

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: K-2

Topic 1: Creativity/Innovation

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology?

Standard	Skills/Concepts/Dispositions
A. Apply existing knowledge to generate new ideas, products, or processes	<ul style="list-style-type: none">• Solve problems in new and innovative ways• Use prior knowledge to discover patterns, ask questions, and generate new ideas• Brainstorm• Use humor, figurative language, puns, proverbs, idioms, etc.• Solve lateral thinking problems• Use creativity and originality
B. Create original works as a means of personal or group expression	<ul style="list-style-type: none">• Use visual and multimedia to tell stories or relay information• Use pictures to track a storyline• Use sequencing• Use glyphs
C. Use models and simulations to explore complex systems and issues	<ul style="list-style-type: none">• Connect abstract ideas to concrete experiences• Use simulations• Use manipulatives• Do experiments
D. Identify trends and forecast possibilities	<ul style="list-style-type: none">• Use patterns• Make predictions and inferences• Use probability• Use graphing

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: K-2

Topic 1: Creativity/Innovation (continued)

- **Example learning activities involving technology and digital resources for Creativity/Innovation:**
 - Illustrate and communicate original ideas and stories using digital tools and media-rich resources
 - Identify, research, and collect data on an environmental issue using digital resources and propose a developmentally appropriate solution
 - In a collaborative work group, use a variety of technologies to produce a digital presentation or product in a curriculum area
 - Use simulations and graphical organizers to explore and depict patterns of growth such as the life cycles of plants and animals

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: K-2

Topic 2: Communication and Collaboration

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others?

Standard	Skills/Concepts/Dispositions
A. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media	<ul style="list-style-type: none">• Collaborate with others to broaden and deepen understanding• Participate in collaborative conversations• Recognize the author’s purpose or message
B. Communicate information and ideas effectively to multiple audiences using a variety of media and formats	<ul style="list-style-type: none">• Communicate appropriately to support individual learning and the learning of others
C. Develop cultural understanding and global awareness by engaging with learners of other cultures	<ul style="list-style-type: none">• Read, review, and listen to a variety of multicultural texts and media
D. Contribute to project teams to produce original works or solve problems	<ul style="list-style-type: none">• Contribute to group projects• Actively participate in assigned roles

- **Example learning activities involving technology and digital resources for Communication and Collaboration:**
 - Illustrate and communicate original ideas and stories using digital tools and media-rich resources
 - Engage in learning activities with learners from multiple cultures through e-mail and other electronic media
 - In a collaborative work group, use a variety of technologies to produce a digital presentation or product in a curriculum area

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: K-2

Topic 3: Research and Information Fluency

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I apply digital tools to gather, evaluate and use information?

Standard	Skills/Concepts/Dispositions
A. Plan strategies to guide inquiry	<ul style="list-style-type: none">• Brainstorm and ask questions about a research topic• Connect to prior knowledge• Use KWL
B. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media	<ul style="list-style-type: none">• Read, view, and/or listen to locate information• Collect and organize information• Effectively use traditional reference sources – both print and digital• Make basic inferences• Determine relevance and importance of information• Use basic note taking (grade 2)<ul style="list-style-type: none">○ Categorize○ Find patterns○ Answer research question○ Use graphic organizers
C. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks	<ul style="list-style-type: none">• Choose and evaluate selected resources• List references
D. Process data and report results	<ul style="list-style-type: none">• Reflect upon learning• Create a product or presentation to communicate what was learned• Develop visual displays as individuals and groups

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: K-2

Topic 3: Research and Information Fluency (continued)

- **Example learning activities involving technology and digital resources for Research and Information Fluency:**
 - Identify, research, and collect data on an environmental issue using digital resources and propose a developmentally appropriate solution
 - Find and evaluate information related to a current or historical person or event using digital resources
 - Use simulations and graphical organizers to explore and depict patterns of growth such as the life cycles of plants and animals

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: K-2

Topic 4: Critical Thinking, Problem Solving, and Decision Making

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources?

