Student Technology Framework with Performance Indicators

1.0 Basic Operations and Concepts

There is a basic framework of concepts and skills essential for effectively using technology tools and resources. These concepts and operational skills provide a foundation for use of technology to support learning throughout the curriculum. Students have a sound understanding of the operation of technology systems, terminology, basic concepts, limitations and uses of technology, connectivity and compatibility concepts, and an awareness of adaptive/assistive technologies. Students develop attitudes toward technology use which support life-long learning, collaboration, personal pursuits, and productivity.

		K	1	2	3	4	5	6	7-8	9-12
1.1	**Troubleshooting/Maintenance**									
1.1.1	Solves basic problems encountered during regular use of the computer and software.			I	R	R	M	M	M	M
1.1.2	Interprets basic system error messages.				I	R	R	M	M	M
1.1.3	Describes and implements basic troubleshooting techniques for multimedia computer systems with related peripheral devices/cords and power.				I	R	R	M	M	M
1.1.4	Performs simple troubleshooting and preventative maintenance procedures.					I	R	R	M	M
1.1.5	Performs troubleshooting tasks: diagnoses basic problems (power supply, off line/on line, application errors, I/O errors), uses a disinfectant program, uses utility programs, allocates memory, rebuilds desktop, uses virus protection software.							I	R	M
1.2	**Human-Computer Interaction**									
1.2.1	Starts and shuts down computer system.	I	R	R	M	M	M	M	M	M
1.2.2	Demonstrates appropriate keyboarding skills.	I	R	R	M	M	M	M	M	M
1.2.3	Demonstrates proper posture, finger placement and keyboarding techniques.				I	R	R	M	M	M
1.2.4	Assumes appropriate posture for safe, comfortable use.	I	R	R	M	M	M	M	M	M
1.2.5	Demonstrates proper care and handling of a computer system.	I	R	R	M	M	M	M	M	M
1.2.6	Demonstrates proficient mouse skills, i.e.. point, click and drag.	I	R	R	M	M	M	M	M	M
1.2.7	Uses input devices to navigate graphic interface (i.e., interactive books on CD-ROM).	I	R	R	M	M	M	M	M	M
1.2.8	Uses a calculator and other specific devices.			I	R	R	R	M	M	M
1.2.9	Identifies and independently uses computer hardware and software for class and personal use.				I	R	M	M	M	M
1.2.10	Uses imaging devices such as scanners, digital cameras, and/or video cameras with computer systems and software				I	R	R	M	M	M
1.2.11	Uses menu and keyboard commands to create and edit documents.				I	R	R	M	M	M
1.2.12	Manages installation of software and basic cabling skills.					I	R	R	M	M
1.2.13	Operates a multimedia computer system with related peripheral devices to successfully install and use a variety of software.					I	R	R	M	M
1.2.14	Demonstrates willingness to be self-reliant using technology tools.						I	R	R	M
1.2.15	Starts up a variety of different computers.						I	R	R	M
1.2.16	Touch types at least 25 w.p.m.							I	R	M
1.3	**Operating the Computer**									
1.3.1	Demonstrates proficient file management skills associated with opening, closing, saving, and deleting files.		I	R	R	M	M	M	M	M
1.3.2	Recognizes different types of fonts, with corresponding sizes.			I	R	R	M	M	M	M
1.3.3	Manages multiple active applications.				I	R	R	M	M	M
1.3.4	Understands finder hierarchy within a document, desktop, or hard drive.				I	R	M	M	M	M
1.3.5	Organizes, labels, and maintains documents and folders/directories.				I	R	R	M	M	M
1.3.6	Uses the Find command to perform searches.					I	R	R	M	M
1.3.7	Demonstrates proficient file management skills associated with opening, closing, saving, deleting, formatting, copying, transferring, and downloading.					I	R	R	M	M
1.3.8	Converts files from one format to another.						I	R	R	M
1.3.9	Understands the role that system software plays in computing.							I	R	M
1.3.10	Understands operating system.							I	R	M
1.4	**Productivity Tools & Applications**									
1.4.1	Starts and quits an application software program.	I	M	M	M	M	M	M	M	M
1.4.2	Uses commercial software in various content areas at a developmentally-appropriate level.	I	R	R	M	M	M	M	M	M
1.4.3	Uses a graphic program to illustrate concepts at a developmentally-appropriate level.	I	R	R	M	M	M	M	M	M
1.4.4	Uses a word processor to compose, edit, save, and print text.			I	R	R	M	M	M	M

		K	1	2	3	4	5	6	7-8	9-12
1.4	**Productivity Tools & Applications (cont'd)**									
1.4.5	Uses simple drawing/publishing software to express and/or present individual as well as group ideas.			I	R	R	M	M	M	M
1.4.6	Uses a prepared database to enter and edit data.			I	R	R	M	M	M	M

