

New Milford Public Schools K-8 Education Technology Scope and Sequence

Introduction

The New Milford Education K-8 Technology Scope and Sequence outlines concepts, skills, and processes using technology hardware and software that students will develop K-8. It complements the New Milford Public Schools' K-8 Education Technology Competencies (2010). It also aligns with 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 in the New Milford Public Schools K-8 Education Technology Competencies (2010).

A scope and sequence was determined to be the most effective format for presenting targeted technology objectives because most technology instruction will be presented to students through the content areas. In the coming years, teachers will be folding technology concepts, skills, and processes into units of content curriculum, and students will learn and practice using technology as part of a project or activity in literacy, mathematics, science, or social studies.

For example, in third grade students will develop advanced keyboarding skills to increase proficiency and efficiency as they begin to use word processing to type various works written in the classroom. During the beginning and a good part of third grade, our main focus is on keyboarding skills. By the time students are in third grade, they have already learned letter/number location and recognition on the keyboard. We progress into using both hands properly, correct posture, and increasing their words per minute.

In seventh and eighth grade, students use Microsoft Word and Excel for science. They do labs in the classroom and then create data tables and charts in Excel and add them to detailed lab reports written in Word. Over time, the scope and sequence can be easily adjusted to reflect changes in hardware, software, and student competencies.

Technology objectives are targeted in the following areas:

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

The guide for implementing each objective is expressed in three stages:

Exposure: At this level, teachers model the use of targeted concepts, skills, and processes for students.

Practice: At this level, students begin and continue to practice the use of targeted concepts, skills, and processes.

Independence: Students are able to employ the targeted concepts, skills, and processes independently.

There is overlap in these three stages throughout the scope and sequence to accommodate expected variety in students' readiness for and ability to perform targeted outcomes.

New Milford Public Schools Education Technology Scope and Sequence

E=Exposure P=Practice I=Independence

Technology Operations and Concepts	K	1	2	3	4	5	6	7	8
Computer Operations									
Students use correct posture and position at computer.									
Students use developmentally appropriate terminology to communicate about technology.	E	EP	P	P	PI	I	I	I	I
Students identify computer hardware components and peripheral devices.	E	EP	P	P	PI	I	I	I	I
Students start, restart, and correctly shut down the computer.	E	EP	PI	I	I	I	I	I	I
Students identify the parts of a computer: monitor, keyboard, mouse, CPU, speakers, and control buttons.	E	EP	P	PI	I	I	I	I	I
Students use the mouse to choose options in a menu.	E	EP	P	PI	I	I	I	I	I
Students click, double click, and click/drag the mouse.	E	P	I	I	I	I	I	I	I
Students insert, eject, and properly care for a CDROM.		E	EP	PI	I	I	I	I	I
Students identify correct software application icon for a task.		E	EP	PI	I	I	I	I	I
Students save files and folders to different disks and drives.		E	EP	PI	I	I	I	I	I
Students create and organize folders in multiple ways.					E	EP	PI	I	I
Students use search operation for folders and files.						E	EP	PI	I
Students change control panel and set options.						E	EP	PI	I
Students create shortcuts on desktop.						E	EP	PI	I
Students check for computer viruses and know how to prevent them.				E	E	EP	PI	I	I
Students recognize common file extensions (doc, jpg, bmp, xls, exe).				E	E	EP	PI	I	I
Students understand and use memory size.				E	E	EP	PI	I	I
Students understand the use of digital cameras, scanner, LCD projector, and fax machine.		E	E	EP	EP	PI	I	I	I

