. A variety of engines may be serviced, reconditioned and overhauled in this class. Engines that power chainsaws, motorcycles, ATV's, Snow blowers, lawnmowers, snowmobiles, and Jet skis may be utilized. Students apply current procedures for proper engine and equipment servicing. Books, manuals, and lab work help students learn engine design, mechanical principles, troubleshooting tune-up, reconditioning, and maintenance. Students also learn principles of safety, machining and tool usage. Students' knowledge is translated into practical skills through lab activities wherein students disassemble, diagnose, repair and then reassemble small engines. This course consists of classroom instruction and assignments and hands-on lab activities. The course is appropriate for aspiring technicians or students who desire a more in-depth knowledge of engines. Assessments include written and oral student responses, student-assembled engine and presentation, teacher observation, and performance assessment of learning activities and tasks.

The content of Powers Technology II is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Topics:

Safety in the Small Gas Engine Shop
Tools and Measuring Instruments
Fasteners, Sealants and Gaskets
Two-Cycle and Four-Cycle Engines
Engine Construction and Principles of Operation
Engine Inspection, Disassembly, and Cylinder Reconditioning
Piston and Piston Ring Service
Bearing, Crankshaft, Valve and Camshaft Service
Piston and Piston Ring Service
Bearing, Crankshaft, Valve and Camshaft Service

Preventive Maintenance and Troubleshooting of the Vehicle
Fuel Systems and Fuel Emission Control Systems
Body, Chassis, and Accessories Maintenance
Electrical Systems and Ignition systems
Power Trains and Suspension
Cooling Systems and Lubrication Systems
Buying and Owning a Vehicle
Career Opportunities
Fluid Power Principles
Fluid Power Cylinders
Fluid Power Pumps
Fluid Power Control Valves
Electricity/Electronics
Introduction to Electricity AC/DC Principles
Electronic Components for Power Equipment—Lab
Practical Applications of Power Technology
(Individual learning topics as determined by the student/instructor)

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Identify the key components of a small engine.
2. Develop a plan for proper overhaul and maintenance.
3. Disassemble and assemble an engine from component parts
4. Diagnose and remedy the problems in a non-working engine.
5. Judge and determine qualitative procedures for operational cost and vehicle maintenance of power equipment and the standard vehicle.
6. Understand the functions and the applications of the tools, equipment, technologies, and materials used in small engine services.
7. Demonstrate knowledge of new and emerging technologies that may affect the service of small engines.
8. Apply the concepts and skills of the trade to simulated and actual work situations.
9. Apply the essential knowledge and skills in small engines to work-based learning experiences including, but not limited to, cooperative education, job shadowing, mentoring, and apprenticeship training.
10. Apply the skills of effective group participation and leadership related to citizenship and career preparation.
11. Develop effective oral and written communication skills with individuals from varied cultures, including fellow workers, management, and customers.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Summarize the advanced training opportunities for a person with interested in a power technology career.
2. Interview a person employed as a technician in a power technology-related field and write a report on a power technology occupation of choice.
3. Assess career opportunities in the power technology area and identify educational requirements and appropriate work habits.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Summarize major issues facing engine repair personnel related to customer satisfaction.
2. Assess the employability characteristics of a successful worker in the modern workplace.
3. Build values that relate to acceptable vehicle maintenance, operation and ownership.
4. Demonstrate knowledge of the concepts and skills related to health and safety in the workplace, as specified by appropriate government relations.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare work order pricing estimates, make forecasts, keep records, make adjustments to meet objectives, and evaluate actual cost of repair records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.

2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Use various techniques to approximate solutions, determine the reasonableness of answers, and justify the results.
2. Use measurement tools and units appropriately and recognize limitations in the precision of the measurement tools.
3. Derive and use formulas for area, surface area, and volume of many types of figures.
4. Analyze how matter is affected by changes in temperature, pressure and volume
5. Use mathematics to describe the work and power in a system.
6. Use mathematics to describe and predict electrical and magnetic activity (current, resistance, voltage)
7. Compare and contrast how conductors, semiconductors, and superconductors work and describe their present and potential uses.
8. Demonstrate an understanding that energy can be found in chemical bonds and can be used when it is released from those bonds.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Content Competencies

1. Apply the skills of effective group participation and leadership related to citizenship and career preparation.

2. Develop effective oral and written communication skills with individuals from varied cultures, including fellow workers, management, and customers.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g. impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.

Resources:

Small Gas Engines (Student Text and Workbook), Goodheart-Willcox
Tronix Lab 1 Basic Electronics and Electricity—Computer Training Module, Gibson Tech Ed, Inc
Hydraulic System Diagnosis, Intertec Publishing System
Industrial Fluid Power Vol 1 and 2, Womack Educational Publications
Easy Car Care, Chilton's Book Company
Motorcycles Fundamentals, Service, Repair (Student Text and Workbook), Goodheart-Willcox
Shopware—Small Engine Software Series, Shopware—Five Part Series
Shopware—Small Engine Software Series, Shopware—Three Part Series
Small Engines, American Technical Publishers
Small Engines Operation and Service, (Student Text and Workbook), American Technical Publishers
Engine and Equipment Manuals, Intertec Publishing Company
Briggs and Stratton Videotapes and Repair Manual, Briggs and Stratton Corporation
Multiple Manual and Video Series
Manufacturer Videotapes and Repair Manuals

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Power Technology IIIA: Automotive
Grade: 9-12

Units of Credit:

One Semester (Elective)

Prerequisites:

Power Technology I and II or consent of instructor

Course Overview:

Automotive Technology students learn how to maintain, diagnose and repair engines, automatic and manual transmissions/transaxles, suspensions, power steering systems, brakes, electrical systems, and heating and air conditioning systems. Engine performance testing is an integral part of their training.

Training also includes the safe removal and recycling of hazardous materials. All areas of instruction in this program help prepare the students for the certification test sponsored by the National Institute for Automotive Service Excellence (ASE).

