

Technology - High School

Concept: Using and Transferring

Standard 1: All students will use and transfer technological knowledge and skills for life roles (i.e., family member, citizen, worker, consumer, lifelong learner).

Benchmark 1: Apply and evaluate emerging technology for use in the home and the impact on the family.

MCF Benchmark: 1.HS.1,2

Analysis of Benchmark

Key Concepts

- Software applications will be used as a tool.
- Technology is used for information management.
- It is important to examine different types of software applications to select the best application for the intended use.

Evidence of Achievement

- Students will create a database which will manage data for a household.
- Students will choose appropriate software to create an end product.

Instructional Activities

- Teachers will model appropriate software applications by using previous student work, working databases, and examples of flawed databases.
- Students will read current periodicals to explore new software products and applications.
- Students will build a database for information management and provide feedback.
- Students will be evaluated based upon the database created.

Curriculum Integration

ELA:MCF 11.HS.1 11.HS.2 11.HS.3

MAT:MCF III.1.HS.2 III.1.HS.3 III.2.HS.5

SOC:MCF IV.1.HS.1

Resources

Appendix: High School – Standard 1

Assessment

Title of Task: Household Management		Grade: High School	
Standard & Benchmark: TEC.1.HS.1			
Assessment Task			
Students create a database using appropriate software for household management.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Check-lists • Spreadsheets • Log/journal 			
Beginning	Developing	Achieving	Exceeding
		<p>Students create a household management spreadsheet which includes check-lists of household responsibilities.</p> <p>Students use logs to organize information gathered from their readings.</p>	

Technology - High School

Concept: Using and Transferring

Standard 1: All students will use and transfer technological knowledge and skills for life roles (i.e., family member, citizen, worker, consumer, lifelong learner).

Benchmark 2: Participate in cooperative research and development projects which study consumer satisfaction of comparable products and services.

MCF Benchmark: 1.HS.3

Analysis of Benchmark

Key Concepts

- Consumer survey reports provide valuable information.
- Surveys can be created to gauge customer satisfaction.

Evidence of Achievement

- Students will form a hypothesis to use as a survey.
- Students will select products to survey.
- Students will gather data to conduct a survey.
- Students will compose a survey and present the findings.

Instructional Activities

- Students will read “Consumers Reports” magazines and other sources.
- Teachers will model clear surveys which compare like products as opposed to surveys that do not compare products of similar attributes.
- Students will produce sample surveys.

Curriculum Integration

ELA:MCF 1.HS.1 3.HS.2 11.HS.1

MAT:MCF III.1.HS.1 III.1.HS.2 III.1.HS.3

SCI:MCF I.1.HS.2

SOC:MCF IV.1.HS.3 IV.4.HS.1 V.2.HS.1,2

Resources

Appendix: High School – Standard 1

Assessment

Title of Task: Consumer Survey		Grade: High School	
Standard & Benchmark: TEC.1.HS.2			
Assessment Task			
Students compose and present a survey of a product or service.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Survey topic • Research and analysis • Presentation 			
Beginning	Developing	Achieving	Exceeding
		<p>Students decide on a survey topic, research, and analyze the topic to create the survey.</p> <p>Students organize and analyze survey results.</p> <p>Students share their findings in an oral and visual presentation.</p>	

Technology - High School

Concept: Using and Transferring

Standard 1: All students will use and transfer technological knowledge and skills for life roles (i.e., family member, citizen, worker, consumer, lifelong learner).

Benchmark 3: Participate in a real world context which uses a technological system for financial transfers.

MCF Benchmark: 1.HS.4

Analysis of Benchmark

Key Concepts

- Banking can be conducted using electronic means.
- Financial indicators are determined by numerous sources.

Evidence of Achievement

- Students will demonstrate use of a checking system using electronic transactions.
- Students will follow and figure interest rates on a savings and loan account.
- Students will develop a budget of income and household debts.
- Students will understand finance fraud and system protection.

Instructional Activities

- Students will research and understand how phone inquiry/transaction systems work.
- Teachers will have speakers present how ATMs and internet based management systems are monitored and work within the consumer's account.
- Teachers will demonstrate a currency conversion website.
- Teachers will lead a discussion of how and why the U.S. dollar value fluctuates and the influences of other countries upon the stock market.

Curriculum Integration

MAT:MCF I.1.HS.2 III.1.HS.2 V.1.HS.2

SCI:MCF II.HS.5

SOC:MCF IV.2.HS.1 IV.3.HS.1 IV.4.HS.4

Resources

Appendix: High School – Standard 1

Assessment

Title of Task: The World of Banking		Grade: High School	
Standard & Benchmark: TEC.1.HS.3			
Assessment Task			
Students develop budgets, follow on-line banking interest rates, and show knowledge of finance fraud and system protection.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Graphs/tables • Flow chart • Process description 			
Beginning	Developing	Achieving	Exceeding
		<p>Students use graphs, tables, and/or flow charts to illustrate budget and interest rate indicators.</p> <p>Students show their knowledge of finance fraud and how the system protections work in a detailed process description.</p>	

Technology - High School

Concept: Using and Transferring

Standard 1: All students will use and transfer technological knowledge and skills for life roles (i.e., family member, citizen, worker, consumer, lifelong learner).

Benchmark 4: Identify a social, civic, or economic issue and propose a technological solution.

MCF Benchmark: 1.HS.5

Analysis of Benchmark

Key Concepts

- On-line safety, hacking, identity theft, and crime are serious technology concerns today.
- Security of websites and use of filtering software are important technology issues.

Evidence of Achievement

- Students will do a presentation of an instance in history of internet crimes.
- Students will present an instance of identify theft or hacking and how the victim could have prevented its occurrence.
- Students will understand internet commerce, safe, and ethical practices.
- Students will practice safe internet conduct using practice and filtering products.