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Technology Operations and Concepts (continued)	K	1	2	3	4	5	6	7	8
Students use content specific hardware such as graphing calculators, scientific probes, and PDAs.					E	EP	PI	PI	I
Students use content specific tools and software (science probes, calculators, simulation, etc.) to support learning and research.					E	EP	EP	PI	PI
Students solve routine technical problems using online help and troubleshooting strategies.			E	E	EP	PI	PI	I	I
Students identify and use various drives.			E	E	EP	PI	PI	I	I
Keyboarding									
Students use developmentally appropriate keyboarding techniques.	E	E	EP	PI	PI	PI	I	I	I
Students use a keyboarding program to type the home row keys using correct form.		E	EP	PI	PI	PI	I	I	I
Students use the keyboard to type capitals and lowercase letters, numbers, and symbols.	E	EP	PI	I	I	I	I	I	I
Students use punctuation keys.	E	EP	PI	I	I	I	I	I	I
Students use the enter, space bar, and backspace keys.	E	EP	PI	I	I	I	I	I	I
Students use arrow, tab, shift, and caps lock keys.	E	E	EP	PI	I	I	I	I	I
Students type words.	E	EP	PI	I	I	I	I	I	I
Students type phrases.	E	EP	PI	I	I	I	I	I	I
Students type sentences.	E	E	EP	PI	I	I	I	I	I
Program Operations									
Students recognize program and document icons.	E	E	EP	PI	PI	I	I	I	I
Students select appropriate program/resource to complete a task.		E	EP	EP	PI	PI	PI	I	I
Students open and exit programs correctly.	E	EP	PI	PI	I	I	I	I	I
Students click on icon, folder, or document to open or start a program.	E	EP	PI	PI	I	I	I	I	I

New Milford Public Schools Education Technology Scope and Sequence

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Technology Operations and Concepts (continued)	K	1	2	3	4	5	6	7	8
Students use "Save" and "Save As" appropriately to save documents or to create new versions of a document.	E	EP	PI	PI	I	I	I	I	I
Students create, name, and save new files.	E	E	EP	PI	PI	I	I	I	I
Students open, close, add, and delete files.	E	E	EP	PI	PI	I	I	I	I
Students rename a file.	E	E	EP	PI	PI	I	I	I	I
Students create a new folder and move files to that folder.		E	EP	PI	PI	I	I	I	I
Students view file Properties to determine memory size.				E	EP	PI	I	I	I
Students use a virus scanner to protect and maintain their files.				E	EP	PI	I	I	I
Students use Page Setup and Print Preview.			E	E	EP	PI	I	I	I
Students print a document.	E	EP	PI	I	I	I	I	I	I
Students open, close, minimize, and resize a window.			E	E	EP	PI	I	I	I
Students move between two or more open programs (windows).			E	E	EP	PI	I	I	I
Students use the spell checker, dictionary, and thesaurus.			E	EP	EP	PI	I	I	I
Students set preferences and options in different software programs.				E	EP	PI	I	I	I
Students use content specific software such as spreadsheets, databases, and concept mapping software.		E	EP	PI	I	I	I	I	I
Network Operations									
Students log on and off the NMPS network correctly.	E	EP	PI	PI	I	I	I	I	I
Students use personal password to log into network account.		E	EP	PI	PI	I	I	I	I
Students save files in a group folder on NMPS network.		E	EP	PI	PI	I	I	I	I
Students manage their own files (move, copy, delete) on network.			E	EP	EP	PI	PI	I	I
Students use a web browser, buttons, and hypertext links.				E	EP	PI	PI	I	I

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Technology Operations and Concepts (continued)	K	1	2	3	4	5	6	7	8
Network Operations (continued)									
Students use a favorites or bookmarked list to access web sites.		E	EP	PI	PI	I	I	I	I
Students effectively use a variety of search engines, online databases, and search techniques.			E	E	EP	EPI	EPI	I	I
Students evaluate accuracy and quality of online information.			E	E	EP	EP	PI	PI	I
Students use correct bibliographic citation for Internet resources.				E	EP	EP	PI	PI	I

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Digital Citizenship	K	1	2	3	4	5	6	7	8
Students describe and exhibit responsible and appropriate use of computers, disks, and peripherals.	E	EP	PI	PI	I	I	I	I	I
Students explain and practice the rules of DPS policies related to Internet and computer use.	E	E	EP	PI	PI	I	I	I	I
Students show respect for the work of others.	E	EP	PI	PI	I	I	I	I	I
Students explain and respect copyright law.		E	EP	PI	PI	PI	I	I	I
Students identify ethical and unethical uses of computers, networks, and other technologies.				E	EP	PI	PI	PI	I
Students demonstrate an understanding of plagiarism and its consequences.	E	E	EP	PI	PI	PI	I	I	I
Students explain Internet safety guidelines.	E	E	EP	PI	PI	PI	I	I	I
Students responsibly use their network password privilege.		E	EP	PI	PI	PI	I	I	I
Students use email appropriately.			E	E	EP	PI	PI	I	I
Students are respectful of school computer and network privacy.			E	E	EP	PI	PI	I	I
Students explain how hacking, filtering, information technology, business practices, government controls, access to technology, and privacy issues affect them and the world in general.					E	E	EP	EP	P

