

North Shoreview Montessori School

Computer & Technology Curriculum Guide

Prepared by the NSM Technology Committee, May 2008
Revised September 2010

Guiding Principles

Federal goals for technology in education (1996)

- (1) Modern computers and learning devices will be accessible to every student;
- (2) Classrooms will be connected to one another and to the outside world;
- (3) Educational software will be an integral part of the curriculum; and
- (4) Teachers will be ready to use and teach with technology.

Bridging the Digital Divide (2006)

Although more Americans now own computers, certain groups are still far less likely to have computers or online access. Lack of such access affects the ability of children to improve their learning with educational software, adults to learn valuable technology skills, and families to benefit from online connections to important health and civic information.

Subject frameworks for California Public Schools (2005)

Technology should be used to promote learning. The focus must be on learning, using technology as a tool rather than as an end in itself. ... The challenge for educators, parents, and policymakers is to ensure that technology supports, but is not a substitute for, the development of reasoning and problem-solving skills. ... All students need to learn basic computer skills, and they should become familiar with several computer applications. They must have the ready ability to learn how to use computer applications and how to navigate and make use of the Internet. These skills can be taught starting in the elementary grades.

San Mateo-Foster City School District Technology Plan, 2005-2010

Our desired outcomes have been to raise student achievement, articulate curriculum throughout grades K-8, and equip students with the technology skills required for further education and the workplace.

Standards referenced in this document are drawn from the SMFCSD Technology Plan and subject frameworks for California Public Schools, adapted to the North Shoreview Montessori curriculum.

	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Middle School
Technology Skills						
Relevant software	Mac OS Windows (pending)	Mac OS Windows (pending)	Mac OS Windows (pending)	Mac OS Windows (pending)	Mac OS Windows (pending)	Mac OS Internal e-mail client (pending)
Lessons & Projects	Logging in & navigation Computer rules	File management Computer rules	File management Computer rules	Photos and scanning Computer rules	Photos, video, and scanning Computer rules	Email and web safety and etiquette
Standards introduced at this grade level:	Identifies physical components of the computer e.g. monitor, keyboard, mouse Knows fundamental computer system vocabulary (desktop, cursor, menu bar, folder, etc.). Uses fundamental computer vocabulary (network, server, virus, hardware, software, application, window, etc.) Logs in with username and password Opens, scrolls, and closes application windows. Knows how to turn on and shut down a computer, if so instructed Knows how to print with supervision [to default printer] and uses appropriate printing etiquette Ethical behavior in regard to information technology, including the concept of copyright.	Knows how to save and retrieve files in a program. Knows how to print to other networked printers, with permission Troubleshoots common system problems and asks for help, e.g. when to reboot Ethical behavior in regard to information technology, including the concept of copyright. Introduced to Internet safety and privacy Continue to develop skills from previous grade.	Navigates to class or individual folders Locates and retrieves prior work. Accesses files from external disk and/or network server. Collects and organizes files. Can move or copy files to different locations (desktop, home folder, shared folders). Understands and navigates the lab or classroom server environment. Uses Undo as a troubleshooting technique. Uses common keyboard commands. Troubleshoots available peripherals and their associated utilities. Understands age-appropriate Internet safety and privacy issues	Explains differences and compatibilities between operating systems. Uses input devices (e.g., microphone, scanner). Uses built-in help systems Understands age-appropriate Internet safety and privacy issues	Continue to develop skills from previous grade. Understands age-appropriate Internet safety and privacy issues	Understands age-appropriate Internet safety and privacy issues Uses a telecommunications program to send and receive messages within class/school. Where applicable, communicates with experts or authors using class/teacher e-mail account.

	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Middle School
Keyboarding Skills						
Relevant software	BBC Typing	BBC Typing	BBC Typing FreeTypingGames.net	FreeTypingGames.net	FreeTypingGames.net	FreeTypingGames.net
Lessons & Projects	Weekly typing practice	Weekly typing practice	Weekly typing practice	Weekly typing practice	Weekly typing practice	Weekly typing practice
Standards introduced at this grade level:	<p>Uses a basic keyboard and mouse to type simple input (e.g. shift key to make capital letters) and to navigate programs.</p> <p>Uses spacebar, letter and number keys, shift, delete, return/enter, and arrow keys as appropriate.</p> <p>Uses both hands on a basic keyboard with a mouse</p> <p>Locates and uses upper and lowercase letters, numbers, symbols, and special keys (e.g. Caps Lock).</p> <p>Uses all alphabet keys in keyboarding program and builds speed and accuracy</p>	<p>Uses touch typing skills on computer keyboard to build speed and accuracy</p> <p>Continue to develop skills from previous grade.</p>	<p>Achieves basic proficiency with touch typing skills on computer keyboard.</p>	<p>Achieves 20 words per minute typing.</p>	<p>Maintains proficiency in touch typing.</p>	<p>Achieves 30 words per minute touch typing.</p>

	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Middle School
<i>Math Curriculum</i>						
Relevant software	Everyday Math website Harcourt Math website Internet4Classrooms.com other websites	Everyday Math website Harcourt Math website Internet4Classrooms.com other websites	Everyday Math website Harcourt Math website Internet4Classrooms.com other websites	Everyday Math website Harcourt Math website Internet4Classrooms.com Microsoft Excel	Everyday Math website Harcourt Math website Internet4Classrooms.com Microsoft Excel	Microsoft Excel Geometer's Sketchpad Lego Mindsprings other websites
Lessons & Projects	Introduction to websites Lunchtime math club Classroom use	Introduction to websites Lunchtime math club Classroom use	Introduction to websites Lunchtime math club Classroom use	Excel projects Lunchtime math club Classroom use	Excel projects Lunchtime math club Classroom use	Excel projects Lunchtime math club Classroom use
Standards introduced at this grade level:	Computer use directly related to subject content.	Computer use directly related to subject content.	Computer use directly related to subject content.	Understands layout elements of a spreadsheet (e.g. row, column, cell) Enters data and creates a chart from a simple spreadsheet. Benchmark: Uses a spreadsheet to manipulate data.	Creates a chart from a simple spreadsheet with assistance. Manipulates a prepared spreadsheet to produce charts/graphs. Uses a blank template to enter data Creates a spreadsheet using simple formulas. Uses spreadsheet to create a graphs. Understands graph styles and selects graph styles that correctly represent data.	Computer use directly related to subject content.