Instructional Activities

- Teachers will model an internet purchase which takes responsibility for taxes and product payment using secure internet practices.
- Teachers will define hacking and show historical examples.
- Teachers will demonstrate antivirus and filtering software and how it works.
- The students will complete a presentation that demonstrates an understanding of technology safety issues.

Curriculum Integration

ELA:MCF 3.HS.1

SCI:MCF I.HS.4

SOC:MCF III.3.HS.1

Resources

Appendix: High School – Standard 1

Assessment

Title of Task: Online Safety		Grade: High School	
Standard & Benchmark: TEC.1.HS.4			
Assessment Task			
Students gain an understanding of internet crimes as well as safe internet practices.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Illustration • Diagram • Research paper 			
Beginning	Developing	Achieving	Exceeding
		<p>Students illustrate and diagram the operation of antivirus and filtering software.</p> <p>Students write a research paper on the history of internet crimes.</p>	

Technology - High School

Concept: Using and Transferring

Standard 1: All students will use and transfer technological knowledge and skills for life roles (i.e., family member, citizen, worker, consumer, lifelong learner).

Benchmark 5: Evaluate present and future job markets in technology related fields.

MCF Benchmark: 1.HS.6

Analysis of Benchmark

Key Concepts

- There are many careers in technology.
- The trend in careers has involved a shift to more technologically oriented jobs.

Evidence of Achievement

- Students will present a chart of how technology is being integrated into today's careers.
- Students will discuss how technology has improved efficiency of the workplace.
- Students will present a career research project.

Instructional Activities

- Teachers will demonstrate brochure elements.
- Students will create a brochure on a chosen career area and present it to an audience.
- Students will outline technology career requirements (e.g., education, certification).

Curriculum Integration

ART:MCF IV.5.HS.1

ELA:MCF 1.HS.2 2.HS.1

SCI:MCF II.HS.3

Resources

Appendix: High School – Standard 1

Assessment

Title of Task: Careers in Technology		Grade: High School	
Standard & Benchmark: TEC.1.HS.5			
Assessment Task			
Students give a presentation on a career in a technology field and its educational requirements.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Presentation • Project 			
Beginning	Developing	Achieving	Exceeding
		Students produce and present a brochure on a chosen career.	

Technology - High School

Concept: Using and Transferring

Standard 1: All students will use and transfer technological knowledge and skills for life roles (i.e., family member, citizen, worker, consumer, lifelong learner).

Benchmark 6: Demonstrate the proper care of technological systems and components.

MCF Benchmark: 1.HS.7

Analysis of Benchmark

Key Concepts

- It is important to maintain the proper documentation of computer systems.
- The proper identification and operation of the CPU and hardware is critical to the effective use of these systems.

Evidence of Achievement

- Students will create a manual on the care and use of a piece of technology.
- Students will demonstrate proper file management and optimization of system operation and install and operate peripheral devices.

Instructional Activities

- Teachers will show hardware components.
- Students will fill out a worksheet identifying the components of a computer including the removal and attachment of a monitor, keyboard, mouse, and cables.
- Teachers will explain proper use and attachment of peripheral devices, such as printers and scanners.
- Students will research computer systems and present a comparison report.
- Students will build a computer they wish to own.
- Students will write a “How-to Manual” on the care of a computer.

Curriculum Integration

ELA:MCF 3.HS.3

SCI:MCF 1.HS.4

SOC:MCF IV.4.HS.1

Resources

Appendix: High School – Standard 1

Assessment

Title of Task: Computer Care		Grade: High School	
Standard & Benchmark: TEC.1.HS.6			
Assessment Task			
Students demonstrate the proper care of hardware and software.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Demonstration • Check-lists • Report 			
Beginning	Developing	Achieving	Exceeding
		<p>Students demonstrate their knowledge of computer parts as well as peripheral devices and their operation.</p> <p>Students use check-lists to perform preventative maintenance.</p> <p>Students write a report on computer systems.</p>	

Technology – High School

Concept: Using Information Technologies

Standard 2: All students will use technologies to input, retrieve, organize, manipulate, evaluate, and communicate information.

Benchmark 1: Use a variety of technology tools for data collection/analysis to support a decision and solve a problem.

MCF Benchmark: 2.HS.1 2.HS.2

Analysis of Benchmark

Key Concepts

- Technological systems are functional tools for organizing data into useful information and are used to enhance learning, increase productivity, and promote creativity.
- Technology provides a variety of media and formats for decision making and problem solving.
- Particular technological systems are appropriate for particular problems.

Evidence of Achievement

- Students will use a word processor, spreadsheet, or presentation software to process information and communicate the information to a specified audience.
- Students will identify the appropriate technology resources/applications to problem solve or make an informed decision.
- Students will describe which technology resource/application would be the most effective for the given task.

Instructional Activities

- The teacher will model the creation of a product to meet a specified need.
- The student chooses appropriate technology then designs and creates a product, service, or system to meet an identified need.
- The student utilizes available technology to improve a system in need of repair or to devise and test ways of improving the effectiveness of a system.
- The student utilizes available technology to plan and organize an event or activity.

Curriculum Integration

ART: MCF V.A.1.HS.4 V.A.5.HS.1

SCI: MCF I.1.HS.5 II.1.HS.3,5

Resources

Appendix: High School Standard 2

Assessment

Title of Task: Technology to Solve A Problem		Grade: High School	
Standard & Benchmark: TEC.2.HS.1			
Assessment Task			
The student completes two of three types of projects.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Appropriate technology • Information 			
Beginning	Developing	Achieving	Exceeding
		<p>Students identify which technology resource/ application would be the most effective for the given task.</p> <p>Students use a word processor, spreadsheet, or presentation software to process information and communicate the information to a specified audience.</p>	

Technology – High School

Concept: Using Information Technologies

Standard 2: All students will use technologies to input, retrieve, organize, manipulate, evaluate, and communicate information.

Benchmark 2: Make informed choices among technology systems and use the appropriate technology device to complete a task.