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Creativity and Innovation	K	1	2	3	4	5	6	7	8
Students identify the functions and advantages of computer productivity software.		E	E	E	EP	PI	PI	I	I
Word Processing – Max Write, Word									
Students use toolbar icons: new, open, close, save, print.	E	EP	PI	PI	I	I	I	I	I
Students use toolbar icons: undo, copy, cut, paste.	E	EP	EPI	PI	PI	I	I	I	I
Students use toolbar icons to change font.	E	EP	EP	PI	PI	I	I	I	I
Students use dropdown menus to operate a word processing program.									
Students file: new, open, close, save, print.	E	EP	PI	PI	PI	I	I	I	I
Students file: save as, page setup, print preview, send to.		E	EP	EP	EP	PI	PI	I	I
Students file: save as web page, web page preview, properties.			E	E	EP	EP	PI	PI	I
Students edit: undo, cut, copy, paste, select all, clear.		E	EP	EP	PI	PI	I	I	I
Students edit: find, replace, go to, paste as.		E	E	EP	PI	I	I	I	I
Students view: normal, print layout, toolbars.		E	E	EP	EP	PI	PI	I	I
Students view: header/footer, zoom, full screen.		E	E	EP	EP	PI	PI	I	I
Students insert: page number, date, picture.		E	EP	EP	PI	PI	I	I	I
Students insert: text box, hyperlink.		E	EP	EP	EP	PI	PI	I	I
Students format: font, paragraph.		E	EP	EP	PI	PI	I	I	I
Students format: columns, tabs, border/shading, bullets, numbering.		E	EP	EP	PI	PI	PI	I	I
Students use tools: spell check.		E	EP	EP	I	I	I	I	I
Students use table: insert, delete, add rows, add columns.			E	EP	PI	I	I	I	I
Students use table: select, split cells, autofomat, autofit, hide gridlines.				E	EP	EP	EP	PI	PI

Creativity and Innovation (continued)	K	1	2	3	4	5	6	7	8
Students use help features.	E	E	EP	EP	PI	PI	I	I	I
Students use icons of paint in Max Write to draw pictures.	E	EP	EP	PI	I	I	I	I	I
Students use features of standard and formatting toolbars.		E	EP	EP	PI	PI	I	I	I
Students use features of draw and SMART toolbars.	E	E	EP	EP	PI	PI	I	I	I
Students insert, move, and resize a graphic in a document.		E	EP	EP	EP	PI	PI	I	I
Slide Presentation – Max Show, PowerPoint									
Students use toolbar icons to create a simple slide presentation.	E	E	EP	EP	PI	PI	I	I	I
Students create a new presentation from scratch or use a design template.		E	EP	EP	EP	PI	PI	I	I
Students format slide layout, color scheme, background, design template.		E	EP	EP	EP	EP	PI	PI	I
Students add action and animation to slide show.		E	EP	EP	EP	PI	PI	I	I
Students add sound, pictures, video to slide show.		E	EP	EP	EP	PI	PI	I	I
Students add text box, slide number, date/time, picture, chart, table to slide show.			E	EP	PI	I	I	I	I
Students individually create a multimedia slide show presentation.				EP	EP	EP	PI	PI	I
Spreadsheet – Max Count, Excel									
Students use toolbar icons to create simple tables and charts.	E	E	EP	EP	PI	PI	I	I	I
Students understand and explain the purpose and use of a spreadsheet.		E	EP	EP	EP	PI	PI	PI	I
Students add, delete, move text and numbers in an existing spreadsheet.		E	EP	EP	EP	PI	PI	I	I
Students add, delete, move text and numbers in a created spreadsheet.		E	EP	EP	EP	EP	PI	PI	I
Students insert cell, row, column, worksheet, chart.			E	EP	EP	EP	PI	PI	I
Students format cell, row, column, sheet.			E	EP	EP	EP	PI	PI	I
Students insert function: sum, average, product.			E	EP	EP	EP	EP	PI	PI