Students who meet eligibility requirements may have the opportunity to earn college credits for units of study within this career program. Students qualify to participate in the Automotive Youth Educational System (AYES) program that provides outstanding opportunities for high school students to get on the job training in the industry.

Graduates of this program may obtain employment as general automotive technicians and automotive service repairers specializing in any one or more of the following areas: brakes, front ends, steering and suspension systems; engine repairs, tune up, and emission systems; electric and fuel systems; automotive heating and air conditioning systems; and automatic and manual transmissions/transaxles. This program will be certified by the National Automotive Technicians Education Foundation, Inc.

Topics:

Tire and wheel service
Brake service
Steering and suspension service
Lubrication and cooling systems
Vehicle preparation and maintenance
Fuel and exhaust systems
Electrical systems
Battery service
Starting systems
Charging systems Ignition systems
Engine service

Emission testing service
Vehicle safety/emission inspection
Alignment service
Air conditioning service
Power train service
Internship

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Identify the key components of a automotive systems
2. Compose a plan for proper automotive maintenance.
3. Assemble vehicle components from individual component parts.
4. Diagnose and remedy the problems in non-working automotive systems.

Standard #2: Career and Life Planning

Students develop self-knowledge; explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Summarize the career opportunities for a person with automotive repair skills.
2. Interview a person working in a automotive related job
3. Write a report on a automotive occupation of choice

Standard #3: Skills for Life and Work

3a: Skills for Life and Work Content

1. None.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare work order pricing estimates, make forecasts, keep records, make adjustments to meet objectives, and evaluate actual cost of repair records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Use various techniques to approximate solutions, determine the reasonableness of answers, and justify the results.
2. Use measurement tools and units appropriately and recognize limitations in the precision of the measurement tools.
3. Derive and use formulas for area, surface area, and volume of many types of figures.
4. Analyze how matter is affected by changes in temperature, pressure and volume
5. Use mathematics to describe the work and power in a system.
6. Use mathematics to describe and predict electrical and magnetic activity (current, resistance, voltage)
7. Compare and contrast how conductors, semiconductors, and superconductors work and describe their present and potential uses.
8. Demonstrate an understanding that energy can be found in chemical bonds and can be used when it is released from those bonds.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers,

volunteers, and the community in the study of organizational behavior.

4a: Content Competencies

1. Apply the skills of effective group participation and leadership related to citizenship and career preparation.
2. Develop effective oral and written communication skills with individuals from varied cultures, including fellow workers, management, and customers.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g. impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.

Resources:

ASE Certified text books.
Software to enable the instructor to teach to ASE Certification.
Factory and aftermarket ASE orientated training films.

Aldata computerized repair manuals Access the most comprehensive diagnostic, repair, and maintenance information that professional technicians have been using for over a decade. With a subscription to ALLDATA DIY, access all recall information, Full Technical Service Bulletins (TSBs) and comprehensive diagnostic and repair information. This invaluable information is also updated quarterly, unlike a printed repair manual.

Michelle manuals – on demand computerized and hard copy.

Factory Recall and Technical Service Bulletins (TSB)
This information addresses safety, reliability, performance and comfort related problems with your car. Also provides fixes for common problems and updated factory repair procedures

Factory Maintenance Schedules, repair manuals, wiring diagrams, component locations and diagrams.

Diagnostic Charts and Trouble Codes books. MITCHELL on-demand Manual, Domestic Cars, Light Trucks and Vans domestic and Import Vehicles, with Labor Guide

Chek-Chart is the premier source of fluid maintenance service specifications in time-saving chart formats!
MOTOR Service Repair Manuals provide more than 50,000 pages of information annually to the automotive aftermarket and repair industry. The collection maintains an active backlist of titles with more than 500,000 pages of technical information. The manuals are designed specifically for automotive technicians who repair both domestic and imported cars, trucks, vans, and SUVs.

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Power Technology IIIB: Agricultural and Industrial Mechanics
Grades: 11-12

Units of Credit:

One semester (Elective)

Prerequisites:

Power Tech I and II or consent of instructor

Course Overview:

Agricultural/Industrial mechanics students will become familiar with mechanical systems associated with machinery used in landscaping, small plot farming, turf grass industry and light construction. Students will learn safety procedures, diagnosis and repair of fuel systems, electrical systems, engine systems (gasoline and diesel), drive trains, hydrostatic drives, hydraulic systems, brake systems and safety systems.

The course will follow Equipment and Engine Training Council (EETC) guidelines and may include EECT certification tests.

The content of Power Technology III is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Understanding equipment functions and keeping equipment functional will increase a student's ability to adapt to the needs of the Agriculture/Industry equipment repair industry.

Topics:

Vehicle safety
Vehicle preparation and maintenance
Lubrication and cooling systems
Fuel and exhaust systems
Steering and suspension service
Brake service
Tire and track service
Engine service
Power train service
Battery service
Electrical systems
Starting systems
Charging systems

Ignition systems
Internship

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Identify the key components of Agriculture/Industrial systems.
2. Compose a plan for proper equipment maintenance.
3. Assemble equipment components from individual component parts.
4. Diagnose and remedy the problems in non-working equipment systems.

Standard #2: Career and Life Planning

Students develop self-knowledge; explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Summarize the career opportunities for a person with equipment repair skills.
2. Interview a person working in Agriculture/Industrial equipment related job
3. Write a report on Agriculture/Industrial equipment occupation of choice

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Competencies for Life and Work

3b: Workplace Competencies

WC Standard #1: Workplace Resources-Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare work order pricing estimates, make forecasts, keep records, make adjustments to meet objectives, and evaluate actual cost of repair records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills-Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information-Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Use various techniques to approximate solutions, determine the reasonableness of answers, and justify the results.
2. Use measurement tools and units appropriately and recognize limitations in the precision of the measurement tools.
3. Derive and use formulas for area, surface area, and volume of many types of figures.
4. Analyze how matter is affected by changes in temperature, pressure and volume
5. Use mathematics to describe the work and power in a system.
6. Use mathematics to describe and predict electrical and magnetic activity (current, resistance, voltage)
7. Compare and contrast how conductors, semiconductors, and superconductors work and describe their present and potential uses.
8. Demonstrate an understanding that energy can be found in chemical bonds and can be used when it is released from those bonds.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Course Content

1. Apply the skills of effective group participation and leadership related to citizenship and career preparation.
2. Develop effective oral and written communication skills with individuals from varied cultures, including fellow workers, management, and customers.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g. impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.