Standard	Skills/Concepts/Dispositions
A. Identify and define authentic problems and significant questions for investigation	<ul style="list-style-type: none">• Explore real world issues• Ask questions to aid in solving problems
B. Plan and manage activities to develop a solution or complete a project	<ul style="list-style-type: none">• Pose questions• Evaluate information
C. Collect and analyze data to identify solutions and/or make informed decisions	<ul style="list-style-type: none">• Activate prior knowledge• Develop evidence based conclusions
D. Use multiple processes and diverse perspectives to explore alternative solutions	<ul style="list-style-type: none">• Solve problems using multiple strategies• Respect diverse opinions• Develop evidence based and ethical conclusions

- **Example learning activities involving technology and digital resources for Critical Thinking, Problem Solving, and Decision Making:**
 - Identify, research, and collect data on an environmental issue using digital resources and propose a developmentally appropriate solution
 - Use simulations and graphical organizers to explore and depict patterns of growth such as the life cycles of plants and animals
 - Independently apply digital tools and resources to address a variety of tasks and problems

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: K-2

Topic 5: Digital Citizenship

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I understand human, cultural, and societal issues related to technology and practice legal and ethical behavior?

Standard	Skills/Concepts/Dispositions
A. Advocate and practice safe, legal, and responsible use of information and technology	<ul style="list-style-type: none">• Demonstrate proper care and use of digital equipment• Cite sources/text evidence (as appropriate at each grade level)• Use Internet safely and responsibly (“Internet” is any Internet based device or connection)• Observe the district acceptable use policy
B. Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity	
C. Demonstrate personal responsibility for lifelong learning	
D. Exhibit leadership for digital citizenship	

- **Example learning activity involving technology and digital resources for Digital Citizenship:**
 - Demonstrate the safe and cooperative use of technology

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: K-2

Topic 6: Technology Operations and Concepts

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I demonstrate a sound understanding of technology concepts, systems, and operations?

Standard	Skills/Concepts/Dispositions
A. Understand and use technology systems	<ul style="list-style-type: none">• Identify physical components of device• Use common elements of software programs and other applications• Effectively use keyboard skills<ul style="list-style-type: none">○ Identify commonly used keys (letters, numbers, spacebar, enter, etc.)○ Basic input skills• Understand how innovations and technologies have changed the way people live and work• Log in• Access program• Save• Print• Exit• Log off
B. Select and use applications effectively and productively	<ul style="list-style-type: none">• Integrate resources and applications as preselected by teacher
C. Troubleshoot systems and applications	<ul style="list-style-type: none">• Independently and persistently seek solutions and/or assistance when dealing with technology challenges
D. Transfer current knowledge to learning of new technologies	

Grade: K-2

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Topic 6: Technology Operations and Concepts (continued)

- **Example learning activities involving technology and digital resources for Technology Operations and Concepts:**
 - Engage in learning activities with learners from multiple cultures through email and other electronic means
 - In a collaborative work group, use a variety of technologies to produce a digital presentation or product in a curriculum area
 - Independently apply digital tools and resources to address a variety of tasks and problems
 - Communicate about technology using developmentally appropriate and accurate terminology
 - Demonstrate the ability to navigate in virtual environments such as electronic books, simulation software, and websites

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: K-2

Topic 7: Visual Literacy

- **National Standard:** American Association of School Librarians
- **Essential Question:** How do I understand many of the ethical, legal, social, and economic issues surrounding the creation and use of images and visual media, and access and use visual materials ethically?

Standard	Skills/Concepts/Dispositions
A. Understand many of the ethical, legal, social, and economic issues surrounding images and visual media	<ul style="list-style-type: none">• Create a description or tell a story given an image or artifact• Create a mental image of words or texts to read aloud and independently• Gather information from pictures, photos, and videos
B. Follow ethical and legal best practices when accessing, using, and creating images	
C. Cite images and visual media in papers, presentations, and projects	

- **Example learning activities involving technology and digital resources for Visual Literacy:**
 - Illustrate and communicate original ideas and stories using digital tools and media-rich resources
 - Demonstrate the ability to navigate in virtual environments such as electronic books, simulation software, and websites

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 3-5

Topic 1: Creativity/Innovation

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology?

