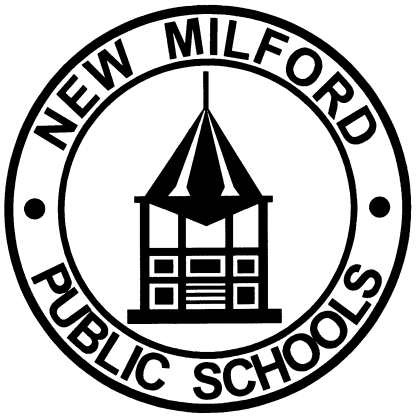

New Milford Public Schools K – 8 Education Technology Competencies
Scope & Sequence

February 2011

Board of Education

Wendy Ann Faulenbach, Chairperson
Daniel Nichols, Vice Chairperson
David Lawson, Secretary
Nancy C. Tarascio-Latour, Assistant Secretary
Thomas McSherry
Lynette Celli Rigdon
Alexandra Thomas
Rodney Weinberg
William Wellman

Central Office Administration

Dr. Jean Ann Paddyfote, Superintendent
Dr. Maureen E. McLaughlin, Assistant Superintendent
Mr. Daniel DiVito, Director of Technology

Committee Members

David Bilmes, SMS
Leanne Buckley, HPS
Eric Conklin, NES, JPS
Daryl Daniels, NMHS
Jeff Ferguson, SMS
Monique Gil-Rogers, SNIS
Greg Shugrue, NMHS
Linda Thomas, SNIS

New Milford Public Schools K – 8 Educational Technology Competencies

Introduction

The New Milford Schools believe technology is a tool to be used to create and innovate, communicate and collaborate, conduct research, promote ethical thinking, problem solve, and improve decision-making. As such, we believe students need to understand and practice responsible digital citizenship and master technology operations to a level that helps students embrace the opportunities technology affords them.

The scope and sequence of the document that follows is organized around the conceptual topics derived from the National Educational Technology Standards (NETS) and Performance Indicators for Students. This document will promote the six Enduring Understandings listed below.

The document is organized by concept topics and by grade levels (primary K-3, intermediate 4-6, and middle school 7-8). It is the intention that the students will master the major concepts outlined in this document by the conclusion of grade 8, so that those concepts and skills will be successfully utilized by the students in their high school courses.

The major concepts and enduring understandings achieved by this scope and sequence follow:

Concepts
Technology Operations and Concepts
Digital Citizenship
Creativity and Innovation
Communication and Collaboration
Research and Information Fluency
Critical Thinking, Problem Solving, and Decision-Making

Enduring Understandings

- Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.
- Students use digital media and environments to communicate and to work collaboratively, including at a distance, to support individual learning and to contribute to the learning of others.
- Students apply digital tools to gather, evaluate, and use information.
- Students use critical thinking skills to plan and conduct research, to manage projects, to solve problems, and to make informed decisions using appropriate digital tools and resources.
- Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
- Students demonstrate a sound understanding of technology concepts, systems, and operations.

New Milford Public Schools

K – 8 Education Technology Competencies

Technology Standard: **Creativity and Innovation**

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
K - 3	Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. • Apply existing knowledge to generate new ideas, products, or processes • Create original works as a means of personal or group expression • Use models and simulations to explore complex systems and issues • Identify trends and forecast possibilities	Students can accurately interpret and create simple visuals (i.e., charts, maps, graphs, and models) and use this information to solve problems and to communicate information. Students articulate thoughts and ideas, representative of real and imaginary experiences, clearly and effectively through oral, written, or multimedia communication. Students engage in discovery, exploration, and experimentation to reach unexpected answers. Students make unusual associations and provide a variety of solutions to problems. Students identify parts of a system and explain how those parts interact with one another. Students understand the defined learning goal and use age-appropriate instructional rubrics and tools to assess their performance in meeting the goal within the timeline established by the teacher.	Students use electronic drawing and paint programs to create graphics. Students participate in a group to locate and create pictures, clip art, graphs, tables, and other appropriate objects to insert into documents and presentations. Students, working in a teacher-led whole group project, use presentation software to illustrate concepts and communicate ideas. Students use input and output devices to successfully operate a computer. Students create developmentally appropriate multi-media products. Students use a variety of technology resources for directed and independent learning. Students identify different purposes among software applications (i.e.., puzzles, writing tools, graphing tools, concept mapping tools).	Digital drawing, paint, and photo editing tools Digital cameras Computer OS Word processing software Desktop Publishing Web 2.0 tools Content specific resources for models and simulations (i.e.., life cycle of plants and animals) Input/output devices