1.4.7	Uses graphic tools to create single frame presentations.	I	R	R	M	M	M	M	M
1.4.8	Revises word processed text to be simple desktop published document.		I	R	R	M	M	M	M
1.4.9	Uses productivity tools for designing and creating multimedia presentations.		I	R	R	M	M	M	M
1.4.10	Creates, Edits, and Publishes an HTML document, using an editor.		I	R	R	M	M	M	M
1.4.11	Identifies terms and functions associated with spreadsheet applications.			I	R	R	M	M	M
1.4.12	Uses a word processing program to publish a report that contains centering, tabs, and more than one paragraph.			I	R	R	M	M	M
1.4.13	Inserts graphics from a program within the application, from another program, from a CD-ROM, from a file server, or from the Internet.				I	R	R	M	M
1.4.14	Integrates word processing, spreadsheet, and database applications to prepare and present information in a variety of formats.				I	R	R	M	M
1.4.15	Uses various commercial software applications for different content areas.						I	R	M
1.4.16	Uses a database to search for desired information: given one criterion and given two criteria (using “and” or “or” connectors where necessary.						I	R	M
1.4.17	Uses sorting and searching techniques to solve specific problems in databases.						I	R	M
1.4.18	Performs file compression, transfer, and expansion for sharing and accessing information.				I	R	R	M	M
1.5	**Networking**								
1.5.1	Accesses World Wide Web and uses bookmarks.	I	R	R	M	M	M	M	M
1.5.2	Understands basic networking and accesses file server and other network resources.				I	R	R	M	M
1.5.3	Transfer files, share files, prints across the network, uploads and downloads files over a network.					I	R	R	M
1.6	**Computer Knowledge**								
1.6.1	Identifies the physical components of a computer as input, output or processing devices.	I	R	R	M	M	M	M	M
1.6.2	Recognizes and uses terminology related to computers and technology appropriately in written and oral communication.		I	R	R	M	M	M	M
1.6.3	Identifies and uses terms related to data communications (modem, upload, download, e-mail).		I	R	R	M	M	M	M
1.6.4	Knows the basic components of a computer (hard drive, CD -ROM, floppy drive, keyboard, mouse, monitor, CPU).	I	R	R	M	M	M	M	M
1.6.5	Identifies terms and functions associated with database management.				I	R	R	M	M
1.6.6	Identifies terms related to computer generated productions (desktop publishing, clip art, hypertext, multimedia, laser disc, CD- ROM, VCR, scanners, etc.)				I	R	R	M	M
1.6.7	Understands and applies the distinction between data storage and operating memory (RAM).				I	R	R	M	M
1.6.8	Recognizes file compression and expansion terms associated with related suffixes and applications needed for file transfer.					I	R	R	M
1.6.9	Understands and identifies the various computer hardware and peripherals and the roles they play.						I	R	M

2.0 Tools for Communication and Research

As students progress through school, they continuously improve their abilities to combine and match technology tools and resources to meet the learning challenges they encounter. Students apply effective strategies to assess the credibility of information sources and to resolve conflicting information. Students obtain information from a variety of sources and media. Topics in this domain Include traditional and emerging research skills, remote information resources, networking, resolving information conflict, critically consuming information, and using intelligent agents and sophisticated search techniques to support research, problem-solving and decision-making.

2.1	**Electronic mail**													
2.1.1	Identifies and uses functions associated with e-mail.			I	R	R	M	M	M	M
2.1.2	Compares the process of sending and receiving messages: electronically vs. non-electronically (e.g. e-mail vs. US mail, electronic bulletin board vs. classroom bulletin board).			I	R	R	M	M	M	M
2.1.3	Uses functions associated with e-mail to communicate ideas with others.			I	R	R	M	M	M	M
2.2	**Internet**													
2.2.1	Accesses the World Wide Web independently using web browsers, search engines and favorites/bookmarks.			I	R	R	M	M	M	M
2.2.2	Uses Internet resources to document work, conduct on-line research, and link to other sources.				I	R	R	M	M	M
2.2	**Internet (cont'd)**	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7-8**	**9-12**
2.2.3	Uses telecommunications to access remote, personal, and academic information and to communicate globally.			I	R	R	M	M	M	M
2.2.4	Uses on-line and distributed education resources to support learning.					I	R	R	M	M
2.2.5	Demonstrates proficiency at accessing on-line resources.							I	R	M
2.2.6	Accesses a variety of on-line information resources.					I	R	R	M	M
2.2.7	Uses Internet resources to document work, conduct on-line research, and to link to other sources.							I	R	M