Resources:

Outdoor Power Equipment and Engine Service Association
Kubota Education Network
John Deere Service Publications
Deere and Company Service Publications
Toro Power Equipment- Equipment Operation and Safety Training
Briggs and Stratton Power Equipment
Tecumseh Power Equipment
Small Gas Engines; Alfred C. Roth
Small Engine Technology; William A Schuster
Introduction to Compact and Automotive Diesels; Edward Ralbovsky
Outdoor Power Equipment Electrical Systems; William A. Schuster
Fundamentals of Service Engines; John Deere Service Publications
Diesel Engines; Roland Expenschied

Assessment:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs-those with unique abilities and/or disabilities-will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Welding Design and Fabrication Technology
Grades 11-12

Units of Credit:

One year (Elective)

Prerequisites:

Welding Technology I and II; Drafting I

Course Overview:

This course is for students who want to construct and assemble projects from the materials used in the art metal, construction, and metals industries. The content of Welding Design and Fabrication Technology is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Current industry standards are observed and practiced. Students master and apply a variety of skills including safe work habits, organization, problem solving, and practical application of welding techniques. Students engage in a variety of learning activities including lecture and note taking, research, individual projects, demonstrations, and performance tasks. Students are assessed by observing and measuring performance on tests, quizzes, assigned tasks and projects, and by the quality of work produced.

Topics:

Welding and Personal Safety
Care, Use, and Maintenance of Equipment
Advanced Joint Design and Construction
Welding Terminology
Welding Fabrication
Artistic Expression in Welding
Out of Position Welding
Advanced Oxyacetylene Welding
Advanced Arc Welding
Shielded Gas (MIG and TIG) Welding
Material Cutting Processes
Forge Welding
Welding Career Exploration
Welding Metallurgy
Production Welding
Welding Certification and Testing

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use tools, machines, and equipment to manufacture or produce solutions to problems.
2. Demonstrate creativity in the use of new and emerging technologies applicable to welding fabrication.
3. Select and apply welding techniques based on knowledge of modern equipment and newly developed welding processes.
4. Apply critical-thinking strategies to the analysis and evaluation of potential welding and fabrication assignments.
5. Produce projects based on designing and/or interpreting plans.
6. Use cross-curricular resources and knowledge to develop solutions to problems.
7. Design and fabricate innovative solutions and applications.
8. Utilize correct techniques for proper handling of hazardous materials.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Explore opportunities related to welding technologies as they apply to continuing education and career decisions.
2. Apply the skills and knowledge of current equipment, materials, and processes used in related careers.
3. Observe and assess the career opportunities for a person with welding skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Apply design and fabrication processes in a welding environment.
2. Incorporate teamwork and cooperative learning skills.
3. Form organizational and time management skills as part of the problem-solving process.
4. Evaluate and apply the concepts and skills related to health and safety in the workplace.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content

1. Build upon the principles of effective group participation and leadership related to workplace hierarchy.

2. Use tools, materials, and equipment commonly employed in the welding industry in a safe and efficient manner.
3. Apply product quality standards common to the industry.

Resources:

Welding Skills, American Technical Publishers
The Procedure Handbook of Arc Welding, Lincoln Electric
Student Activity Manual for Welding Skills and Practices, American Technical Publishers
Welding Principles and Applications, Delmar Publishers

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Welding Technology I
Grades 9-12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

This course offers students an opportunity to learn the fundamentals of welding technology. The content of Welding Technology I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Current industry standards are introduced. Students develop and use a variety of skills including safe work habits, organization, problem solving, and practical application of welding techniques. Students engage in a variety of learning activities including lecture and note taking, research, individual projects, demonstrations, and performance tasks. Students are assessed by observing and measuring performance on tests, quizzes, assigned tasks and projects, and by the quality of work produced.

Topics:

Welding and Personal Safety
Care and Use of Equipment
Joint Design and Construction
Welding Terminology
Introduction to Oxyacetylene Welding
Introduction to Arc Welding
Introduction to MIG Welding
Material Cutting Processes
Welding Career Exploration

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use tools, machines, and equipment to manufacture or produce solutions to problems.

2. Demonstrate knowledge of new and emerging technologies that may affect the field of welding.
3. Practice appropriate welding techniques based on knowledge of modern equipment and newly developed welding processes.
4. Use cross-curricular resources and knowledge to develop solutions to problems.
5. Develop knowledge to create innovative solutions and ideas.
6. Utilize correct techniques for proper handling of hazardous materials.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Identify information related to welding technologies as it applies to continuing education and career decisions.
2. Demonstrate skills and knowledge of current equipment, materials, and processes used in related careers.
3. Recognize the career opportunities for a person with welding skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Use and apply basic welding processes in an industrial environment.
2. Apply teamwork and cooperative learning skills.
3. Develop organizational and time management skills as part of the problem-solving process.
4. Demonstrate knowledge of concepts and skills related to health and safety in the workplace.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.

4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content

1. Demonstrate the principles of effective group participation and leadership related to citizenship and career preparation.
2. Use tools, materials, and equipment commonly employed in the industry in a safe manner.
3. Assess product quality using standard testing practices.

Resources:

Welding Skills, American Technical Publishers
Student Activity Manual for Welding Skills and Practices, American Technical Publishers

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Welding Technology II
Grades 10-12

Units of Credit:

One year (Elective)

Prerequisites:

Welding Technology I; Drafting I recommended

Course Overview:

This course affords students an opportunity to master the fundamentals of advanced welding and metal fabrication. The content of Welding Technology II is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work. Current industry standards are observed and practiced. Students master and use a variety of skills including safe work habits, organization, problem solving, and practical application of welding techniques. Students engage in a variety of learning activities including lecture and note taking, research, individual projects, demonstrations, and performance tasks. Students are assessed through observation, performance on tests, quizzes, assigned tasks and projects, and by the quality of work produced.