MCF Benchmark: 2.HS.3

Analysis of Benchmark

Key Concepts

- Information can be stored, retrieved, organized, and manipulated.
- Given a task, there are appropriate technology formats for storing, retrieving, organizing, and manipulating information.
- Information can be communicated as needed.

Evidence of Achievement

- Students will apply appropriate technology formats to report data and information.
- Students will access information and distinguish between acceptable and non-acceptable solutions.
- Students will communicate information using technology.

Instructional Activities

- The teacher will discuss and model how a variety of technology formats can be effectively utilized to store, retrieve, organize, manipulate, and communicate data, information, and ideas.
- The student chooses appropriate technology formats to store, retrieve, organize, manipulate, and communicate data, information, and ideas, in ways that are appropriate to the purpose and audience, through spoken, written, and graphic means of expression.
- Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Curriculum Integration

SCI: MCF II.1.HS.3

Resources

Appendix: High School Standard 2

Assessment

See TEC.2.HS.1

Technology – High School

Concept: Using Information Technologies

Standard 2: All students will use technologies to input, retrieve, organize, manipulate, evaluate, and communicate information.

Benchmark 3: Given a task, assess, and employ information received through technological systems.

MCF Benchmark: 2.HS.4

Analysis of Benchmark

Key Concepts

- Proficient use of technological systems implies evaluating and selecting appropriate information.

Evidence of Achievement

- Students will search and sort information using more than one criterion.
- Students will explain strategies used to locate, select, and evaluate information.

Instructional Activities

- Teachers will lead a discussion about the importance of making an informed decision.
- Teachers will demonstrate credible vs. non-credible resources.
- Teachers will demonstrate the process of decision-making and how technology can be applied.
- Students will research a number of careers and compare/contrast several different aspects of those careers.
- Students will utilize information found to create a database to evaluate the information.

Curriculum Integration

ELA: MCF 1.HS.1 3.HS.6 7.HS.1 10.HS.2 11.HS.2

MAT: MCF III.1.HS.1,2

SCI: MCF II.1.HS.3

SOC: MCF V.1.HS.3

Resources

Appendix: High School Standard 2

Assessment

See TEC.6.HS.1

Technology – High School

Concept: Applying Appropriate Technologies

Standard 3: All students will apply appropriate technologies to critical thinking, creative expression, and decision making skills.

Benchmark 1: Use appropriate technology for problem solving.

MCF Benchmark: 3.HS.1

Analysis of Benchmark

Key Concepts

- Relevant information is obtained from many resources.
- Information must be analyzed for quality, reliability, and credibility.
- Information can enhance the creative process.
- Evaluated information can provide a good basis for sound decision making.

Evidence of Achievement

- Students will analyze and solve problems using appropriate technology.

Instructional Activities

- The teacher will present examples of creatively solved problems.
- The teacher will demonstrate a sample problem.
- The students will solve problems (as groups or as individuals) and receive feedback.
- The students will solve increasingly difficult problems.

Curriculum Integration

ART:MCF V.A.1.HS.1 V.A.1.HS.3 V.A.1.HS.4

ELA:MCF 9.HS.3 10.HS.2 11.HS.2

MAT:MCF I.2.HS.1 III.3.HS.3

SCI:MCF I.1.HS.4

SOC:MCF V.1.HS.2

Resources

Appendix: High School Standard 3

Assessment

See TEC.4.HS.7

Technology – High School

Concept: Applying Appropriate Technologies

Standard 3: All students will apply appropriate technologies to critical thinking, creative expression, and decision making skills.

Benchmark 2: Demonstrate the use of multimedia software for reaching a diverse audience.

MCF Benchmark: 3.HS.2

Analysis of Benchmark

Key Concepts

- Multimedia software may be used to research and present information.
- It is important to use the most effective technology tool to reach the target audience.

Evidence of Achievement

- Students will identify and use a full range of informational sources to reach a pre-determined audience.
- Students will create and present a multimedia/multidisciplinary project.

Instructional Activities

- The teacher will discuss software packages.
- The teacher will discuss audience, purpose of presentation, and provide sample situations.
- Students will work in small groups to create and present a multimedia project.
- Students will publish their completed multimedia projects.

Curriculum Integration

ART:MCF V.A.1.HS.1 V.A.2.HS.6

ELA:MCF 3.HS.1 11.HS.4 12.HS.1

MAT:MCF III.2.HS.1

SCI:MCF I.1.HS.5

Resources

Appendix: High School Standard 3

Assessment

See TEC.4.HS.1

Technology – High School

Concept: Applying Appropriate Technologies

Standard 3: All students will apply appropriate technologies to critical thinking, creative expression, and decision making skills.

Benchmark 3: Evaluate and organize data in a logical process.

MCF Benchmark: 3.HS.3 3.HS.4

Analysis of Benchmark

Key Concepts

- A logical process must be followed to organize data and make decisions.

Evidence of Achievement

- Students will create charts and tables.
- Students will present data in an organized manner.
- Students will form judgments on quality of data.

Instructional Activities

- The teacher will model creation of charts and tables.
- The teacher will demonstrate logical presentation of data.
- Students will construct charts and tables to present data in an organized manner.

Curriculum Integration

ELA:MCF 1.HS.1

MAT:MCF I.1.HS.1,2 III.1.HS.1,2 III.2.HS.1

SOC:MCF V.2.HS.1

Resources

Appendix: Standard Software List, High School – Standard 3

Assessment

Title of Task: Data Organization and Evaluation		Grade: High School	
Standard & Benchmark: TEC.3.HS.3			
Assessment Task			
Students construct charts and tables to present data in an organized manner.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Checklist • Charts/tables • Demonstration 			
Beginning	Developing	Achieving	Exceeding
		<p>Students construct charts or tables following a given checklist of organizational methods.</p> <p>Students demonstrate their understanding of organization by presenting their information.</p>	

Technology - High School

Concept: Employing Systematic Approach

Standard 4: All students will employ a systematic approach to technological solutions by using resources and processes to create, maintain and improve products, systems, and environments.