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		Students manage negative emotions, align their goals to the goals of others, and work cooperatively and productively with others in small groups.		
4 – 6	Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. • Apply existing knowledge to generate new ideas, products, or processes • Create original works as a means of personal or group expression. • Use models and simulations to explore complex systems and issues • Identify trends and forecast possibilities	Students identify information needed to solve a problem or to complete an assignment, conduct a search, and prioritize various sources based on credibility and relevance, retrieve relevant information from a variety of media sources, and use this information to create an effective presentation. Students accurately interpret symbols and visuals and can distinguish fact from opinion when presented with visuals through various media. Students use their knowledge to construct new knowledge and to communicate information. Students, cognizant of audience and purpose, articulate thoughts and ideas accurately and effectively through oral, written, or multimedia communications. Students identify parts of a system and explain how those parts interact with one another.	Students use keyboard, mouse and other common input and output devices (including adaptive devices when necessary) efficiently and effectively. Students handle diskettes, CD/DVDs, USB drives, microphones, and headphones with care. Students open files independently, save documents, and send documents to the printer. Students use menu options in software applications to create documents, simple spreadsheets, and presentations and to save files to various locations (i.e., USB drive, diskette, hard drive, server). Students begin to use e-mail to exchange documents with other teachers and students. Students know how to organize files through the use of folders. Students find, import, insert, and resize or move pictures, images, and charts in word processing documents, spreadsheets, presentations, and other electronic templates.	Digital drawing, paint, and photo editing tools Digital cameras Computer OS Word processing software Desktop Publishing Web 2.0 tools Content specific resources for models and simulations (i.e., life cycle of plants and animals) Input/output devices Database resources Spreadsheet software E-mail access

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		Students generate ideas for solutions to problems and ask questions in order to create unusual, unique or clever products. Students begin to cognitively recognize the skills of adapting, improving, modifying, and expanding existing thoughts or ideas to create products. Students engage in the goal setting process, and with guidance, demonstrate the ability to change focus and direction or to use different strategies while using instructional rubrics and other tools to monitor and evaluate their performance. Students appreciate, accept, and work cooperatively with others, in both academic and social contexts. Students maintain a positive, constructive attitude in collaborative learning environments.	Students create developmentally appropriate multi-media products. Students create a presentation of at least four to six slides. Students insert slides and choose backgrounds, fonts, and slide layouts. Students understand and use different formats for viewing (i.e., slide sorter menu, slide show menu, normal view). Students use technology tools (i.e., presentation software, word processing software, publishing software, group web page design, digital cameras, scanners) for individual and collaborative writing, communication, and publishing activities to create informative products for various audiences inside and outside the classroom. Students use a variety of software for directed and independent learning activities.	
7 – 8	Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Apply existing knowledge to generate new ideas, products, and processes • Create original works as a means of personal or group expression • Use models and simulations to explore complex systems and issues	Students can accurately interpret abstract visuals (i.e., charts, maps, graphs, and models) and create products that reflect a growing understanding of visual language and require effective use of tools (i.e., cropped photos, original charts and graphs, well chosen images from databases, video clips) and use this information to solve problems and communicate information.	Students connect peripheral devices (i.e., microphones, headphones, digital cameras, USB drives) to computers and use them efficiently and effectively. Students access server and/or network resources (i.e., file folders/software programs, bookmarked sites).	Digital drawing, paint, and photo editing tools Digital cameras Computer OS Word processing software Desktop Publishing

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
	• Identify trends and forecast possibilities	Students present ideas through the use of technology. Students create thoughtful ideas and solutions and take risks as they work toward goals despite mistakes. Students begin to think consistently of all the possibilities and to diverge to become more expansive with their thoughts/ideas that lead to the creation of original products. Students present thoughts, ideas, and conceptual understanding efficiently, accurately, and in a compelling manner to enhance the oral and written presentation through the use of technology.	Students recognize different file format extensions (i.e., .doc, .xls, .ppt, .rft, .pdf, .jpeg, .gif, .mpg, .wav, .mp3) and can import the different formats into documents, presentations, spreadsheets, and databases. Students use audio, video, pictures, clip art, moviemaker programs, webpage design software, Web 2.0 resources, electronic documents, and other files to create and publish electronic products to communicate with various audiences inside and outside the classroom. Students use advanced features and utilities of presentation software (i.e., design templates, design layouts, fonts/colors/backgrounds, animations and graphics, inserting pictures, objects, movies, sound, charts, hyperlinks, and graphs) to create an original product. Students use content specific tools, software, and simulations to support learning and research. Students apply productivity/ multimedia tools and peripherals to support personal productivity, group collaboration, and learning.	Web 2.0 tools, such as wikis, blogs, podcasts, Glogster, School Tube Content specific resources for models and simulations (i.e., life cycle of plants and animals) Input/output devices Spreadsheet software Database software E-mail access

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
			Students use telecommunications and collaboration tools to work with peers and others to investigate information and to develop solutions or products.	