Topics:

Welding and Personal Safety
Care, Use, and Maintenance of Equipment
Advanced Joint Design and Construction
Welding Terminology
Welding Fabrication
Out of Position Welding
Advanced Oxyacetylene Welding
Advanced Arc Welding
Shielded Gas (MIG and TIG) Welding
Material Cutting Processes
Welding Career Exploration
Welding Metallurgy
Production Welding
Welding Certification and Testing

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use tools, machines, and equipment to manufacture or produce solutions to problems.
2. Demonstrate knowledge and apply new and emerging technologies that are utilized in the field of welding.
3. Demonstrate appropriate welding techniques based on knowledge of modern equipment and newly developed welding processes.
4. Apply critical-thinking strategies to the analysis and evaluation of potential welding and fabrication assignments.
5. Use cross-curricular resources and knowledge to develop solutions to problems.
6. Utilize knowledge to create innovative solutions and ideas.
7. Utilize correct techniques for proper handling of hazardous materials.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Use information related to welding technologies as it applies to continuing education and career decisions.
2. Demonstrate skills and knowledge of current equipment, materials, and processes used in related careers.
3. Observe and summarize the career opportunities for a person with welding skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills and higher order thinking skills. Personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Apply welding processes in an industrial environment.
2. Apply teamwork and cooperative learning skills.
3. Demonstrate organizational and time management skills as part of the problem-solving process.
4. Demonstrate knowledge of concepts and skills related to health and safety in the workplace.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

<u>Standard #4: Structure of Organizations and Work</u>

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Specific Course Content

1. Build upon the principles of effective group participation and leadership related to workplace hierarchy.
2. Use tools, materials, and equipment commonly employed in the industry in a safe manner.
3. Assess product quality using standard testing practices.

Resources:

Welding Skills, American Technical Publishers
The Procedure Handbook of Arc Welding, Lincoln Electric
Student Activity Manual for Welding Skills and Practices, American Technical Publishers
Welding Principles and Applications, Delmar Publishers

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Wood Technology I
Grades 9-12

Units of Credit:

One semester (Elective)

Prerequisites:

None

Course Overview:

This course challenges students with problem-solving situations related to wood and wood technology. Basic skills in sawing, planning, drilling, gluing, shaping, finishing and design are demonstrated to students through mass production and teacher-required projects and activities with an emphasis on safety. The content of Wood Technology I is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Current industry standards are introduced. Students develop and use a variety of skills including safe work habits, organization, problem solving, and practical application of woodworking techniques. Students engage in a variety of learning activities including lecture and note taking, research, individual projects, demonstrations, and performance tasks. Students are assessed through observation, performance on tests, quizzes, assigned tasks and projects, and by the quality of work produced.

Topics:

Measurement Systems
Care and Use of Hand Tools and Equipment
Introduction to Safe Use of Portable Power Tools
Introduction to Safe Use of Woodworking Machines
Personal Safety in the Woodworking Laboratory
Introduction to Wood Joinery and Shaping
Basic Woodworking Terminology
Wood Identification
Wood Preparation for Finishing
Introduction to Wood Finishing
Woods Technology Career Exploration
Basic Design and Planning

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Use tools, machines, and equipment to manufacture or produce solutions to problems.
2. Demonstrate knowledge of new and emerging technologies that may affect the field of woodworking.
3. Practice appropriate woodworking techniques based on knowledge of modern equipment and newly developed woodworking processes.
4. Read and interpret woodworking project plans.
5. Use cross-curricular resources and knowledge to develop solutions to problems.
6. Develop knowledge to create innovative solutions and ideas.
7. Utilize correct techniques for proper handling of hazardous materials.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Identify information related to woods technologies as it applies to continuing education and career decisions.
2. Demonstrate skills and knowledge of current equipment, materials, and processes used in related careers.
3. Recognize the career opportunities for a person with woodworking skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Apply basic woodworking skills in a working environment.
2. Apply teamwork and cooperative learning skills.
3. Develop organizational and time management skills as part of the problem-solving process.
4. Demonstrate knowledge of the concepts and skills related to health and safety in the workplace.
5. Produce work of the highest quality possible.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrate understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Solve linear equations.
6. Use basic operations with real numbers.
7. Use fractions, decimals, and percents.
8. Use ratios and proportions.
9. Apply coordinate geometry.
10. Apply vocabulary and formulas of two-dimensional geometric shapes.
11. Use vocabulary and formulas of three-dimensional geometric shapes.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Content Competencies

1. Demonstrate the principles of effective group participation and leadership related to citizenship and career preparation.
2. Use tools, materials, and equipment common to the field of woodworking in a safe manner.
3. Select raw materials based on product quality.
4. Recognize acceptable finished product quality.

Resources:

Beginning Woodwork, Glencoe McGraw-Hill
Wood Technology and Processes, Glencoe McGraw-Hill
Exploring Woodworking, Goodheart-Wilcox
Modern Woodworking, Goodheart-Wilcox

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Wood Technology II
Grades 10-12

Units of Credit:

One year (Elective)

Prerequisites:

Woods Technology I
Drafting I (recommended)

Course Overview:

Wood Technology II emphasizes a combination of advanced machine operations and wood technology. Students are presented with various problems for which they must conceptualize the solution, then design and build the final product. Students study advanced furniture design and cabinetmaking. Research practice and advanced application of material and machine processes are conducted. Extensive and intricate projects are completed. The content of Wood Technology II is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Current industry standards are introduced. Students develop and use a variety of skills including safe work habits, organization, problem solving, and practical application of woodworking techniques. Students engage in a variety of learning activities including lecture and note taking, research, individual projects, demonstrations, and performance tasks. Students are assessed through observation and measurement of performance on tests, quizzes, assigned tasks and projects, and by the quality of work produced.