Standard	Skills/Concepts/Dispositions
A. Apply existing knowledge to generate new ideas, products, or processes	<ul style="list-style-type: none"> • Solve problems in new and innovative ways • Use prior knowledge to discover patterns, ask questions, and generate new ideas • Brainstorm • Use humor, figurative language, puns, proverbs, idioms, etc. • Solve lateral thinking problems • Use creativity and originality
B. Create original works as a means of personal or group expression	<ul style="list-style-type: none"> • Use visual and multimedia to tell stories or relay information • Use pictures to track a storyline • Use sequencing • Use glyphs
C. Use models and simulations to explore complex systems and issues	<ul style="list-style-type: none"> • Connect abstract ideas to concrete experiences • Use simulations • Use manipulatives • Do experiments
D. Identify trends and forecast possibilities	<ul style="list-style-type: none"> • Use patterns • Make predictions and inferences • Use probability • Use graphing

- **Example learning activities involving technology and digital resources for Creativity/Innovation:**
 - Produce a media-rich digital story about a significant local event based on first-person interviews
 - Use digital-imaging technology to modify or create works of art for use in a digital presentation

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 3-5

Topic 2: Communication and Collaboration

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others?

Standard	Skills/Concepts/Dispositions
A. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media	<ul style="list-style-type: none">• Collaborate with others to broaden and deepen understanding• Work in groups using collaborative roles• Participate in collaborative conversations in person and via digital media
B. Communicate information and ideas effectively to multiple audiences using a variety of media and formats	<ul style="list-style-type: none">• Communicate appropriately to support individual learning and the learning of others• Publish works in print and digital media• Understand audience• Recognize the author's purpose
C. Develop cultural understanding and global awareness by engaging with learners of other cultures	<ul style="list-style-type: none">• Read, view, and listen to a variety of multicultural texts and media
D. Contribute to project teams to produce original works or solve problems	<ul style="list-style-type: none">• Contribute to group projects• Actively participate in assigned roles

- **Example learning activities involving technology and digital resources for Communication and Collaboration:**
 - Produce a media-rich digital story about a significant local event based on first-person interviews
 - Use digital-imaging technology to modify or create works of art for use in a digital presentation

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 3-5

Topic 3: Research and Information Fluency

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I apply digital tools to gather, evaluate and use information.

Standard	Skills/Concepts/Dispositions
A. Plan strategies to guide inquiry	<ul style="list-style-type: none">• Brainstorm and ask questions about a research topic• Connect to prior knowledge• Use KWL
B. Locate, organize, analyze, evaluate, synthesize and ethically use information from a variety of sources and media	<ul style="list-style-type: none">• Read, view, and/or listen to locate information• Take notes and organize information• Effectively use traditional reference sources – both print and digital• Determine relevance and importance• Make basic inferences• Use notetaking to:<ul style="list-style-type: none">○ Categorize○ Find patterns○ Answer research questions○ Use graphic organizers
C. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks	<ul style="list-style-type: none">• Find, select, and evaluate appropriate sources• Find and use at least two sources of credible information
D. Process data and report results	<ul style="list-style-type: none">• Reflect upon learning• Create a product or presentation to communicate what was learned• Present product professionally and creatively

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 3-5

Topic 3: Research and Information Fluency (continued)

- **Example learning activities involving technology and digital resources for Research and Information Fluency:**
 - Produce a media-rich digital story about a significant local event based on first-person interviews
 - Recognize bias in digital resources while researching an environment issue with guidance from the teacher
 - Select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses
 - Identify and investigate global issue and generate possible solutions using digital tools and resources

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 3-5

Topic 4: Critical Thinking, Problem Solving, and Decision Making

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources?