New Milford Public Schools

K – 8 Education Technology Competencies

Technology Standard: **Communication and Collaboration**

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
K – 3	Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and to contribute to the learning of others through the following: • Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media • Communicate information and ideas effectively to multiple audiences using a variety of media and formats • Develop cultural understanding and global awareness by engaging with learners of other cultures • Contribute to project teams to produce original works or to solve problems	Students confirm an understanding of what it means to communicate a thought or idea. Students identify hardware and software as communication devices and tools. Students recognize that communication requires the contribution of a receiver as well as a sender of the message. Students identify hardware and software as communication devices and tools. Students express several methods of communication. Students verbalize ways technology assists people to communicate. Students list ways they communicate and collaborate with their family. Students explain how they like to use the computer to communicate.	Students enter key words and sentences into a word processor. Students insert images and identify each with a description or caption. Students print and share work and ideas. Students use electronic mail to communicate with others. Students view online videos. Students engage in learning activities with learners from multiple cultures through digital means. Students illustrate and communicate original ideas and stories.	Word processor Web browser Image creation software E-mail software or website Websites with video and images Electronic communications device Instant messaging

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		Students are able to name multiple software packages or websites that can be used to communicate with others. Students edit their writing and pictures that are sent to others. Students name a computer application or website they have used to draw.		
4 - 6	Students use digital media and environments to communicate and to work collaboratively, including at a distance, to support individual learning and to contribute to the learning of others through the following: • Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media • Communicate information and ideas effectively to multiple audiences using a variety of media and formats • Develop cultural understanding and global awareness by engaging with learners of other cultures • Contribute to project teams to produce original works or solve problems	Students record ways that websites help people communicate their ideas. Students are able to speak about the different methods people use to publicize their messages. Students show an ability to use technology in ways that assist themselves with remembering tasks and responsibilities. Students show an understanding of how they can find other opinions about specific subjects. Students show an awareness of the attributes of a site that makes them continually visit. Students identify websites and their categories (i.e., social networks, instant messaging, etc) they use to communicate with their friends.	Students identify and apply communication techniques helpful in solving problems. Students work collaboratively with a partner at school. Students discuss methods of communicating with technology. Students show graphic representation of data. Students model acceptable behavior and understand e-mail etiquette. Students collaborate by assisting and editing. Students represent communication in a professional manner.	Word processor Spreadsheet software Presentation software Web browser Network Electronic communication devices Instant messaging Social networking Web authoring software Intranet Telecommuting

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		Students show an awareness of audience demographics. Students appreciate how technology allows them to communicate with more than one friend at a time. Students show their learning styles Students show several ways that numbers are connected to each other. Students explain the pros and cons of telecommuting.	Students use a variety of technologies to produce a digital presentation or product within a collaborative work environment. Students utilize the Internet to facilitate information sharing. Use graphing applications, students show the relationships among numbers in several ways. .	Message boards Blogs
7 - 8	Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and to contribute to the learning of others through the following: • Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media • Communicate information and ideas effectively to multiple audiences using a variety of media and formats • Develop cultural understanding and global awareness by engaging with learners of other cultures • Contribute to project teams to produce original works or solve problems	Students identify software and websites that identify voice, video, and text that can be used online to communicate. Students identify technology that can obtain the opinions or perceptions of others and explain how the information can be useful. Students show an awareness of the rules of presenting within their presentations. Students identify formats (i.e., table, spreadsheet, database, chart, image) and software) used to present numeric data. Students identify the best digital tools to communicate information.	Students use online tools to collaborate with students. Students use online tools to convey thoughts and to solicit assistance from others involved. Students take part in a collaborative effort to present information effectively. Students demonstrate the solution to a challenge through video. Students summarize with audio electronically communicated. Students present information regarding topic or solution. Students communicate with experts.	Presentation software Spreadsheet software Sound editing software Audio creation software/podcasting software Cloud computing Online collaborative editing tools Distance learning Webcam Video conferencing Software Video creation