Topics:

Measurement Systems
Maintenance and Use of Hand Tools and Equipment
In-Depth Use of Portable Power Tools
Application of Advanced Techniques to the Use of Woodworking Machines
Personal Safety in the Woodworking Laboratory
Introduction to Wood Joinery and Shaping
Advanced Woodworking Terminology
Wood Identification
Wood Preparation for Finishing
Advanced Techniques in Wood Finishing
Inventory of Woods Technology Careers
Advanced Design and Planning
Line Production

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Set up tools, machines, and equipment to manufacture or produce solutions to problems.
2. Demonstrate application of appropriate woodworking techniques based on knowledge of modern equipment and newly developed woodworking processes.
3. Develop, read and interpret woodworking project plans.
4. Apply critical-thinking strategies to the analysis and evaluation of potential wood design and fabrication activities.
5. Use cross-curricular resources and knowledge to develop solutions to problems.
6. Utilize knowledge and resources to create innovative solutions and ideas.
7. Utilize correct techniques for proper handling of hazardous materials.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Use information related to woods technologies as it applies to continuing education, vocational, avocational, and career decisions.
2. Identify skills and knowledge of advanced power equipment, materials, and processes in related careers.
3. Observe and summarize the career opportunities for a person with woodworking skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

3a: Skills for Life and Work Content

1. Apply advanced woodworking skills in a working environment.
2. Apply teamwork and cooperative learning skills.
3. Develop and justify organizational and time management skills as part of the problem-solving process.
4. Evaluate and apply knowledge of the concepts and skills related to health and safety in the workplace.
5. Produce work of the highest quality possible.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.
2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrate understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Solve linear equations.
6. Use basic operations with real numbers.
7. Use fractions, decimals, and percents.
8. Use ratios and proportions.
9. Apply coordinate geometry.
10. Apply vocabulary and formulas of two-dimensional geometric shapes.
11. Use vocabulary and formulas of three-dimensional geometric shapes.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Content Competencies

1. Build upon the principles of effective group participation and leadership related to workplace hierarchy.
2. Use tools, materials, and equipment common to the field of woodworking in a safe manner.
3. Select raw materials based on product application.
4. Recognize and produce acceptable finished product quality.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g. impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems including optimizing outputs and making in-process adjustments.

Resources:

Wood Technology and Processes, Glencoe McGraw-Hill
Exploring Woodworking, Goodheart-Wilcox
Modern Woodworking, Goodheart-Wilcox
Modern Cabinetmaking, Goodheart-Wilcox

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

Wood Technology III
Grades 11-12

Units of Credit:

One year (Elective)

Prerequisites:

Wood Technology I and II
Drafting I (or consent of instructor)

Course Overview:

Wood Technology III emphasizes a combination of advanced machine operations, millwork, cabinetry, and basic residential construction methodology. Students improve their skills related to the aforementioned areas of study. The course promotes strong work ethics, communication skills, problem solving, teamwork, and continued skill development in the construction trades.

The content of Wood Technology III is arranged around the four MCPS Career and Technical Education Standards. These standards include Technical Skills and Content Knowledge, Career and Life Planning, Skills for Life and Work, and Structure of Organizations and Work.

Current industry standards are introduced. Students develop and use a variety of skills including safe work habits, organization, problem solving, and practical application of construction techniques. Students engage in a variety of learning activities including lecture, note taking, research, individual projects, demonstrations, and performance tasks. Student achievement is measured in a variety of ways. Written, oral, and performance tests are administered. In addition, student projects and behavior are evaluated using criteria specified by teacher/industry standards.

Topics:

Measurement Systems
In-Depth Use of Portable Power Tools
Personal Safety
Advanced Design and Planning
Plan and Blueprint Interpretation
Advanced Woodworking Terminology
Wood Identification
Wood Preparation for Finishing
Advanced Techniques in Wood Finishing
Inventory of Woods Technology Careers
Advanced Design and Planning
Line Production

Content Competencies:

Standard #1: Technical Skills and Content Knowledge

Students acquire and demonstrate current knowledge and skills leading to an occupation.

1. Set up tools, machines, and equipment to manufacture or produce solutions to problems.
2. Demonstrate application of appropriate woodworking/construction techniques based on knowledge of modern equipment and newly developed woodworking/construction processes.
3. Develop, read and interpret project plans and blueprints.
4. Apply critical-thinking strategies to the analysis and evaluation of project design and fabrication activities.
5. Use cross-curricular resources and knowledge to develop solutions to problems.
6. Utilize knowledge and resources to create innovative solutions and ideas.
7. Utilize correct techniques for proper handling of hazardous materials.

Standard #2: Career and Life Planning

Students develop self-knowledge, explore different educational, career, and life options available, and design and implement educational, career, and life plans.

1. Use information related to woods technologies/building trades as it applies to continuing education, vocational, avocational, and career decisions.
2. Acquire skills and knowledge related to industry, materials, and processes in related careers.
3. Observe and summarize the career opportunities for a person with woodworking/construction skills.

Standard #3: Skills for Life and Work

Students acquire and apply the necessary skills that will help them become successful, productive citizens. Workplace skills must build upon basic academic skills; and higher order thinking skills and personal qualities must be practiced in an environment that accurately represents the realities of today's workplace.

#3a: Skills for Life and Work Content

1. Apply advanced woodworking/construction skills in a working environment.
2. Apply teamwork and cooperative learning skills.
3. Develop and justify organizational and time management skills as part of the problem-solving process.
4. Evaluate and apply knowledge of the concepts and skills related to health and safety in the workplace.

5. Produce work of the highest quality possible.

3b: Workplace Competencies

WC Standard #1: Workplace Resources—Students identify, organize, plan, and allocate workplace resources of time, money, materials, facilities, and human resources.

1. Select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records.
3. Allocate and evaluate time, materials, facilities and resources to set and achieve goals.
4. Assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals.