Standard	Skills/Concepts/Dispositions
A. Identify and define authentic problems and significant questions for investigation	<ul style="list-style-type: none">• Explore real world issues• Ask questions to aid in solving problems• Pose questions• Evaluate information• Activate prior knowledge• Respect diverse opinions• Create models to develop understanding and make decisions• Develop evidence based and ethical conclusions• Solve problems using multiple strategies
B. Plan and manage activities to develop a solution or complete a project	
C. Collect and analyze data to identify solutions and/or make informed decisions	
D. Use multiple processes and diverse perspectives to explore alternative solutions	

- **Example learning activities involving technology and digital resources for Critical Thinking, Problem Solving, and Decision Making:**
 - Produce a media-rich digital story about a significant local event based on first-person interviews
 - Recognize bias in digital resources while researching an environment issue with guidance from the teacher
 - Select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses
 - Identify and investigate global issue and generate possible solutions using digital tools and resources
 - Conduct science experiments using digital instruments and measurement devices
 - Conceptualize, guide, and manage individual or group learning projects using digital planning tools with teacher support
 - Apply previous knowledge of digital technology operations to analyze and solve current hardware and software problems

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 3-5

Topic 5 : Digital Citizenship

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How can I understand human, cultural, and societal issues related to technology and practice legal and ethical behavior?

Standard	Skills/Concepts/Dispositions
A. Advocate and practice safe, legal, and responsible use of information and technology	<ul style="list-style-type: none"> • Demonstrate proper care and use of digital equipment • Cite sources/provide text evidence (as appropriate at each grade level) • Use Internet safely and responsibly (“Internet” is any Internet based device or connection) • Identify privacy and personal security issues • Observe the district acceptable use policy • Understand paraphrase vs. copy • Develop an awareness of your digital footprint through social media
B. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity	
C. Demonstrate personal responsibility for lifelong learning	
D. Exhibit leadership for digital citizenship	

- **Example learning activities involving technology and digital resources for Digital Citizenship:**
 - Practice injury prevention by applying a variety of ergonomic strategies when using technology
 - Debate the effect of existing and emerging technologies on individuals, society and the global community

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 3-5

Topic 6: Technology Operations and Concepts

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I demonstrate a sound understanding of technology concepts, systems, and operations?

Standard	Skills/Concepts/Dispositions
A. Understand and use technology systems	<ul style="list-style-type: none">• Identify physical components of device• Use common elements of software programs and other applications• Effectively use keyboard skills<ul style="list-style-type: none">○ Identify commonly used keys (letters, numbers, spacebar, enter, etc.)○ Basic input skills• Understand how innovations and technologies have changed the way people live and work• Log in• Access program• Save• Print• Exit• Log off
B. Select and use applications effectively and productively	<ul style="list-style-type: none">• Integrate resources and applications as preselected by teacher
C. Troubleshoot systems and applications	<ul style="list-style-type: none">• Independently and persistently seek solutions and/or assistance when dealing with technology challenges
D. Transfer current knowledge to learning of new technologies	

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 3-5

Topic 6: Technology Operations and Concepts (continued)

- **Example learning activities involving technology and digital resources for Technology Operations and Concepts:**
 - Use digital-imaging technology to modify or create works of art for use in a digital presentation
 - Select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses
 - Conduct science experiments using digital instruments and measurement devices
 - Conceptualize, guide, and manage individual or group learning projects using digital planning tools with teacher support
 - Debate the effect of existing and emerging technologies on individuals, society and the global community
 - Apply previous knowledge of digital technology operations to analyze and solve current hardware and software problems

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 3-5

Topic 7: Visual Literacy

- **National Standard:** American Association of School Librarians – Standards for the 21st Century Learners
- **Essential Question:** How do I understand many of the ethical, legal, social, and economic issues surrounding the creation and use of images and visual media, and access and use visual materials ethically?