Creativity and Innovation (continued)	K	1	2	3	4	5	6	7	8
Spreadsheet – Max Count, Excel (continued)									
Students insert a spreadsheet or graph into another document.			E	E	EP	EP	EP	PI	PI
Students utilize spreadsheet to analyze data and test hypothesis.			E	EP	EP	EP	PI	PI	PI
Concept Mapping – Kidspiration, Inspiration									
Students create graphic organizers to develop and structure ideas.		E	EP	EP	EP	PI	PI	PI	I
Students use icons to brainstorm and organize ideas and information.		E	EP	EP	EP	PI	PI	PI	I
Students use graphics, symbols, and text to represent ideas and information.		E	EP	EP	EP	PI	PI	I	I
Students link ideas and information to show relationships.		E	EP	EP	EP	EP	PI	PI	PI
Students use paint feature of Kidspiration to create representations of ideas.	E	E	EP	EP	PI	PI			
Students create an outline/diagram of a topic for prewriting.		E	EP	EP	PI	PI	I	I	I
Students create an outline/diagram for a report or presentation.		E	E	EP	EP	PI	PI	I	I
Database – Access									
Students explain the purpose of a database and show how it works.			E	E	EP	EP	EP	PI	PI
Students add, delete, and move text in an existing database template.			E	EP	EP	EP	PI	PI	PI
Students create and sort data on a simple database.			E	E	EP	EP	EP	PI	PI
Students add, delete, and move text in a designed database.			E	E	EP	EP	EP	PI	PI
Students use find, sort, show, and hide functions.			E	E	EP	EP	EP	PI	PI
Students use a database to look for relationships and test hypotheses.			E	E	E	EP	EP	EP	PI
Students design, create, and test the effectiveness of a database.				E	E	EP	EP	EP	PI

Creativity and Innovation (continued)	K	1	2	3	4	5	6	7	8
Internet									
Students enter an Internet address (URL) to access a website.			E	E	EP	EP	PI	PI	PI
Students access websites bookmarked by teacher.		E	EP	EP	PI	PI	I	I	I
Students bookmark websites.			E	E	EP	EP	PI	PI	I
Students create simple web pages using a web page design/editing program.			E	E	EP	EP	PI	PI	I
Students create hypertext links and insert graphics into simple web pages.			E	E	EP	EP	PI	PI	I
Students collaborate to create class web pages or online class projects.			E	E	EP	EP	PI	PI	I
Students open and send email messages.				E	E	EP	EP	PI	PI
Students use email to communicate with experts and to collaborate with peers.				E	E	EP	EP	PI	PI
Students send email to groups.				E	E	EP	EP	PI	PI
Students open and send email attachments.				E	E	EP	EP	PI	PI
Students use interactive real time filtered online communication (CHAT) to collaborate with peers.				E	E	EP	EP	PI	PI
Students participate in video conferencing to communicate and to collaborate with peers.				E	E	EP	EP	PI	PI
Multimedia Program									
Students create a linear multimedia slide show containing text and graphics.				E	E	EP	EP	PI	PI
Students modify the color scheme in their multimedia product.				E	E	EP	EP	PI	PI
Students insert graphs and charts into their multimedia product.				E	E	EP	EP	PI	PI
Students use transitions and create simple animations in a multimedia program.				E	E	EP	EP	PI	PI
Students add sounds to a multimedia presentation.				E	E	EP	EP	PI	PI
Students use different views (outline, slide sorter, etc.) to create and organize multimedia presentations.				E	E	EP	EP	PI	PI