WC Standard #2: Interpersonal Workplace Skills—Students acquire and demonstrate interpersonal workplace skills.

1. Practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity.
2. Demonstrate and teach a learned skill including performance evaluation of self and others in this process.
3. Communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies.
4. Practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising.
5. Practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints).

WC Standard #3: Workplace Information—Students acquire and use workplace information.

1. Gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace.
2. Organize, process, analyze, and maintain written and computerized records and other forms of information using systematic methods.
3. Select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia).
4. Acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources.

3c: Applied Academics and Reasoning Skills: Communication Arts and Math Content

1. Listen for, receive, interprets and recall specific details and instructions in conversations and group meetings.

2. Respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary.
3. Locate and demonstrate understanding of written technical and non-technical information necessary for completion of task or project.
4. Use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately.
5. Solve linear equations.
6. Use basic operations with real numbers.
7. Use fractions, decimals, and percents.
8. Use ratios and proportions.
9. Apply coordinate geometry.
10. Apply vocabulary and formulas of two-dimensional geometric shapes.
11. Use vocabulary and formulas of three-dimensional geometric shapes.

Standard #4: Structure of Organizations and Work

Students gain an understanding of simple and complex organizations; engage in analysis or application of organizational concepts; incorporate the perspectives of management, workers, volunteers, and the community in the study of organizational behavior.

4a: Content Competencies

1. Build upon the principles of effective group participation and leadership related to workplace hierarchy.
2. Use tools, materials, and equipment common to the field of woodworking in a safe manner.
3. Select raw materials based on product application.
4. Recognize and produce acceptable finished product quality.

4b: Workplace Competencies

WC Standard #4: Workplace Systems – Students demonstrate an understanding of how social, organizational, and technological systems work.

1. Evaluate quality and performance of a variety of systems (e.g. impact of change).
2. Practice and analyze principles of system management considering external factors and uncontrolled variables.
3. Manage and analyze existing systems including optimizing outputs and making in-process adjustments.
4. Design and evaluate a system composed of subsystems.

Resources:

Modern Cabinetmaking, Goodheart-Wilcox
Cabinetmaking and Millwork, Glencoe Publishing

Carpentry, Delmar Publishers
Carpentry and Building Construction, Glencoe/McGraw Hill
Construction Technology, Delmar Publishing

Assessments:

Assessment will include written and oral student response, student-made products and presentations, teacher observation, objective tests, and performance assessment of learning activities and tasks.

Meeting Diverse Student Needs:

Students with diverse needs—those with unique abilities and/or disabilities—will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. For methodology, please see Appendix I.

APPENDIX I

MEETING STUDENTS' DIVERSE NEEDS

Students with diverse needs--those with unique abilities and/or disabilities--will have differentiated opportunities to achieve competencies and standards, and at rates and in manners consistent with their needs. Students who excel will have opportunities to achieve competencies and standards at a faster pace. Some appropriate modifications include the following:

Content Enrichment is the presentation of curricula in more depth and breadth. This may include extra lessons or assignments used to elaborate the student's richness of understanding of existing curriculum competencies and/or standards.

Content Sophistication is the presentation of curricula that most students might not be able to master.

Content Novelty is the presentation of content not covered in traditional school curriculum.

Content Acceleration is the presentation of curricula intended for older students and/or those in higher grades. This may include accelerating a student through the entire grade level curriculum and into the curriculum of the next grade level.

The needs of those students who have difficulty learning concepts will be met in a variety of ways in the classroom both through informal intervention and formally prescribed intervention as necessary. Among possible accommodations are the following:

Supplementary materials such as study guides or materials available at easier reading levels covering the same content could be used . Books on tape are also available for some subjects.

Class notes could be provided to students with special needs. Notes specific to tests are particularly helpful.

A **variety of instructional approaches** should be used to meet needs of visual, auditory, and kinesthetic learners.

The **amount of material tested at one time** could be reduced.

Assistance from Resource Room or Title I Staff should be employed as necessary.

Alternative and/or modified assignments should be employed as necessary. For example, the assignment of projects rather than reports or the opportunity for some students to dictate answers to questions.

Questions could be read aloud for those students who are more effective at auditory learning.

Taping class lectures could be used to help those students who have difficulty writing or comprehending.

APPENDIX II

Career and Technical Education Collaborative Work Skills: Personal and Leadership Skills Rubric

CATEGORY	4	3	2	1
Working with Others	Almost always listens to, shares with, and supports the efforts of others. Tries to keep people working well together.	Usually listens to, shares with, and supports the efforts of others. Does not cause "waves" in the group.	Often listens to, shares with, and supports the efforts of other, but sometimes is not a good team member.	Rarely listens to, shares with, and supports the efforts of others. Often is not a good team player.
Contributions	Routinely provides useful ideas when participating in the group and in classroom discussion. A definite leader who contributes a lot of effort.	Usually provides useful ideas when participating in the group and in classroom discussion. A strong group member who tries hard!	Sometimes provides useful ideas when participating in the group and in classroom discussion. A satisfactory group member who does what is required.	Rarely provides useful ideas when participating in the group and in classroom discussion. May refuse to participate.
Focus on the Task	Consistently stays focuses on the task and what needs to be done. Very self-directed	Focuses on the task and what needs to be done most of the time. Other group members can count on this person.	Focuses on the task and what needs to be done some of the time. Other group members must sometimes nag, prod, and remind to keep this person on-task.	Rarely focuses on the task and what needs to be done. Lets others do the work.
Problem-solving	Actively looks for and suggests solutions to problems.	Refines solutions suggested by others.	Does not suggest or refine solutions, but is willing to try out solutions suggested by others.	Does not try to solve problems or help others solve problems. Lets others do the work.
Preparedness	Brings needed materials to class and is always ready to work.	Almost always brings needed materials to class and is ready to work	Almost always brings needed materials but sometimes needs to settle down and get to work.	Often forgets needed materials or is rarely ready to get to work.