Standard	Skills/Concepts/Dispositions
A. Understand many of the ethical, legal, social, and economic issues surrounding images and visual media	<ul style="list-style-type: none">• Create a description or tell a story given an image or artifact• Create a mental image of words or texts to read aloud and independently• Gather information from pictures, photos and videos
B. Follow ethical and legal best practices when accessing, using, and creating images	
C. Cite images and visual media in papers, presentations, and projects	

- **Example learning activities involving technology and digital resources for Visual Literacy:**
 - Use appropriate editing, presentation, media tools, and applications to work with and present images
 - Illustrate and communicate original ideas and stories using digital tools and media-rich resources
 - Demonstrate the ability to navigate in virtual environments such as, electronic books, simulation software websites

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 6-8

Topic 1: Creativity/Innovation

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I demonstrate creative thinking and develop innovative products using technology?

Standard	Skills/Concepts/Dispositions
A. Apply existing knowledge to generate new ideas, products, or processes	<ul style="list-style-type: none">• Create unique and innovative projects• Use failure to spur innovation• Explore digital models and simulations
B. Create original works as a means of personal or group expression	
C. Use models and simulations to explore complex systems and issues	
D. Identify trends and forecast possibilities	

- **Example learning activities involving technology and digital resources for Creativity/Innovation:**
 - Describe and illustrate a content-related concept or process using a model, simulation, or concept-mapping software
 - Create original animations or videos documenting school, community, or local events
 - Gather data, examine patterns, and apply information for decision making using digital tools and resources
 - Integrate a variety of file types to create and illustrate a document or presentation

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 6-8

Topic 2: Communication and Collaboration

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I use digital media to communicate and work collaboratively to support learning?

Standard	Skills/Concepts/Dispositions
A. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media	<ul style="list-style-type: none">• Create/use an online account• Learn how to create/edit web-based artifact• Participate in a collaborative project• Experience virtual fieldtrips
B. Communicate information and ideas effectively to multiple audiences using a variety of media and formats	
C. Develop cultural understanding and global awareness by engaging with learners of other cultures	
D. Contribute to project teams to produce original works or solve problems	

- **Example learning activities involving technology and digital resources for Communication and Collaboration:**
 - Describe and illustrate a content-related concept of process using a model, simulation, or concept-mapping software
 - Create original animations or videos documenting school, community, or local events
 - Participate in a cooperative learning project in an online learning community
 - Use collaborative electronic authoring tools to explore common curriculum content from multicultural perspectives with other learners

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 6-8

Topic 3: Research and Information Fluency

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I apply digital tools to gather, evaluate, and use information?

Standard	Skills/Concepts/Dispositions
A. Plan strategies to guide inquiry	<ul style="list-style-type: none">• Interpret charts, diagrams, maps, and tables• Analyze spreadsheets• Develop graphs, charts, diagrams• Integrate databases into research (e.g. EBSCO)• Examine multiple sources (digital, print)• Present research using appropriate productivity tools• Reflect upon learning
B. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media	
C. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks	
D. Process data and report results	

- **Example learning activities involving technology and digital resources for Research and Information Fluency:**
 - Evaluate digital resources to determine the credibility of the author and publisher and the timeliness and accuracy of the content
 - Select and use the appropriate tools and digital resources to accomplish a variety of tasks and to solve problems
 - Use collaborative electronic authoring tools to explore common curriculum content from multicultural perspectives with other learners

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 6-8

Topic 4: Critical Thinking, Problem Solving, and Decision Making

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources?