Benchmark 1: Design and construct technological systems that exhibit continuous improvement.

MCF Benchmark: 4.HS.1

Analysis of Benchmark

Key Concepts

- Technology is a lifelong process.
- There are a variety of software packages available.
- There are a variety of technology peripherals.
- Software and peripheral devices serve different purposes.
- Microsoft Office can assist in daily activities.

Evidence of Achievement

- Students will utilize different software packages and peripheral devices.
- Students will use Microsoft Office and/or other design software packages.
- Students will produce professional desktop publishing documents.
- Students will create multimedia presentations.

Instructional Activities

- The teacher will demonstrate/display completed work of previous students.
- The teacher will discuss and evaluate samples with students.
- The teacher will demonstrate how to use software packages.
- The teacher will demonstrate how to use technology peripherals.
- Students will complete sample exercises in utilizing software and peripherals which will include teacher feedback.
- Students will complete individual activities using software and peripherals.

Curriculum Integration

ART:MCF V.A.1.HS.1,4 V.A.2.HS.6

ELA:MCF 1.HS.1,2,3,5 3.HS.1,2,3,4,5,6 7.HS.1,2,3,4 10.HS.2

SCI:MCF I.1.HS.4 II.1.HS.5,7

SOC:MCF V.1.HS.1,2

Resources

Appendix: High School - Standard 4

Assessment

Title of Task: Multimedia Presentation		Grade: High School	
Standard & Benchmark: TEC.4.HS.1			
Assessment Task			
Students create and publish a multimedia presentation for a diverse audience.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Layout/design • Professional appearance • Target audience • Technology utilization 			
Beginning	Developing	Achieving	Exceeding
		<p>Students use a variety of software packages and peripheral devices (e.g., digital camera, scanner, or digital camcorder) to create a multimedia presentation.</p> <p>Students use layout/design techniques to create and publish a professional multimedia presentation for a diverse audience.</p>	

Technology - High School

Concept: Employing Systematic Approach

Standard 4: All students will employ a systematic approach to technological solutions by using resources and processes to create, maintain and improve products, systems, and environments.

Benchmark 2: Create working drawings from sketches to meet appropriate industrial standards.

MCF Benchmark: 4.HS.2

Analysis of Benchmark

Key Concepts

- There are industrial standards that continue to change.
- Keeping current with industrial standards is vital for success.
- There are manual tools available.
- There are software packages available.
- Accuracy is essential.

Evidence of Achievement

- Students will gain knowledge of industrial standards and the continuous changes that occur.
- Students will utilize a variety of resources in order to keep current with industrial standards.
- Students will create a “How to Manual”.
- Students will create manual sketches.
- Students will complete accurate manual and electronic drawings.

Instructional Activities

- The teacher will demonstrate/display completed work of previous students while stressing the importance of accuracy.
- The teacher will discuss and evaluate samples with students.
- The teacher will discuss industrial standards and the need for remaining current with the standards.
- The teacher will demonstrate how various skills would be utilized in a working environment.
- Students will complete sample exercises in utilizing software packages and manual tools available which will include teacher feedback.
- Students will complete accurate individual activities using software packages and manual tools.

Curriculum Integration

ART:MCF V.A.1.HS.1,2,4 V.A.2.HS.6

ELA:MCF 1.HS.1,2,3,5 2.HS.1,2,3,4 3.HS.1,2,3,4,5,6 7.HS.1,2,3,4 8.HS.1,3,4
10.HS.2

MAT:MCF II.1.HS.4,7

SCI:MCF I.1.HS.3,4

SOC:MCF V.2.HS.1 VI.1.HS.1,2

Resources

Appendix: High School - Standard 4

Assessment

Title of Task: Manual and Electronic Drawings		Grade: High School	
Standard & Benchmark: TEC.4.HS.2			
Assessment Task			
Students complete accurate manual and electronic drawings.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Accuracy • Completeness • Checklist 			
Beginning	Developing	Achieving	Exceeding
		<p>Students show an understanding of a variety of manual tools using a checklist.</p> <p>Students complete accurate manual drawings utilizing a variety of manual tools.</p> <p>Students complete accurate electronic drawings using a variety of software packages (e.g., Microsoft Paint, Microsoft Word, CAD).</p>	

Technology - High School

Concept: Employing Systematic Approach

Standard 4: All students will employ a systematic approach to technological solutions by using resources and processes to create, maintain and improve products, systems, and environments.

Benchmark 3: Utilize and transfer measurements of dimension and capacity as criteria to produce and evaluate technological solutions to problems.

MCF Benchmark: 4.HS.3 4.HS.4

Analysis of Benchmark

Key Concepts

- There are a variety of manual and electronic measurement tools available.
- Problem-solving skills are vital.
- Utilizing problem-solving skills to evaluate dimension and capacity.
- Technology can be utilized to solve problems.

Evidence of Achievement

- Students will gain knowledge of manual and electronic measurement tools.
- Students will develop problem-solving skills.
- Students will evaluate technological solutions.
- Students will utilize technology to solve problems.

Instructional Activities

- The teacher will demonstrate/display completed work of previous students while stressing the importance of accuracy.
- The teacher will discuss and evaluate samples with students.
- The teacher will discuss and demonstrate measurement tools and the need for keeping up-to-date with current tools available.
- Students will complete sample exercises in utilizing software packages and measurement tools available which will include teacher feedback.
- Students will utilize problem solving skills while completing individual activities using technology and measurement tools.

Curriculum Integration

ART:MCF V.A.1.HS.2,4 V.A.2.HS.6

ELA:MCF 1.HS.1,2,3,5 2.HS.1,2,3,4 3.HS.1,2,3,4,5,6 7.HS.1,2,3,4 8.HS.1,3,4
10.HS.2

MAT:MCF II.1.HS.1,4 II.3.HS.1,2,3,4,5,6 III.1.HS.2,4 III.2.HS.1 V.2.HS.2

SCI:MCF II.1HS.3

Resources

Appendix: High School - Standard 4

Assessment

See TEC.4.HS.4

Technology - High School

Concept: Employing Systematic Approach

Standard 4: All students will employ a systematic approach to technological solutions by using resources and processes to create, maintain and improve products, systems, and environments.