	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Middle School
Language Arts Curriculum						
Relevant software	KidPix Starfall website Harcourt Language websites	KidPix Starfall website Harcourt Language websites	Microsoft Word Starfall website Harcourt Language websites	Microsoft Word Harcourt Language websites	Microsoft Word Harcourt Language websites	Microsoft Word Harcourt Language websites
Lessons & Projects	Seasonal poems, sentences	Seasonal poems and stories	Seasonal poems and essays Proofreading	Seasonal poems and essays Letter writing and formatting Proofreading	Seasonal poems and essays Letter writing and formatting Proofreading	
Standards introduced at this grade level:	Uses beginning writing applications that include both words and pictures Creates an illustration and writes a sentence with assistance. Composes and prints a paragraph, story, or poem. Uses word processing application to create, print, and publish a variety of writing types.	Continue to develop skills from previous grade.	Edits and enhances text (font, size, color, alignment, style). Demonstrates navigation skills in a word processing document (scrolling, cursor placement, removing unwanted space or pages) Indents using the Tab key. Uses spell check to correct work. Edits and revises documents using appropriate tools (thesaurus, dictionary, word count, spell check, cut and paste, copy)	Cuts, copies, and pastes objects and/or text. Uses templates for outlining, journal writing, report writing Inserts footnotes and endnotes. Correctly types bibliographical information. Adds tabular information as appropriate. Independently prepares and formats multi-page documents and reports including page numbers, table of contents, cover page, bibliography.	Uses text wrap in word processing documents. Appropriately formats punctuation in text (e.g. no space before comma, single space after comma and period). Uses text alignment (justification) appropriately (e.g. center a title) Uses headers and footers appropriately. Creates and adds more complex tables to documents (e.g. shaded rows or columns).	Computer use directly related to subject content.

	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Middle School
Geography and Social Studies Curriculum						
Relevant software	Harcourt Geoskills Eekoworld	Harcourt Geoskills Eekoworld Online school library catalog	Harcourt Geoskills Eekoworld Online school library catalog & public library catalog	Google or Yahoo Kids web search tools (supervised) Online school library catalog & public library catalog California Learning Resource Network (www.clrn.org/science)	Google or Yahoo Kids web search tools (supervised) Online school library catalog & public library catalog	Google or Yahoo Kids web search tools (supervised) Online school library catalog & public library catalog Google Earth
Lessons & Projects	Grade-level exercises	Grade-level exercises	Grade-level exercises Historical Halloween research (library/Internet)	Historical Halloween research (library/Internet)	Historical Halloween research (library/Internet)	Historical Halloween research (library/Internet) Digital microscopes
Standards introduced at this grade level:	Computer use directly related to subject content.	Uses teacher directed lists of web links to gather information from the Internet.	Students should access library resources using a card catalog system, preferably online. Use technology to teach students, assess their knowledge, develop information resources, and enhance computer literacy.	Examines all presentation content for accuracy and bias. Computer use directly related to subject content, e.g. (from state standards): Computer programs, approved and preselected Internet sources, and resources from the school library, may help students with natural and social science projects.	Navigates through a prepared multimedia product. (online research)	Select and use appropriate tools and technology to perform tests, collect data, and display data. Uses search strategies to gather and synthesize information.

	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Middle School
Visual and Performing Arts Curriculum						
Relevant software	KidPix	KidPix	KidPix Digital camera Microsoft Powerpoint	Garage Band Microsoft Powerpoint Scanners and associated software	Garage Band iMovie Microsoft Powerpoint Digital camera/videocamera Scanners and associated software	Garage Band iMovie Microsoft Powerpoint Digital camera/videocamera Scanners and associated software Sibelius
Lessons & Projects	Seasonal art	Seasonal art	Seasonal art Digital camera project Adding music or video to Powerpoint	Seasonal art Digital camera project Adding music or video to Powerpoint	Seasonal art Digital camera/video project Adding music or video to Powerpoint	Seasonal art Digital camera/video project Adding music or video to Powerpoint
Standards introduced at this grade level:	Use technology to create original works of art. Uses paint and draw tools Benchmark: Uses graphics to enhance written products (see Language Arts) Students compose and arrange music and improvise melodies, variations, and accompaniments, using digital/electronic technology when appropriate	Uses paint and draw tools to select and manipulate objects/graphics (e.g. rotate, stretch, shrink, group, duplicate).	Takes digital images using digital camera. Uses electronic media as a tool and delivery system by taking digital photos of artworks and presenting in a slideshow or website Inserts or imports an image (graphic object) from clipart, CD, or the Internet.	Scans an image to use in a document.	Uses a digitized image (photo) from a camera in a document. Manipulates basic graphic formats (converts to JPEG or GIF) Independently converts sounds and images into appropriate file types. Independently imports digital images and sound into multimedia projects. Creates a multimedia presentation for a report. Understands aesthetic rules for presentations (e.g. backgrounds, slide clutter)	Middle school students create animations of clay sculptures (example from state content standards)