APPENDIX III

Career and Technical Education Collaborative Work Skills: Resource Management

CATEGORY	4	3	2	1
Fiscal Management	Prepares and analyzes financial plans to meet objectives	Prepares a budget and keeps financial records	Uses basic monetary skills and maintains financial records	Does not use basic monetary skills and maintain financial records
Physical Resource Management	Evaluates the use of physical resources	Uses physical resources wisely to accomplish goal	Recognizes physical limitations on physical resources	Does not recognize limitations on physical resources
Time-management	Routinely uses time well throughout the project to ensure things get done on time. Group does not have to adjust deadlines or work responsibilities because of this person's procrastination.	Usually uses time well throughout the project, but may have procrastinated on one thing. Group does not have to adjust deadlines or work responsibilities because of this person's procrastination.	Tends to procrastinate, but always gets things done by the deadlines. Group does not have to adjust deadlines or work responsibilities because of this person's procrastination.	Rarely gets things done by the deadlines AND group has to adjust deadlines or work responsibilities because of this person's inadequate time management.
Quality of Work	Provides work of the highest quality.	Provides high quality work.	Provides work that occasionally needs to be checked/redone by other group members to ensure quality.	Provides work that usually needs to be checked/redone by others to ensure quality.

APPENDIX IV

MISSOULA
COUNTY PUBLIC SCHOOLS

Family & Consumer Science
Career Plan Rubric

Score	Descriptors
4	• Develop and evaluate a career plan that includes an internship • Know and demonstrate 100% of the requirements of the workplace through authentic application • Complete three interest and/or personality tests; interpret and summarize results • Resume must meet proficiency status for novice plus three additional resume headings as directed by instructor
3	• Completes a career plan that includes a job shadow • Know and demonstrate 90% of the requirements of the workplace through authentic application • Complete two interest and/or personality tests; interpret and summarize results • Resume must meet proficiency status for novice plus two additional resume headings as directed by instructor
2	• Develop a career plan that includes a personal interview • Know and demonstrate 80% of the requirements of the workplace through authentic application • Complete two interest and/or personality tests; interpret and summarize results • Resume must meet proficiency status for novice plus one additional resume heading as directed by instructor
1	• Develop a complete career plan • Know and demonstrate 70% of the requirements of the workplace through authentic application • Complete an interest and/or personality test without interpreting or summarization • Complete an error free, word processed resume containing name, education and three personal references

4 **Advanced Proficiency:** This level denotes performance above a proficient level.
3 **Proficient:** This level denotes solid academic performance at grade level.
2 **Nearing Proficiency:** This level denotes that the student has partial mastery of the grade level knowledge and skills.
1 **Novice:** This level denotes that the student is beginning to attain grade level knowledge and skills.

MISSOULA
COUNTY PUBLIC SCHOOLS

Family & Consumer Science
Middle School
Food Labs Rubric

Score	Descriptors
4	• Consistently and independently identify nutritional value of food • Consistently apply sanitation and safety practices • Consistently demonstrate the ability to use standard measurement procedures • Consistently and independently demonstrates the proper use of kitchen utensils • Demonstrate leadership and ability to work on a team • Consistently demonstrate ability to make a food product
3	• Demonstrate understanding of nutritional value of food • Demonstrate and understand sanitation and safety practices • Demonstrate the ability to use standard measurement procedures • Demonstrate the proper use of kitchen utensils • Demonstrate ability to work on a team • Demonstrate ability to make a food product
2	• Usually demonstrate understanding of nutritional value of food • Sometimes demonstrate understanding of safety and sanitation practices • Usually demonstrate ability to use standard measurement procedure • Usually demonstrate the proper use of kitchen utensils • Usually demonstrate ability to work on a team • Usually demonstrate ability to make a food product
1	• Beginning to understand nutritional value of food • With assistance demonstrate understanding of sanitation and safety practices • Beginning to be able to use standard measurement procedures • Beginning to understand the proper use of kitchen utensils • Sometimes demonstrate ability to work on a team • Sometimes demonstrate ability to make a food product

4 **Advanced Proficiency:** This level denotes performance above a proficient level.
3 **Proficient:** This level denotes solid academic performance at grade level.
2 **Nearing Proficiency:** This level denotes that the student has partial mastery of the grade level knowledge and skills.
1 **Novice:** This level denotes that the student is beginning to attain grade level knowledge and skills.

APPENDIX V

HUMAN SERVICES CLUSTER
CAREER MAJORS

Family & Consumer Sciences Education	**Child Development**	**Culinary Arts**	**Textiles and Apparel**
Recommended Courses	Recommended Courses	Recommended Courses	Recommended Courses
Freshman Seminar Career, Family & Community Connections Intergenerational Care Nutrition & Wellness Housing & Living Environments	Freshman Seminar Career, Family & Community Connections Intergenerational Care I & II Nutrition and Wellness *Textiles	Freshman Seminar Career, Family & Community Connections Nutrition & Wellness Culinary Arts I, II, & III	Freshman Seminar Career, Family & Community Connections Fashion Merchandising Textiles I & II *Intro to Business *Start Your Own Business
Elective Courses	Elective Courses	Elective Courses	Elective Courses
Textiles *Intro to Business	*Start Your Own Business *Principles of Marketing & sales *Advertising	*Hospitality, Tourism & Recreation I & II *Principles of Marketing & Sales *Start Your Own Business	*Principles of Marketing & Sales *Advertising

Housing & Interiors	**Hospitality Services**	**Family Services**
Recommended Courses	Recommended Courses	Recommended Courses
Freshman Seminar Career, Family & Community Connections Housing & Living Environments Textiles I & II *Intro to Business	Freshman Seminar Career, Family & Community Connections Hospitality, Tourism & Recreation I & II *Culinary Arts I, II, & III *Principles of Marketing & Sales	Freshman Seminar Career, Family & Community Connections Intergenerational Care I & II Nutrition & Wellness Housing & Living Environments *Health Occupations *Parenting
Elective Courses	Elective Courses	Elective Courses
*Start Your Own Business *Computer Assisted Design Tech OR *Computer Aided Drafting *Horticulture	*Start Your Own Business *Advertising	*Intro to Business
*Other courses directly related to career major		
NOTE: Three credits must come from recommended courses. To complete a career major, students must earn four career-related credits within the major and two math, two science, four English, and two and a half social studies credits.		