Standard	Skills/Concepts/Dispositions
A. Identify and define authentic problems and significant questions for investigation	<ul style="list-style-type: none"> • Explore real-world issues • Use technology to identify problems
B. Plan and manage activities to develop a solution or complete a project	<ul style="list-style-type: none"> • Interpret charts, diagrams, maps, and tables • Use spreadsheets
C. Collect and analyze data to identify solutions and/or make informed decisions	<ul style="list-style-type: none"> • Develop graphs, charts, diagrams • Use multiple sources (digital, print)
D. Use multiple processes and diverse perspectives to explore alternative solutions	<ul style="list-style-type: none"> • Respect diverse opinions • Develop evidence based and ethical conclusions

- **Example learning activities involving technology and digital resources for Critical Thinking, Problem Solving, and Decision Making:**
 - Gather data, examine patterns, and apply information for decision making using digital tools and resources
 - Employ data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems
 - Select and use the appropriate tools and digital resources to accomplish a variety of tasks and to solve problems
 - Use collaborative electronic authoring tools to explore common curriculum content from multicultural perspectives with other learners
 - Independently develop and apply strategies for identifying and solving routine hardware and software problems

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 6-8

Topic 5: Digital Citizenship

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I practice legal and ethical behavior in the 21st century?

Standard	Skills/Concepts/Dispositions
A. Advocate and practice safe, legal, and responsible use of information and technology	<ul style="list-style-type: none">• Observe the district acceptable use policy• Understand the purpose of a works cited
B. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity	<ul style="list-style-type: none">• Locate and use citation generators• Create complete citation correctly
C. Demonstrate personal responsibility for lifelong learning	<ul style="list-style-type: none">• Understand the difference between copyright and plagiarism
D. Exhibit leadership for digital citizenship	<ul style="list-style-type: none">• Understand how to appropriately collaborate in a digital world• Promote a positive self-image• Distinguish the reliability of sources• Develop an awareness of your digital footprint through social media

- **Example learning activities involving technology and digital resources for Digital Citizenship:**
 - Gather data, examine patterns, and apply information for decision making using digital tools and resources
 - Use collaborative electronic authoring tools to explore common curriculum content from multicultural perspectives with other learners

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 6-8

Topic 6: Technology Operations and Concepts

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I demonstrate a sound understanding of technology concepts, systems, and operations?

Standard	Skills/Concepts/Dispositions
A. Understand, select, and use appropriate applications effectively and productively	<ul style="list-style-type: none">• Navigate an operating system and understand folder hierarchy• Understand menus, toolbars, shortcuts, keyboard combos
B. Troubleshoot systems and applications	<ul style="list-style-type: none">• Understand the benefits of each productivity tool
C. Use technology and digital media strategically and capably	<ul style="list-style-type: none">• Select appropriate productivity tool to accomplish task
D. Transfer current knowledge to learning of new technologies	<ul style="list-style-type: none">• Create and publish real-world products• Identify and evaluate emerging technologies• Independently and persistently seek solutions and/or assistance when dealing with technology challenges

- **Example learning activities involving technology and digital resources for Technology Operations and Concepts:**
 - Select and use the appropriate tools and digital resources to accomplish a variety of tasks and to solve problems
 - Integrate a variety of file types to create and illustrate a document or presentation
 - Independently develop and apply strategies for identifying and solving routine hardware and software problems

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 6-8

Topic 7: Visual Literacy

- **National Standard:** American Association of School Librarians
- **Essential Question:** How do I create, use, and access visual media ethically? Do I understand the ethical, legal, social, and economic issues surrounding technology?

Standard	Skills/Concepts/Dispositions
A. Understand many of the ethical, legal, social, and economic issues surrounding images and visual media	<ul style="list-style-type: none">• Compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version• Identify a variety of image sources, materials, and types
B. Follow ethical and legal best practices when assessing, using, and creating images	<ul style="list-style-type: none">• Distinguish the perspective or scale of images/media (e.g. bird's-eye view, cross-section, magnification)• Introduce the many uses of infographics (<i>a visual image such as a chart or diagram used to represent information or data</i>)
C. Cite images and visual media in papers, presentations, and projects	<ul style="list-style-type: none">• Interpret and develop infographics• Cite visual materials using an appropriate documentation style• Choose an appropriate image

- **Example learning activities involving technology and digital resources for Visual Literacy:**
 - Use appropriate editing, presentation, media tools, and applications to work with and present images

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 9-12

Topic 1: Creativity/Innovation

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology?