Creativity and Innovation (continued)	K	1	2	3	4	5	6	7	8
Multimedia Program (continued)									
Students print audience handouts to go with their multimedia product.				E	E	EP	EP	PI	PI
Students collaborate in the creation of a multimedia slide show containing text and graphics.				E	E	EP	EP	PI	PI
Students create a nonlinear (branching) presentation or instructional game.					E	E	EP	EP	PI
Students use graphics and video software to create graphics, edit photos, and create short movies.					E	E	EP	EP	PI
Desktop Publishing Software									
Students collaborate to create a newsletter using Desktop Publishing software.				E	E	EP	EP	PI	PI
Students create a newsletter, brochure, or booklet using Desktop Publishing software.				E	E	EP	EP	PI	PI
Students use the principles and elements of visual design (line, balance, contrast, variety, center of interest) in the creation of Desktop Publishing products.				E	E	EP	EP	PI	PI
Students use columns, text boxes, headlines, and graphics in their Desktop Publishing product.				E	E	EP	EP	PI	PI
Students collaborate to create a tri-fold brochure using Desktop Publishing software.				E	E	EP	EP	PI	PI
Students use color, graphics, fonts, and white space effectively.				E	E	EP	EP	PI	PI
Students create a greeting card, label, sticker, bookplate, or simple sign using Desktop Publishing software.		E	E	EP	EP	PI	PI	I	I
Students use Desktop Publishing software to create brochures with graphics, letterhead, resumes, and business cards.				E	E	EP	EP	PI	PI

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Communication and Collaboration	K	1	2	3	4	5	6	7	8
Students explain the concept and identify the components of e-mail, such as mailboxes, address, and e-mail formatting.			E	E	EP	P	P	I	I
Students explain the concept of distance learning.			E	E	EP	P	P	I	I
Students send and receive messages and ideas using proper structure, format, and syntax in email communication.					E	E	EP	P	I
Students send and receive messages with attachments.				E	E	P	I	I	I
Students transfer information through electronic communication such as facsimile.				E	E	P	I	I	I
Students use information gathered through electronic communication in appropriate curriculum activities (i.e., email, Internet, telephone, fax).			E	E	E	E	E	P	PI
Students participate in discussion groups via email.			E	E	EP	P	P	I	I
Students collaborate in the creation of a multimedia slide show containing text and graphics.				E	E	EP	EP	PI	PI
Students collaborate with peers and others to solve problems and to develop solutions using technology tools and resources.			E	EP	EP	PI	PI	I	I

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Research and Information Fluency	K	1	2	3	4	5	6	7	8
Students do a keyword search using an online encyclopedia.		E	EP	EP	P	PI	PI	I	I
Students use search engines.			E	E	EP	EP	PI	PI	I
Students use Boolean search terms (AND, OR, NOT).			E	E	EP	EP	PI	PI	I
Students can search using a keyword, name, title, author, and phrase.		E	EP	EP	P	PI	PI	I	I
Students design a search strategy, narrowing the search parameters as needed.			E	E	EP	EP	PI	PI	I
Students develop and implement a project using online resources.			E	E	EP	EP	PI	PI	I
Students analyze and evaluate the accuracy and credibility of web resources.				E	EP	EP	PI	PI	I
Students create reports using information from an online source and a word processor.				E	EP	EP	PI	PI	I
Students gather information from several online sources and save the text in a word processing document.				E	EP	EP	PI	PI	I
Students use multiple search engines.				E	EP	EP	PI	PI	I
Students use a library database to find information.			E	E	EP	EP	PI	PI	I
Students use the find function in browser to locate specific information on web page.				E	EP	EP	PI	PI	I
Students cite the resources they use.				E	EP	EP	PI	PI	I
Students develop and implement a project using online resources.				E	EP	EP	PI	PI	I
Students sort and filter data.			E	EP	EP	EP	PI	PI	PI

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Critical Thinking, Problem Solving, and Decision Making	K	1	2	3	4	5	6	7	8
Students collaborate with peers and others to solve problems and to develop solutions using technology tools and resources.			E	EP	EP	PI	PI	I	I
Students use multiple resources, tools, and technologies to solve complex problems and to present solutions.			E	EP	EP	PI	PI	I	I
Students analyze/reflect on collaboration, design, research, problem solving process.			E	E	EP	EP	PI	PI	I
Students create electronic portfolios to demonstrate technology skills and content area knowledge.					E	EP	EP	PI	PI