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		Students recognize a range of methods and the parties necessary to communicate information on the web for their audience to observe. Students name specific online companies or websites that can assist in publishing their material.	Students publish original content onto Internet or Intranet.	software Web authoring software Online web authoring Google docs Podcast Wiki software

New Milford Public Schools

K – 8 Education Technology Competencies

Technology Standard: **Research and Information Fluency**

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
K - 3	Students apply digital tools to gather, evaluate, and use information. • Plan strategies to guide inquiry • Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety or sources and media • Evaluate and select information sources and digital tools based on the appropriateness to specific tasks • Process data and report results	Students use text, people, and electronic resources to locate and to organize information for classroom assignments. Students can find and evaluate information related to a current or historical person or event using digital resources. Students can identify, research, and collect data on an environmental issue using digital issue and propose an environmentally appropriate solution. Students can accurately interpret and create simple visuals and use this information to solve problems and communicate information. Students articulate thoughts and ideas, representative of real or imaginary experiences, clearly and effectively through oral, written, or multimedia communication.	Students use keyboards and mouse to enter name and User ID, type sentences, and follow on-screen prompts to successfully operate computers. Students demonstrate correct keyboarding posture and correct hand and finger placement for home row; know how to use keyboard to create lower and upper case letters, numbers, and special keys; know how to use a mouse to print and click, and correctly place curser. Students use technology tools to locate, organize, and evaluate information. Students create text, type words and sentences, and insert images using word processing software. Students create, save, print, and open existing files. Students enter simple data into a spreadsheet and create graphs electronically.	Web sites Online encyclopedia Word processing Spreadsheets Databases

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
			Students use presentation software to illustrate concepts and to communicate ideas. Students begin to locate information in a variety of developmentally appropriate technology resources to support classroom assignments	
4 - 6	Students apply digital tools to gather, evaluate, and use information. • Plan strategies to guide inquiry • Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety or sources and media • Evaluate and select information sources and digital tools based on the appropriateness to specific tasks • Process data and report results	Students use key words to initiate searches. Students analyze sources to determine reliability. Students select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses. Students produce a media-rich digital story about a significant event based on first-person interviews. Students identify and investigate a global issue and generate possible solutions using digital tools and resources.	Students begin to locate information using key words presented in the technology resources. Students use keyboards and mouse to enter name and User ID, type sentences, and follow on-screen prompts to successfully operate computers. Students use technology tools to locate, organize, and evaluate information.	Web sites Slideshow presentations Word processing Spreadsheets Databases
7 - 8	Students apply digital tools to gather, evaluate, and use information. • Plan strategies to guide inquiry • Locate, organize, analyze, evaluate, synthesize and ethically use information from a variety of	Students, when presented with a problem, identify the information needed; use text, people, online databases, and search engines to filter relevant information efficiently; analyze information for biases, timeliness, and accuracy of the content; synthesize information	Students employ data-collection technology such as probes, handheld devices, geographic mapping systems, and online surveys to gather, view, analyze, and report results for content-related problems.	Web browsers/search engines Databases Bibliographic sites

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
	sources and media • Evaluate and select information sources and digital tools based on the appropriateness to specific tasks • Process data and results	gathered, and create an effective and efficient response to the problem. Students properly cite sources. Students are proficient with different search strategies and know which ones to use at which times. Students draw conclusions from a variety of data sources to analyze and interpret systems. Students effectively collaborate online and recognize the benefits of online collaboration. Students maintain focus on larger project goals, frame appropriate questions, reflect on possible courses of action and their likely consequences, develop and initiate a plan of action with appropriate smaller objectives and benchmarks, and submit the completed project when due.	Students select and use appropriate tools and digital resources to accomplish a variety of tasks and solve problems. Students use collaborative electronic authoring tools, such as wikis and blogs, to explore common curriculum content from multicultural perspectives with other learners. Students develop products using technology tools. Student use telecommunications tools (i.e., email, web pages, blogs, discussion groups, list-serv, etc.) to learn academic content and to gather, share, and publish information to various audiences. Students use Internet browsers, various search engines, book marking feature, and advanced search techniques to gather information; students evaluate the information for validity, bias, appropriateness, content, and usefulness.	Social networking sites, including blogs and wikis Social networking tools, such as electronic communication devices