Benchmark 4: Design, produce, analyze, and evaluate products addressing given technological problems while using industrial tools, materials, equipment, and processes.

MCF Benchmark: 4.HS.5 4.HS.7

Analysis of Benchmark

Key Concepts

- Industrial tools, materials, and equipment can be utilized to solve problems.
- Students can learn to plan, design, produce, and evaluate a prototype.

Evidence of Achievement

- Students will apply knowledge of industrial tools, materials, and equipment.
- Students will plan, design, and produce a prototype.
- Students will demonstrate problem solving techniques.
- Students will evaluate their prototype in order to address any potential technological problems.

Instructional Activities

- The teacher will demonstrate/display completed work of previous students.
- The teacher will discuss and evaluate samples with students.
- The teacher will discuss and demonstrate troubleshooting techniques which might be encountered while planning, designing, and producing prototypes.
- Students will complete sample exercises in planning, designing, and developing a prototype which will include teacher feedback.
- Students will utilize problem solving skills to evaluate individual prototype designs.

Curriculum Integration

ART:MCF V.A.1.HS.1,4 V.A.2.HS.5,6

ELA:MCF 1.HS.1,2,3,5 2.HS.1,2,3,4 3.HS.1,2,3,4,5,6 7.HS.1,2,3,4 8.HS.1,3,4
10.HS.2

MAT:MCF II.1.HS.4,5,6,7 II.3.HS.1,2,4,6 V.2.HS.5 VI.6.HS.1

Resources

Appendix: High School - Standard 4

Assessment

Title of Task: Prototype		Grade: High School	
Standard & Benchmark: TEC.4.HS.3,4			
Assessment Task			
Students plan, design, produce and evaluate a prototype.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Checklist • Drawing • Model • Process description 			
Beginning	Developing	Achieving	Exceeding
		<p>Students plan a prototype (e.g., house, skyscraper, town, bridge) by following a checklist.</p> <p>Students design a prototype by completing a manual/electronic drawing.</p> <p>Students produce and evaluate a prototype by constructing a model and providing a written description of the process.</p>	

Technology - High School

Concept: Employing Systematic Approach

Standard 4: All students will employ a systematic approach to technological solutions by using resources and processes to create, maintain and improve products, systems, and environments.

Benchmark 5: Investigate, analyze, and assess potential safety hazards, establish guidelines for safe behavior, and adhere to common safety practices while around or participating in the technological solution to a problem.

MCF Benchmark: 4.HS.6

Analysis of Benchmark

Key Concepts

- Strict safety guidelines need to be adhered to at all times.
- Analyzing and evaluating potential safety hazards is critical.
- Adhering to common safety practices while generating solutions to technological problems is necessary.

Evidence of Achievement

- Students will use common safety guidelines at all times.
- Students will evaluate their work area for potential hazards.
- Students will apply safety practices while solving technological problems.

Instructional Activities

- The teacher will demonstrate safety guidelines to students.
- The teacher will discuss and evaluate potential safety hazards.
- Students will practice common safety practices which will include teacher feedback.
- Students will utilize common safety practices while completing individual projects.

Curriculum Integration

ELA:MCF 1.HS.1,2,3,5 2.HS.1,2,3,4 3.HS.1,2,3,4,5,6 7.HS.1,2,3,4 8.HS.1,3,4
10.HS.2 11.HS.1

SCI:MCF II.1.HS.5 IV.1.HS.1

Resources

Appendix: High School - Standard 4

Assessment

Title of Task: Safety First		Grade: High School	
Standard & Benchmark: TEC.4.HS.5			
Assessment Task			
Students use common safety guidelines at all times.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Checklist • Demonstration 			
Beginning	Developing	Achieving	Exceeding
		Students demonstrate their knowledge of safety practices by following a checklist of guidelines.	

Technology – High School

Concept: Employing Systematic Approach

Standard 4: All students will employ a systematic approach to technological solutions by using resources and processes to create, maintain and improve products, systems, and environments.

Benchmark 6: Evaluate the situation and adapt according to the needs and values of individuals, groups, society, and the environment when designing/redesigning problem solutions and creating a quality end product.

MCF Benchmark: 4.HS.8

Analysis of Benchmark

Key Concepts

- Designs need to be adapted and redesigned to meet the needs of individuals.
- Individuals expect a quality end product.

Evidence of Achievement

- Students will design a product.
- Students adapt a quality end product to meet the needs of the individuals.

Instructional Activities

- The teacher will demonstrate/display completed work of previous students.
- The teacher will discuss and evaluate samples with students.
- The teacher will discuss and demonstrate how to adapt and redesign products to meet the needs of individuals.
- Students will complete sample exercises in adapting and redesigning products which will include teacher feedback.
- Students will produce and modify a quality end product.

Curriculum Integration

ART:MCF V.A.1.HS.1,4 V.A.2.HS.6

ELA:MCF 1.HS.1,2,3,5 2.HS.1,2,3,4 3.HS.1,2,3,4,5,6 7.HS.1,2,3,4 8.HS.1,3,4
10.HS.2 11.HS.1,2,3 12.HS.5

MAT:MCF II.1.HS.6,7

SCI:MCF IV.3.HS.1,2

SOC.MCF V.1.HS.1,2,3 V.2.HS.1 VI.1.HS.1

Resources

Appendix: High School - Standard 4

Assessment

Title of Task: Quality is Job One		Grade: High School	
Standard & Benchmark: TEC.4.HS.6			
Assessment Task			
Students adapt a quality end product to meet the needs of the individuals.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Checklist • Drawing • Revised drawing 			
Beginning	Developing	Achieving	Exceeding
		<p>Students complete drawing to specifications according to a given checklist.</p> <p>Students modify their drawings to meet the needs of set conditions (e.g., ADA compliance, geographic building code requirements).</p>	

Technology - High School

Concept: Employing Systematic Approach

Standard 4: All students will employ a systematic approach to technological solutions by using resources and processes to create, maintain and improve products, systems, and environments.