APPENDIX VI

INDUSTRIAL TECHNOLOGY CLUSTER
CAREER MAJORS

Agriculture, Food & Natural Resources	Architecture & Construction	Arts, A/V Technology & Communications	Information Technology
Recommended Courses	Recommended Courses	Recommended Courses	Recommended Courses
Ag Ed 1, 2 & 3-4 Drafting 1 & 2 Metals Tech 1 & 2 Power Tech 1 & 2 Wood Tech 1 and 2 Welding 1 & 2 Applied Tech 1 & 2 Building Trades 1 and 2 Welding Design and Fabrication Nutrition and Wellness Introduction to Business Accounting 1 Computer Science Healthcare Foundations Installation and Maintenance of Computers 1 & 2	Drafting 1, 2, 3 & 4 Applied Tech 1 & 2 Metals Tech 1 & 2 Woods Tech 1, 2, & 3 Building Trades 1 & 2 Installation and Maintenance of Computers 1 & 2	CCNA: Networking Basics Applied Tech 1 Media Communications 3D Modeling and Animation Installation and Maintenance of Computers 1 & 2 Home Technology Integrator	CCNA: Networking Basics Applied Tech 1 Home Technology Integrator Installation and Maintenance of Computers 1 & 2
	Elective Courses	Elective Courses	Elective Courses
	Welding 1 & 2 Welding Design and Fabrication CCNA: Networking Basics Introduction to Business Accounting 1	Drafting 1, 2, 3, & 4 Computer Science Introduction to Business Accounting 1	Computer Science Introduction to Business Accounting 1

Manufacturing	Science, Technology, Engineering & Mathematics	Transportation, Distribution & Logistics
Recommended Courses	Recommended Courses	Recommended Courses
Drafting 1, 2, 3 & 4 Applied Tech 1 & 2 Metals Tech 1 & 2 Woods Tech 1, 2, & 3 Welding 1 & 2 Welding Design and Fabrication Installation and Maintenance of Computers 1 & 2 Power Tech 1	Applied Tech 1 & 2 Drafting 1, 2, 3 & 4 Installation and Maintenance of Computers 1 & 2 Welding 1 Power Tech 1 & 2 Media Communications Healthcare Foundations	Drafting 1 Applied Tech 1 & 2 Installation and Maintenance of Computers 1 & 2 Power Tech 1 & 2 Power Tech 3A & 3B
Elective Courses	Elective Courses	Elective Courses
Computer Science Introduction to Business Accounting 1 Power Tech 2 & 3	Computer Science Introduction to Business Accounting 1	Computer Science Introduction to Business Accounting 1
*Other courses directly related to career major		
NOTE: Three credits must come from recommended courses. To complete a career major, students must earn four career-related credits within the major and two math, two science, four English, and two and a half social studies credits.		

APPENDIX VII

REFERENCES

APPENDIX VIII

ADOPTED MATERIALS

Agriculture Education

Business and Marketing

Family and Consumer Science

Industrial Technology

Missoula County Curriculum Consortium
Career and Technical Education-Business Education
Grade Eight Keyboarding and Computer Literacy Course Placement Exam
Draft: April 1, 2006

The *MCCC C&TE Business Education Grade Eight Keyboarding and Computer Literacy Course Placement Exam* is designed to assist teachers, counselors, and students with student placement in Grades 9-12 Business Education courses. Through appropriate placement, student success is facilitated. The exam assists teachers and counselors in determining student skill levels in two areas: (1) Keyboarding, and (2) Computer Applications. The exam consists of two performance assessments (keyboarding and accuracy skill, and computer application), and a fill-in-the-blank assessment of basic computer knowledge. The exam may be updated as needed.

Students will have the opportunity to complete the exam at the end of Grade Seven to allow scheduling in appropriate courses in Grade Eight. Students may also complete the exam at the end of Grade Eight. Students that are not proficient in the skill areas as determined by the exam should consider enrollment in the high school course, "Word Processing I."

The MCPS High School Business Education Curriculum committee is considering proficiency in keyboarding and computer literacy skills (as determined by the exam results and/or completion of Word Processing I) as a requirement for high school graduation.

The exam is designed as follows.

1) **KEYBOARDING:**
   a) Students will attain, through the touch-typing method, a minimum of 30 words per minute with 6 or fewer errors on three, three-minute timed writings of average ability level.
      i) Open Timed-Writing Program
      ii) Complete at least three acceptable timed writings.
      iii) Print a report of each of the three acceptable timed writings.
      iv) Hold these copies to be turned in with the exam.

2) COMPUTER APPLICATIONS: (Questions: Is this timed? What accuracy level is considered to be proficient?)
   a) Open Microsoft Word from the program menu.
   b) Title a page with your first and last name at the top of the page.
   c) Center this title horizontally.
   d) Bold and italicized this title.
   e) Strike the Enter Key twice.
   f) Change the text to double spacing.
   g) Change the text from center alignment to left alignment.
   h) Keyboard a short paragraph about yourself (three or four complete sentences).
   i) Indent the paragraph.
   j) Change the font size of the entire paragraph to 16.

k) Change the color of the entire paragraph to blue.
l) Copy and paste this paragraph a double space below the first copy.
m) Underline the last sentence of this paragraph.
n) Proofread the copy and make corrections using spell check from the tool bar.
o) Save the file to the appropriate folder in the application (Save as a dialog box).
p) Select the specified printer and print the document.

3) <u>BASIC COMPUTER KNOWLEDGE:</u> (Incomplete)

a) Name the hand-held device used to make selections on the computer.
b) Name the TV-like screen that shows the placement of the cursor.
c) Name three devices where you can save your documents.
d) Why do we store information on our H drive (District server)?