New Milford Public Schools

K – 8 Education Technology Competencies

Technology Standard: **Critical Thinking, Problem Solving, and Decision-Making**

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
K - 3	Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. • Identify and define authentic problems and significant questions for investigation • Plan and manage activities to develop a solution or to complete a project • Collect and analyze data to identify solutions and/or to make informed decisions • Use multiple processes and diverse perspectives to explore alternative solutions	Students understand that computers and software can be used to collect data. Students understand how the Internet can be used to find information. Students find information on a topic on the Internet with support. Students understand when it is preferable to use books or the Internet to find information. Students engage with teacher assistance in a critical thinking process by conducting basic evaluations using simple criteria. Students engage in discovery, exploration, and experimentation to reach unexpected answers. Students make unusual associations and provide a variety of solutions to problems.	Students use a variety of technology resources for directed and independent learning activities. Students use technology to gather information. Students use software for problem solving and for illustration of thoughts and ideas. Students use online sources to access remote information. Students use a simple computer graphing application to display data.	Web sites Word processor Graphing software
4 - 6	Students use critical thinking skills to plan	Students understand why a	Students use content specific tools,	Web sites

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
	and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. • Identify and define authentic problems and significant questions for investigation • Plan and manage activities to develop a solution or complete a project • Collect and analyze data to identify solutions and/or make informed decisions • Use multiple processes and diverse perspectives to explore alternative solutions	spreadsheet is more appropriate for collecting data than a word processor. Students engage in a problem solving process that promotes questioning, planning, investigations, and finding answers and solutions. Students demonstrate how easy access to data increases problem solving. Students use critical thinking and cross referencing skills to show that the data collected from the Internet is accurate. Students engage in a critical thinking process that synthesizes knowledge and ideas. Students generate ideas for solutions to problems and ask questions in order to create unusual, unique, or clever products	software and simulations to support critical thinking, solve a problem, or help in decision-making. Students select and use digital tools, instruments, and measurement devices to collect and analyze data while conducting experiments, evaluating theories, and/or testing hypothesis. Students identify and investigate an issue and generate a possible solution using digital tools/resources. Students use spreadsheets and other applications to make predictions, solve problems, and draw conclusions.	Databases Spreadsheets Scientific tools
7 - 8	Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. • Identify and define authentic problems and significant questions for investigation • Plan and manage activities to develop	Students demonstrate how electronic information and data facilitate critical thinking and problem solving. Students understand that databases store and retrieve data. Students understand when it is preferable to use a spreadsheet or a	Gather data, examine patterns, and apply information to decision-making using electronic tools/resources. Students independently use appropriate technology tools to define problems and to propose hypothesis.	Web sites Data bases Spread sheets Scientific tools

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
	a solution or complete a project • Collect and analyze data to identify solutions and/or to make informed decisions	database to store electronic information. Students engage in a critical thinking process that supports synthesis and conducts evaluations by applying comprehensive criteria. Student draws conclusions from a variety of data sources to analyze and interpret information. Students engage in a problem solving process that divides complex problems into simpler parts in order to devise solutions. Students create thoughtful ideas and solutions and take risks as they work toward a goal despite mistakes. Students begin to think consistently of all the possibilities to become more expansive with their thoughts/ideas that lead to the creation of original products.	Students use and modify databases and spreadsheets to analyze data and to propose solutions. Students develop and use guidelines to evaluate the content, organization, design, use of citations, and presentation of technologically enhanced projects. Students explain and demonstrate how specialized technology tools can be used for problem solving, decision-making, and creativity in all subject areas.	

New Milford Public Schools

K – 8 Education Technology Competencies

Technology Standard: **Digital Citizenship**

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
K - 3	Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. • Advocate and practice safe, legal, and responsible use of information and technology. • Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity. • Demonstrate personal responsibility for lifelong learning. • Exhibit leadership for digital citizenship.	Students use their interpersonal skills in assigned leadership roles to help others stay focused and to communicate when they need support in order to complete goals. Students use technology tools for problem solving, self-directed learning, and extended learning activities. Students appreciate, accept, and work cooperatively with others in both academic and social contexts. Students learn what a virus is. Students recognize and understand the effects of technology on home and school environments. Students recognize and understand how technology supports individual and group work.	Students identify the effects of a virus on hardware and software. Students identify the need for acceptable use policies (AUP) and discuss basic issues related to the responsible use of technology and information. Students abide by district restrictions and follow the district's policy of asking permission before using Internet sites. Students are introduced to and discuss some of the issues related to the responsible use of technology. Students participate in teacher-led discussions about Internet safety and the importance of protecting identity on-line, in e-mail, and/or websites, and of limiting distribution of information and pictures.	Technology tools Internet "Raising a Digital Child" – by Mike Ribble