Benchmark 7: Analyze and evaluate resources and processes to choose the best combination to create a technological solution to a problem.

MCF Benchmark: 4.HS.9

Analysis of Benchmark

Key Concepts

- Analysis of resources is necessary to choose the best resources for problem solving.
- Evaluation of resources is needed in order to choose the best solution.

Evidence of Achievement

- Students will analyze and evaluate available resources.
- Students will utilize problem solving skills in order to choose the best resources.

Instructional Activities

- Teachers will demonstrate/display completed work of previous students.
- Teachers will discuss and evaluate samples with students.
- Teachers will discuss and demonstrate how to analyze and evaluate resources.
- Students will complete sample exercises in analyzing and evaluating resources which will include teacher feedback.
- Students will apply analytical and evaluation skills in order to choose the best resources.

Curriculum Integration

ELA:MCF 1.HS.1,2,3,5 2.HS.1,2,3,4 3.HS.1,2,3,4,5,6 7.HS.1,2,3,4 8.HS.1,3,4
10.HS.2

MAT:MCF II.1.HS.6,7

Resources

Appendix: High School - Standard 4

Assessment

Title of Task: Problem Solving		Grade: High School	
Standard & Benchmark: TEC.4.HS.7			
Assessment Task			
Students use appropriate technology to analyze and solve problems. Students employ technology in the development of strategies for solving problems in the real world.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Chart • Discussion/observation • Process description 			
Beginning	Developing	Achieving	Exceeding
		<p>Students write an essay to describe the process of problem solving.</p> <p>Students complete a chart of problem solving strategies (e.g., define, analyze, solve, evaluate).</p> <p>Students demonstrate a complete understanding of real world problem solving through discussion and teacher observation.</p>	

Technology - High School

Concept: Applying Standards

Standard 5: All students will apply ethical and legal standards in planning, using, and evaluating technology.

Benchmark 1: Use ethical behavior as it relates to privacy issues, copyright, licensing, and the use of networks.

MCF Benchmark: 5.HS.1 5.HS.2

Analysis of Benchmark

Key Concepts

- Legal and ethical guidelines for the use of technology information must be followed.
- Rights of copyright holders must be respected.
- Sources must be cited.
- Students must respect network and e-mail passwords.
- There are secured/unsecured websites.
- There are privacy issues in citizenship and consumerism.

Evidence of Achievement

- Students will create a report properly citing sources while demonstrating an understanding of copyright laws.
- Students will log on to their network files using secure passwords.
- Students will use e-mail for educational purposes, keeping personal information confidential for on-line safety.

Instructional Activities

- The teacher will demonstrate proper and ethical uses of technology.
- The teacher will discuss copyright laws with the students.
- Students will use technology in a lawful and ethical manner.

Curriculum Integration

ART:MCF V.A.4.HS.4 V.A.5.HS.1

ELA:MCF 9.HS.2 11.HS.1 12.HS.5

MAT:MCF VI.1.HS.3

SCI:MCF I.1.HS.5

Resources

Appendix: High School – Standard 5

Assessment

Title of Task: Ethical Issues		Grade: High School	
Standard & Benchmark: TEC.5.HS.1			
Assessment Task			
Students produce a report, with proper citations, on a current technological ethics issue.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Relevant issue • Well-developed topic • Properly cited sources 			
Beginning	Developing	Achieving	Exceeding
		<p>Students choose a current technological issue that is relevant and presents an ethical dilemma.</p> <p>Students develop and support the topic they have chosen.</p> <p>Students properly credit all sources.</p>	

Technology – High School

Concept: Applying Standards

Standard 5: All students will apply ethical and legal standards in planning, using, and evaluating technology.

Benchmark 2: Practice ethical and legal decision-making in all aspects of technology use.

MCF Benchmark: 5.HS.3

Analysis of Benchmark

Key Concepts

- Technology has both advantages and disadvantages.
- Widespread technology reliance can create legal and ethical problems.
- There are strategies for identifying and applying ethical and legal solutions to technological dilemmas.

Evidence of Achievement

- Students will apply legal and ethical standards to the problem-solving process.
- Students will compare/contrast technology solutions and select the appropriate method for completing a given project.

Instructional Activities

- The teacher will model ethical decision making.
- The teacher will provide guided opportunities for the students to solve problems.
- The students will find ethical and lawful solutions to problems.

Curriculum Integration

ART:MCF V.A.4.HS.4

ELA:MCF 9.HS.2 10.HS.2 11.HS.1 12.HS.5

SCI:MCF I.1.HS.4

SOC:MCF VII.1.HS.1

Resources

Appendix: High School – Standard 5

Assessment

Title of Task: Applying Legal and Ethical Standards		Grade: High School	
Standard & Benchmark: TEC.5.HS.2			
Assessment Task			
Students choose an appropriate response to a legal or ethical dilemma, and outline a method by which the problem can be solved.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Respond • Outline • Solve 			
Beginning	Developing	Achieving	Exceeding
		<p>Students respond to a legal or ethical technological dilemma.</p> <p>Students outline the method to be used for solving the problem.</p> <p>Students present a solution that demonstrates an understanding of the legal and ethical ramifications of the solution.</p>	

Technology - High School

Concept: Applying Standards

Standard 5: All students will apply ethical and legal standards in planning, using, and evaluating technology.

Benchmark 3: Analyze social and legal issues that affect technology.