Standard	Skills/Concepts/Dispositions
A. Apply existing knowledge to generate new ideas, products, or processes	<ul style="list-style-type: none">• Create unique and innovative projects• Use creativity and originality• Use failure to spur innovation• Use modeling and graphing• Create and use simulations• Make predictions
B. Create original works as a means of personal or group expression	
C. Use models and simulations to explore complex systems and issues	
D. Identify trends and forecast possibilities	

- **Example learning activities involving technology and digital resources for Creativity/Innovation:**
 - Design, develop, and test a digital learning game to demonstrate knowledge and skills related to curriculum content
 - Create and publish an online art gallery with examples and commentary that demonstrate an understanding of different historical periods, cultures, and countries
 - Employ curriculum-specific simulations to practice critical-thinking processes
 - Identify a complex global issue, develop a systematic plan of investigation, and present innovative sustainable solutions
 - Design a website that meets accessibility
 - Create original animations or vides documenting school, community, or local events
 - Create media-rich presentations for other students on the appropriate and ethical use of digital tools and resources

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 9-12

Topic 2: Communication and Collaboration

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others?

Standard	Skills/Concepts/Dispositions
A. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media	<ul style="list-style-type: none"> • Inform • Instruct • Motivate • Persuade • Listen effectively to all group members • Decipher meaning (knowledge, values, attitudes and intentions) • Actively participate in a web-based collaborative project • Assume shared responsibility in collaborative projects • Value individual contributions to group projects • Experience virtual field trips
B. Communicate information and ideas effectively to multiple audiences using a variety of media and formats	
C. Develop cultural understanding and global awareness by engaging with learners of other cultures	
D. Contribute to project teams to produce original works or solve problems	

- **Example learning activities involving technology and digital resources for Communications and Collaboration:**
 - Create and publish an online art gallery with examples and commentary that demonstrate an understanding of different historical periods, cultures, and countries
 - Use collaborative electronic authoring tools to explore common curriculum content with other learners
 - Identify a complex global issue, develop a systematic plan of investigation, and present innovative sustainable solutions

MILFORD SCHOOL DISTRICT: INFORMATION TECHNOLOGY

Grade: 9-12

Topic 3: Research and Information Fluency

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I apply digital tools to gather, evaluate, and use information?

Standard	Skills/Concepts/Dispositions
A. Plan strategies to guide inquiry	<ul style="list-style-type: none">• Interpret charts, diagrams, maps, tables
B. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media	<ul style="list-style-type: none">• Integrate online research databases into research (Gale, EBSCO, Proquest, etc.)• Construct new understandings• Solve a problem• Synthesize sources
C. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks	<ul style="list-style-type: none">• Demonstrate understanding• Evaluate sources• Integrate information
D. Process data and report results	<ul style="list-style-type: none">• Examine multiple sources (digital, print)• Cite sources appropriately• Present research using appropriate productivity tools• Reflect upon learning

- **Example learning activities involving technology and digital resources for Research and Information Fluency:**
 - Select digital tools or resources to use for a real-world task and justify the selection based on their efficiency and effectiveness
 - Identify a complex global issue, develop a systematic plan of investigation, and present innovative sustainable solutions
 - Model legal and ethical behaviors when using information and technology by properly selecting, acquiring, and citing resources
 - Select and use the appropriate tools and digital resources to accomplish a variety of tasks to solve problems

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Grade: 9-12

Topic 4: Critical Thinking, Problem Solving, and Decision Making

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources?