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		Students recognize and understand how technology assists students with disabilities. Students practice responsible use of technology systems. Students identify consequences of vandalism and inappropriate use of hardware and software.	Students show regard for their peers and adults by logging off or shutting down technology tools and by keeping their technology area clean.	
4 - 6	Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. • Advocate and practice safe, legal, and responsible use of information and technology • Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity • Demonstrate personal responsibility for lifelong learning • Exhibit leadership for digital citizenship	Students select appropriate technology tools and resources needed to communicate information to others, to achieve personal goals, and to support independent learning. Students identify and describe the impact of technology on home, school, and business environments. Students identify how technology supports individual and group work and assists students with disabilities. Students discuss issues related to responsible use of technology and information and describe personal consequences of inappropriate use. Students discuss common use of technology in daily life and the advantages and disadvantages its use provides.	Students use technology tools (i.e., calculators, data collection probes, videos, educational software) for problem solving, self-directed learning, and extended learning activities. Students practice responsible use of technology systems. Students identify the consequences of viruses, vandalism, and the inappropriate use of hardware and software. Students comply with acceptable use policy. Students identify the need for acceptable use policies (AUP), discuss basic issues related to responsible use of technology and information, describe personal consequences of inappropriate use, and begin to cite sources for information found through electronic searches.	"Raising a Digital Child" – By Mike Ribble

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		Students debate changes in technology and their effect on daily life for individuals, society, and the global community.		
7 - 8	Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. • Advocate and practice safe, legal, and responsible use of information and technology • Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity • Demonstrate personal responsibility for lifelong learning • Exhibit leadership for digital citizenship	Students exhibit leadership, ethical behavior, respect for others; accept responsibility for personal actions considering the impact on others; take the initiative to plan and execute tasks, and interact productively as a member of a group. Students demonstrate ethical behavior and work responsibly and collaboratively with others, in academic and social contexts, to accomplish both individual and team goals related to improved academic, extracurricular, and co-curricular performances. Students analyze current information technologies and the effect these technologies have on school, workplace, and society. Students recognize personal limits in their knowledge and develop strategies and skills for using technology to seek information.	Students comply with acceptable use policy. Students discuss legal and ethical behaviors related to acceptable use of information and communication technology (i.e., privacy, security, copyright, file-sharing, plagiarism) and predict the possible effects of unethical use of technology (i.e., consumer fraud, intrusion, spamming, virus setting, hacking) on the individual and society, as well as identify methods for addressing these risks. Students model ethical behavior relating to security, privacy, computer etiquette, passwords and personal information. Students demonstrate an understanding of copyright by citing sources in papers, projects and multimedia presentations. Students identify the methodologies that individuals and businesses can employ to protect the integrity of technology systems.	www.mybytes.com www.digitalcitizenshiped.com/ “Raising a Digital Child” – by Mike Ribble http://digitalcitizenship.net/Home_Page.html

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		Students develop an understanding of the need to protect their identity online, in e-mail, and on websites, limit the distribution of personal information and pictures/video, and evaluate the authenticity of e-mail that solicits personal information.		

New Milford Public Schools

K – 8 Education Technology Competencies

Technology Standard: **Technology Operations and Concepts**

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
K - 3	Students demonstrate a sound understanding of technology concepts, systems, and operations. • Understand and use technology systems • Select and use applications effectively and productively • Troubleshoot systems and applications • Transfer current knowledge to learning of new technologies	Students identify input and output devices used with computers. Students understand the importance of using technology in their daily lives. Students demonstrate how to properly log on and off a network. Students discuss the advantages and disadvantages of viewing work on a monitor or from a printout. Students confidently know the parts of a computer. Students operate productivity software and its various uses effectively. Students are able to display proper hand placement on a keyboard. Students are able to display proper mouse skills using all buttons.	Students properly turn computer on and off. Students properly log on and off the network. Students are able to create, edit, save, print, and open within a program. Students demonstrate the ability to navigate in virtual environments such as electronic books, simulation software, and websites. Students have basic keyboarding skills. Students have proficient mouse skills. Students communicate about technology using developmentally appropriate and accurate terminology.	Keyboard Mouse Monitor Printer C.P.U. Speakers/Headphones Projector Software Internet browser File system Word processing