MCF Benchmark: 5.HS.4

Analysis of Benchmark

Key Concepts

- Unethical uses of technology have consequences.
- Hacking, piracy, and intentional virus setting are unethical uses of technology.
- There are social responsibilities in the use of technology.

Evidence of Achievement

- Students will complete a content-related project analyzing ethics and social responsibility in technology.

Instructional Activities

- The teacher will model ethical uses of technology.
- The teacher will provide students with opportunities to develop social responsibility.
- Students will complete a variety of content related projects analyzing the implications of technology in society.

Curriculum Integration

ART:MCF V.A.4.HS.4

ELA:MCF 1.HS.1 9.HS.1,2 11.HS.3 12.HS.5

SCI:MCF II.1.HS.5

SOC:MCF VI.2.HS.1 VII.1.HS.1

Resources

Appendix: High School – Standard 5

Assessment

Title of Task: Social and Legal Issues		Grade: High School	
Standard & Benchmark: TEC.5.HS.3			
Assessment Task			
Students create a content-related project analyzing ethics and social responsibility in technology.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Project • Content connections • Ethics/social responsibility • Sources 			
Beginning	Developing	Achieving	Exceeding
		<p>Students create a project that supports a position on an ethical issue.</p> <p>Students draw connections between the technological issue and the content area being taught.</p> <p>Students discuss and defend a socially responsible position on a topic.</p> <p>Students properly credit all sources.</p>	

Technology – High School

Concept: Applying Standards

Standard 5: All students will apply ethical and legal standards in planning, using, and evaluating technology.

Benchmark 4: Find solutions that relate to ethical uses of technology.

MCF Benchmark: 5.HS.5

Analysis of Benchmark

Key Concepts

- Problems must be solved in an ethical manner.
- Technology tools allow many options for problem-solving.

Evidence of Achievement

- Students will create a content specific project demonstrating ethical decision making.
- Students will compare technology tools and choose those that enhance ethical decision making.

Instructional Activities

- The teacher will provide a variety of technology-related experiences.
- The teacher will model ethical problem-solving.
- The students will practice ethical decision-making.
- The students will compare and contrast publicized decisions as they relate to technology (current events).

Curriculum Integration

ART:MCF V.A.4.HS.4

ELA:MCF 3.HS.6 9.HS.1,2,3 10.HS.2 11.HS.2 12.HS.5

SCI:MCF I.1.HS.4

SOC:MCF I.3.HS.2 VI.2.HS.1 VII.1.HS.1

Resources

Appendix: High School - Standard 5

Assessment

Title of Task: Solving Content-Related Problems Using Technology		Grade: High School	
Standard & Benchmark: TEC.5.HS.4			
Assessment Task			
Students formulate a solution to a content-specific project by applying technology in an ethical manner.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Formulate solution • Use of technology • Ethical and legal uses 			
Beginning	Developing	Achieving	Exceeding
		<p>Students decide on a solution to a problem.</p> <p>Students demonstrate how technology can be used to solve the problem.</p> <p>Students demonstrate an understanding of the legal and ethical uses of technology.</p>	

Technology – High School

Concept: Applying Standards

Standard 5: All students will apply ethical and legal standards in planning, using, and evaluating technology.

Benchmark 5: Synthesize lifelong connections between personal and business ethics.

MCF Benchmark: 5.HS.6 5.HS.7

Analysis of Benchmark

Key Concepts

- Business and personal ethical behaviors are relational.
- Responsible behaviors must guide the use of technology.
- Technology will likely be needed in any career chosen.
- Technology will impact them throughout their lives.

Evidence of Achievement

- Students will demonstrate a responsible use of the available technology.
- Students will use software, freeware, and shareware ethically.
- Students will abide by an acceptable use policy as it applies to their school.
- Students will create a project to analyze and predict the possible future impact of technology for career and personal use.

Instructional Activities

- The teacher will model and support appropriate technology choices.
- The teacher will provide direct instruction of responsible behaviors.
- Students will demonstrate mastery of ethical concepts by making ethical and responsible choices.

Curriculum Integration

ELA:MCF 4.HS.1 9.HS.1,2,3 10.HS.2 12.HS.5

SOC:MCF VII.1.HS.1

Resources

Appendix: High School – Standard 5

Assessment

Title of Task: Technology for Life		Grade: High School	
Standard & Benchmark: TEC.5.HS.5			
Assessment Task			
Students create a project analyzing the impact of technology on themselves and predicting future implications of technology.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Appropriate media • Analysis • Projection • Sources 			
Beginning	Developing	Achieving	Exceeding
		<p>Students choose an appropriate technology as a platform for this project.</p> <p>Students analyze the impact of technology as it relates to their personal and professional life.</p> <p>Students project and predict the likely ramifications of technology in career choices.</p> <p>Students properly credit all sources.</p>	

Technology – High School

Concept: Evaluating and Forecasting

Standard 6: All students will evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Benchmark 1: Analyze, evaluate, and forecast the effects of current technology on one’s personal and occupational goals.

MCF Benchmark: 6.HS.1 6.HS.2

Analysis of Benchmark

Key Concepts

- Technology has a considerable impact on personal and occupational decisions.
- There is a need for life-long technological learning.

Evidence of Achievement

- Students will explain the relationships of technology to personal and occupational goal setting.
- Students will demonstrate knowledge of changes in technology and the effect those changes have on the workplace and society.

Instructional Activities

- Teacher demonstrates career assessment technology tools.
- Student utilizes career assessment technology tools.
- Using technology tools:
 - teacher models a career/education development plan.
 - student analyzes careers by looking at salary, benefits, job requirements, educational requirements, employment outlook, the effect of technology on the workplace/society, etc.
 - student prepares a career/education development plan.