Standard	Skills/Concepts/Dispositions
A. Identify and define authentic problems and significant questions for investigation	<ul style="list-style-type: none">• Explore real-world issues• Use technology to identify and solve a problem
B. Plan and manage activities to develop a solution or complete a project	<ul style="list-style-type: none">• Evaluate• Inquire
C. Collect and analyze data to identify solutions and/or make informed decisions	<ul style="list-style-type: none">• Analyze charts, graphs, diagrams,• Use multiple sources (digital, print)
D. Use multiple processes and diverse perspectives to explore alternative solutions	<ul style="list-style-type: none">• Respect diverse opinions• Develop evidence based and ethical conclusions

- **Example learning activities involving technology and digital resources for Critical Thinking, Problem Solving, and Decision Making:**
 - Select and use the appropriate tools and digital resources to accomplish a variety of tasks to solve problems
 - Design, develop, and test a digital learning game to demonstrate knowledge and skills related to curriculum content
 - Employ curriculum-specific simulations to practice critical-thinking processes
 - Identify a complex global issue, develop a systematic plan of investigation, and present innovative sustainable solutions
 - Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs
 - Configure and troubleshoot hardware, software, and network systems to optimize their use for learning and productivity

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Grade: 9-12

Topic 5: Digital Citizenship

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I understand human, cultural, and societal issues related to technology and practice legal and ethical behavior?

Standard	Skills/Concepts/Dispositions
A. Advocate and practice safe, legal, and responsible use of information and technology	<ul style="list-style-type: none"> • Observe the district acceptable use policy • Create complete citations • Legally obtain digital media • Understand copyright laws – plagiarism • Communicate clearly • Maintain a positive image of self • Interact respectfully • Choose/Use tools • Interact with the world • Search and evaluate • Make decisions • Develop and manage your public online presence/digital footprint • Protect personal information • Protect the privacy of other when posting information online • Think critically about the benefits and risks of online tracking and targeting. • Think critically about developing relationships with people online
B. Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity	
C. Demonstrate personal responsibility for lifelong learning	
D. Exhibit leadership for digital citizenship	

- **Example learning activities involving technology and digital resources for Digital Citizenship:**
 - Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs
 - Create a wiki using collective intelligence
 - Model legal and ethical behaviors when using information and technology by properly selecting, acquiring, and citing resources
 - Create media-rich presentations for other students on the appropriate and ethical use of digital tools and resources

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Grade: 9-12

Topic 6: Technology Operations and Concepts

- **National Standard:** International Society of Technology in Education – Standards for Students
- **Essential Question:** How do I demonstrate a sound understanding of technology concepts, systems, and operations?

Standard	Skills/Concepts/Dispositions
A. Understand and use technology systems	<ul style="list-style-type: none">• Organize information• Publish information• Create authentic, real-world products• Update published materials dynamically• Create historical accounts• Identify and evaluate emerging technologies• Independently and persistently seek solutions and/or assistance when dealing with technology challenges
B. Select and use applications effectively and productively	
C. Troubleshoot systems and applications	
D. Transfer current knowledge to learning of new technologies	

- **Example learning activities involving technology and digital resources for Technology Operations and Concepts:**
 - Select digital tools or resources to use for a real-world task and justify the selection based on their efficiency and effectiveness
 - Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs
 - Configure and troubleshoot hardware, software, and network systems to optimize their use for learning and productivity

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Grade: 9-12

Topic 7: Visual Literacy

- **National Standard:** American Library Association of School Librarians
- **Essential Question:** How do I understand many of the ethical, legal, social, and economic issues surrounding the creation and use of images and visual media, and access and use visual materials ethically?

Standard	Skills/Concepts/Dispositions
A. Understand many of the ethical, legal, social, and economic issues surrounding images and visual media	<ul style="list-style-type: none">• Identify the need for an image• Identify a variety of image sources, materials, and types• Choose an appropriate image
B. Follow ethical and legal best practices when accessing, using, and creating images	<ul style="list-style-type: none">• Synthesize visual materials• Evaluate an image in its cultural, social, and historical context
C. Cite images and visual media in papers, presentations, and projects	<ul style="list-style-type: none">• Discriminate among perspectives• Cite visual materials using an appropriate documentation style• Create and interpret infographics

- **Example learning activity involving technology and digital resources for Visual Literacy:**
 - Use appropriate editing, presentation, media tools, and applications to work with and present images
 - Create infographics to represent information or data
 - Compare and contrast a written story, drama or poem to its audio, filmed staged for multimedia version