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
			Students are able to access, save, and retrieve files from a network.	
4 - 6	Students demonstrate a sound understanding of technology concepts, systems, and operations. • Understand and use technology systems • Select and use applications effectively and productively • Troubleshoot systems and applications • Transfer current knowledge to learning of new technologies	Students discuss common uses of technology in daily life. Students understand the benefits of being on and using a network. Students discuss the advantages and disadvantages of viewing work on a monitor or from a printout. Students determine which input/output devices to use. Students identify various software applications that can be applied to learning projects. Students are able to use properly external devices to save or load various file types (i.e., CD-R, USB drives, Internet).	Students continue to develop proper keyboarding skills. Students utilize multimedia tools effectively and apply in slideshow/video presentations and works of art. Students independently operate school computers. Students confidently apply knowledge of digital tools to collect, organize, and analyze data and/or research. Students develop more advanced file management skills. Students are able to access, save, and retrieve files from a network. Students are introduced to spreadsheets and their uses. Students are able to apply previous knowledge of digital technology operations to analyze and to solve current hardware and software problems. Students understand the uses of the CTRL+ALT+DEL function and when to use it.	Multimedia tools Internet tools Computer OS Peripherals Searching file systems Slideshow Presentations Spreadsheets Electronic communication devices

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
7 - 8	Students demonstrate a sound understanding of technology concepts, systems, and operations. • Understand and use technology systems • Select and use applications effectively and productively • Troubleshoot systems and applications • Transfer current knowledge to learning of new technologies	Students identify software that is needed to make hardware work properly. Students learn how device drivers enable or restrict the movement of peripherals. Students know what information is needed to access a user's home directory. Students learn about computer security and file management. Students understand advanced concepts of networking. Students are able to manage files and folders within a network and external devices as well as perform backups. Students identify various software applications that can be applied to learning projects. Students are able to properly use external devices to save or load various file types (i.e., CD-R, USB drives, Internet). Students know how to properly and effectively manage a database.	Students perform advanced word processing skills independently. Students employ data-collection technology such as spreadsheets and databases to gather, view, analyze, and report results. Students integrate a variety of file types to create and illustrate a document or presentation. Students are able to access, save, and retrieve files from a network. Students utilize multimedia tools effectively and apply in slideshow/video presentations and works of art. Students understand the uses of the CTRL+ALT+DEL function and when to use it. Students select and use the appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. Students are able to apply Internet skills to perform research for classroom assignments. Students independently develop and apply strategies for identifying and solving routine hardware and software problems.	Spreadsheets Database drivers Computer OS File system explorer Hardware peripherals Multimedia tools Networks Device drivers Electronic communication devices

New Milford Public Schools

K – 8 Education Technology Competencies

Grades K – 3 Skills

Upon completion of third grade, the students will be able to work cooperatively and productively with others in small groups and use age-appropriate instructional rubrics and other tools to assess performance related to the learning goal. The students will practice correct keyboarding and proper care of computer software and hardware, create text using word processing software, and use email to send messages. The students will use an Internet browser to access websites for developmentally appropriate technology resources to locate information for assignments. They will also use presentation software to explain and to communicate information using drawing or paint software to create a picture.

Strand	Skills Required by End of Grade 3
Technology Awareness	Identifies different parts of a computer and their use. Properly starts up and shuts down a computer Uses a mouse to open/close a program, highlight text, choose menus, and complete basic drawings Logs on and off a computer Properly saves and closes files Selects a network print device and prints a document
Keyboarding	Uses a keyboard to input upper and lower case letters, numbers, spaces, and punctuation Uses special keys to navigate within and edit a document (i.e., tab key, arrow keys, enter, delete, and backspace) Uses two hands to informally type a paragraph.
Word Processing	Inputs and edits a sentence or short paragraph Correctly spaces while typing a sentence or paragraph Modifies format of document (i.e., font, font size, alignment, text color)
Painting/Drawing/Graphics	Uses a program's drawing tools to create a simple picture Explains the difference between the different drawing tools Adds text to a picture
Multimedia Presentations	Combines several simple pictures into short slide show Includes appropriate sounds and/or voice in their presentations

	Describes transitions and uses them appropriately in their slide shows
Network Awareness	Logs on and off a network Opens files from and saves files to a file server

New Milford Public Schools

K – 8 Education Technology Competencies
Grades 4 - 6 Skills

Upon completion of the sixth grade, the students will work productively in a group setting and demonstrate flexibility in assuming different roles and responsibilities. The students will engage in a problem-solving process that promotes questioning, investigating, and finding solutions. They will begin to select appropriate tools for problem-solving, self-directed learning, and extended learning activities. The sixth grade students understand the meaning of acceptable use, protect online identity, and demonstrate personal responsibility in the use of technology. The students continue to expand the use of word processing software, begin to use a spreadsheet to perform calculations, understand the functionality of a database, and create a simple multimedia project. Students use technology tools in a collaborative setting to generate products, create ideas, and to communicate effectively.