Curriculum Integration

SCI: MCF II.1.HS.2,3,4,6 II.2.HS.5

Resources

Appendix: High School - Standard 6

Assessment

Title of Task: Career Choices		Grade: High School	
Standard & Benchmark: TEC.6.HS.1			
Assessment Task			
Students prepare a career and/or educational development plan.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Data collection • Data organization and evaluation • “Career Education Development Plan” 			
Beginning	Developing	Achieving	Exceeding
		<p>Students use career assessment technologies to collect and evaluate data for potential career choices.</p> <p>Students use appropriate software to organize and evaluate collected data.</p> <p>Students prepare a career/education development plan using career assessment technology.</p>	

Technology – High School

Concept: Evaluating and Forecasting

Standard 6: All students will evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Benchmark 2: Evaluate the influence of technological developments on national and international issues.

MCF Benchmark: 6.HS.3 6.HS.8 6.HS.9

Analysis of Benchmark

Key Concepts

- Contemporary and emerging technologies affect national and international issues.
- Technological innovations have transformed human development.
- Various cultures have developed a wide variety of technological innovations.

Evidence of Achievement

- Students will demonstrate knowledge of common uses of technology used around the world and their impact on national and international issues.
- Students will identify capabilities and limitations of contemporary and emerging technology resources and assess the potential of these systems and services to address personal, life-long learning, and workplace needs.
- Students will explain how and why different cultures developed various technological innovations.

Instructional Activities

- Teacher led discussion:
 - how a variety of cultures' history and politics can/have influenced technological innovations.
 - common uses of technologies used around the world.
 - capabilities and limitations of contemporary and emerging technologies.
- Using technology research tools and word processing techniques, students will produce an appropriately formatted report in which they:
 - describe how/why a variety of cultures developed various technologies.
 - explain and analyze the common uses of technologies used around the world.
 - assess the capabilities/limitations and the potential use of contemporary and emerging technologies.

Curriculum Integration

ELA: MCF 3.HS.1,6,7,8 7.HS.1 10.HS.2 11.HS.2

SCI: MCF I.1.HS.7, 8 II.1.HS.3, 4 II.2.HS.5 II.3.HS.1, 3

SOC: MCF I.2.HS.3 V.1.HS.1,2,3

Resources

Appendix: High School - Standard 6

Assessment

Title of Task: The Influence of Technologies		Grade: High School	
Standard & Benchmark: TEC.6.HS.2			
Assessment Task			
Students will produce an appropriately formatted research report.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Description • Uses of technologies • Capabilities/limitations 			
Beginning	Developing	Achieving	Exceeding
		<p>Students describe common uses of technology used around the world and their impact on national and international issues.</p> <p>Students explain how and why different cultures developed various technologies.</p> <p>Students identify and assess capabilities/limitations of contemporary and emerging technologies.</p>	

Technology – High School

Concept: Evaluating and Forecasting

Standard 6: All students will evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Benchmark 3: Utilize forecasting and assessment technology in predicting trends and future directions of technology.

MCF Benchmark: 6.HS.4 6.HS.7 6.HS.8

Analysis of Benchmark

Key Concepts

- Current technologies may impact individuals in future societies.
- The impact of current technology trends on future societies can be forecasted and assessed.

Evidence of Achievement

- Students will propose or model possible future solutions, trends, or applications of technology.
- Students will develop a solution based on the analysis of information and usable data.
- Students will demonstrate the ability to access information in a variety of ways.
- Students will complete an individual project such as an Internet Scavenger Hunt, a Technology Timeline, or a Futuristic Digital Home Prototype.

Instructional Activities

- Teacher will demonstrate technology trends.
- Teacher will lead discussion about the impact of technology on society.
- Students will research the history of technology using a variety of methods.
- Students will complete individual activities while using a variety of technologies.

Curriculum Integration

ELA: MCF 3.HS.1,6,7,8 7.HS.1 10.HS.2 11.HS.2

SCI: MCF I.1.HS.7,8 II.1.HS.3,4 II.2.HS.5 II.3.HS.1,3

SOC: MCF I.2.HS.3 V.1.HS.1,2,3

Resources

Appendix: High School - Standard 6

Assessment

Title of Task: Future Directions of Technology		Grade: High School	
Standard & Benchmark: TEC.6.HS.3			
Assessment Task			
Students complete an individual project.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Development of a solution • Proposal of a solution • Ability to access information 			
Beginning	Developing	Achieving	Exceeding
		<p>Students develop a solution based on the analysis of information and usable data.</p> <p>Students propose possible future solutions, trends, or applications of technology.</p> <p>Students demonstrate the ability to access information in a variety of ways.</p>	

Technology – High School

Concept: Evaluating and Forecasting

Standard 6: All students will evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Benchmark 4: Understand the concept of technology and the importance of its use in extending human capabilities.

MCF Benchmark: 6.HS.5 6.HS.6

Analysis of Benchmark

Key Concepts

- Technology is the application of knowledge for practical purposes.
- Technology extends human capabilities.

Evidence of Achievement

- Students will explain the concept of technology.
- Students will explain how technology extends human capabilities.
- Students will demonstrate the implications of using a particular technology.

Instructional Activities

- The teacher will discuss the concept of technology and its power to extend human capabilities.
- The teacher models the nature and operation of technology systems.
- Students explain the concept of technology and illustrate its ability to extend human capabilities.
- Students demonstrate the nature and operation of technology systems.

Curriculum Integration

ELA: MCF 3.HS.1 9.HS.1

SCI: MCF I.1.HS.1,4,7,8 II.1.HS.2,3,4,6 II.2.HS.5 II.3.HS.1,3

Resources

Appendix: High School - Standard 6

Assessment

Title of Task: Concept Essay		Grade: High School	
Standard & Benchmark: TEC.6.HS.4			
Assessment Task			
Students write an essay explaining concepts of technology.			
Scoring Guide Criteria			
<ul style="list-style-type: none"> • Technology explanation • Nature and operation description • Extended capabilities 			
Beginning	Developing	Achieving	Exceeding
		<p>Students explain the concept of technology.</p> <p>Students describe the nature and operation of technology systems.</p> <p>Students illustrate technology’s ability to extend human capabilities.</p>	