Strand	Skills Required by End of Grade 6
Technology Awareness	Opens, moves, resizes a window Creates and deletes folders Creates, renames, moves, copies files
Keyboarding	Can touch type
Word Processing	Cuts, copies, pastes text Uses spell checker Imports, moves, and manipulates graphics in a word processing document
Painting/Drawing/Graphics	Resizes objects Uses various tools such as lasso, line, shape, and text Moves, groups, and copies objects
Spreadsheets	Understands the purposes of a spreadsheet Knows parts of a spreadsheet such as cells, rows, and columns Navigates within a spreadsheet Selects cells or blocks of cells Inputs text and numbers Sorts information

	Creates simple charts and graphs
Information Systems	Opens files in a CD Uses an electronic encyclopedia Searches for information using key words, names, and phrases
Multimedia Presentations and Electronic Presentations	Defines basic elements of a multimedia presentation Creates a multi-page presentation including text, graphics, photos, scanned images, and buttons Creates templates including common backgrounds
Network Awareness	Accesses, saves to, and retrieves files from a network Chooses printers
Internet/Telecommunications	Creates, opens, responds to, deletes, and e-mails Opens and navigates websites Uses search engine to find web information Uses websites to find information for projects

New Milford Public Schools

K – 8 Education Technology Competencies

Grades 7 - 8 Skills

Upon completion of the eighth grade, the students will demonstrate ethical behavior and work responsibly and collaboratively with others to accomplish both individual and team goals. The students will become a more critical thinker and problem-solver and use technology tools to solve problems and make decisions related to classroom assignments. The eighth grade students will create products that reflect a growing understanding of visual language and the effective use of technology tools. The students will use expanded features of spreadsheet, database, and presentation software and use telecommunications to publish information. As proficient users of technology, the students will demonstrate a sound understanding of the nature and operation of technology systems and will effectively use telecommunications tools for research, collaboration, and communication. The students understand the need for individuals and businesses to protect the integrity of technology systems.

Strand	Skills Required by End of Grade 8
Technology Awareness	Understands and respects copyright laws
Keyboarding	Understands relative position of the keys on a keyboard and uses formal keyboarding skills
Word Processing	Uses the "save as" feature to create copies or new versions of documents Understands how to position and remove different kinds of tabs Inserts and customizes footers and headers Manipulates the layout of a document using margins, justification, and line spacing Uses the indents, page breaks, spell check, and thesaurus Creates or imports spreadsheets into word-processed documents Uses find and replace commands
Spreadsheets	Inserts and deletes cells Formats a cell or block of cells Displays or removes grid, column, and row headings Changes column and row width Adds headers and footers Builds formulas into a cell and can copy and paste values and formulas into selected cells Is able to analyze the effects of changes made to a spreadsheet

	Designs a spreadsheet and uses the data to create charts and graphs
Database	Determines what items to use in a physical database Retrieves records from physical databases – single field, exact match Retrieves records from an electronic database – single field, exact match
Painting/Drawing/Graphics	Manipulates and exports graphics into other documents Imports a digital image into a word processing document Applies special effects to a graphic (rotate, stretch, and perspective)
Multimedia Presentations and Electronic Presentations	Understands the concept of a template and the use of color schemes, background items, and clip art within the template Creates a series of screens that show objects and backgrounds changing in simple animation Uses cell-based animation Uses pre-recorded sounds or CDs within the presentation Digitizes and saves sound from an audio CD to include presentation Records sound, saves in a digitized format, and includes in presentation Edits digitized sounds Plays digitized movies using a stand-alone application Captures video from a source (camcorder, VCR) and saves in digitized form Adds digitized movies to a presentation
Network Awareness	Logs on and off a network with a password Accesses, saves to, and retrieves files from a network
Internet/Telecommunications	Attaches a document to an e-mail message Enters a Uniform Resource Locator (URL) Uses the directory buttons in the web browser Uses the tool bar in a web browser Saves sites using a bookmark, hotlist, or favorite Evaluates web pages using evaluation criteria Creates a class or school home page Can develop a personal portfolio Adds images from the web to their work
Information Systems	Uses electronic resources including software and web pages Uses keyword search to locate information Identifies key words, names, phrases, major headings, and groupings for a search Designs a title search strategy, narrowing the search parameters as needed Can do a Boolean word search Skims articles for major ideas Transfers notes to a notepad or word processor