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			K	1	2	3	4	5	6	7-8	9-12
2.3		**Research**									
	2.3.1	Uses computer based simulations to explore hypotheses.		I	R	R	M			M	M
	2.3.2	Participates in critical analysis of information gathered from multiple resources and then presents findings in a coherent and organized fashion.		I	R	R	R			M	M
	2.3.3	Explores the credibility of information obtained through a variety of technology resources.		I	R	R	R			M	M
	2.3.4	Conducts research, and then presents the data in appropriate form.			I	R	R			M	M
	2.3.5	Creates a word processed document explaining the process of their research and a discussion of their results.			I	R	R			M	M
	2.3.6	Selects appropriate computing resources and conducts research, e.g. CD Encyclopedia or on-line resources.			I	R	R			M	M
	2.3.7	Is a critical consumer of technology information resources.					I			R	M
	2.3.8	Uses Boolean logic (logical operators) and keyword searching to access a wider range of information sources.			I	R	R			M	M
2.4		**Network**									
	2.4.1	Uses telecommunications and network systems to participate in cooperative projects and problem-solving activities.		I	R	R	M	M		M	M
	2.4.2	Uses technology tools, software, and on-line resources to gather, evaluate, organize, and convey information pertinent to academic and personal interests.			I	R	R	M		M	M
2.5		**Presentation/Multimedia**									
	2.5.1	Creates a database: creates a variety of field types, performs searches, designs a variety of layouts.				I	R	R		M	M
	2.5.2	Creates a spreadsheet: enters formulas, edits cells, creates various types of charts.				I	R	R		M	M
	2.5.3	Incorporates Audio/Video files (QuickTime movies, MIDI) in multimedia presentations.					I	R		R	M
	2.5.4	Creates basic video productions (with inanimate objects).						I		R	M
	2.5.5	Develops and illustrates thoughts, ideas, stories, and problems using technology.		I	R	R	M	M	M	M	M
	2.5.6	Uses appropriate technology tools to present and share projects both in the classroom and beyond.				I	R	R	M	M	M
	2.5.7	Creates and edits a video to communicate information.				I	R	R	M	M	M
	2.5.8	Uses hyperlinked multimedia tools to design and publish or present group projects.					I	R	R	M	M
	2.5.9	Participates in development of a World Wide Web page based on class research project.				I	R	R	M	M	M
	2.5.10	Illustrates and explains results of investigations using multimedia, Web development, hypermedia, or graphing tools and software.					I	R	R	M	M
	2.5.11	Selects and applies appropriate multimedia tools, including the Web to independently research, publish, and support learning.					I	R	R	M	M
	2.5.12	Creates and displays presentations to support a persuasive speech.						I	R	R	M
	2.5.13	Selects appropriate telecommunications tools and resources to complete a class project.							I	R	M
	2.5.14	Develops multimedia presentation based on principles of layout and design.								I R	M
	2.5.15	Selects productivity tools appropriate for creating an interactive presentation to communicate ideas and research.							I	R	M
	2.5.16	Selects and uses appropriate technology tools to organize and report findings in multiple forms.					I	R	R	M	M

3.0 Social, Ethical, and Human Issues

The rate of change surrounding technology is staggering. Students understand the historical and societal impact that technology has had, is having, and is likely to have. They understand the issues related to technology and lifelong learning for continued success in the workplace. Students evaluate new information resources and technological innovations based on their appropriateness to specific tasks and the individual's personal preferences, requirements and resources; they are sophisticated technology consumers. Students understand privacy, copyright, licensing, and intellectual property rights issues, and they make responsible decisions and exhibit ethical behavior related to them.

			K	1	2	3	4	5	6	7-8	9-12
3.1		**Social Issues**									
	3.1.1	Works cooperatively when using technology	I	R	R	M	M	M	M	M	M
	3.1.2	Takes turns using the computer.	I	R	R	M	M	M	M	M	M
3.1		**Social Issues (cont'd)**	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7-8**	**9-12**
	3.1.3	Identifies the role of technology and the necessary skills in a variety of careers.		I	R	R	M	M		M	M
	3.1.4	Contributes to 'end project', total group effort; values everyone's contributions and ideas.		I	R	R	M	M		M	M
	3.1.5	Analyzes and discusses the future impact and trends of technology in the home, work, society, entertainment, and school.					I	R		R	M
	3.1.6	Identifies uses of technology in the community.	I	R	R	M	M	M		M	M
	3.1.7	Identifies ways that telecomputing promotes a global community.		I	R	R	M	M		M	M
	3.1.8	Identifies examples and analyzes the societal impact of advanced and emerging technologies.					I	R		R	M
	3.1.9	Interprets computer advertising to make good consumer decisions.					I	R		R	M
3.2		**Ethical Use**									
	3.2.1	Respects the privacy of others	I	R	R	M	M	M	M	M	M

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3.2.2	Demonstrates respect for the computer work of others.	I	R	R	M	M	M	M		M	M
3.2.3	States that violation of copyright law is a crime.		I	R	R	M	M	M		M	M
3.2.4	Models ethical behavior and acceptable practice in use of technology and technological resources.	I	R	R	M	M	M	M		M	M
3.2.5	States the need for protection of software and hardware from computer viruses.				I	R	R	M		M	M
3.2.6	Understands the need for protection of software and hardware from vandalism.				I	R	R	M		M	M
3.2.7	Identifies, as intellectual property, work created using a computer.				I	R	R	M		M	M
3.2.8	Describes the right of an individual to ownership of his/her created computer work.				I	R	R	M		M	M
3.2.9	Understands and models ethics relating to copyright laws.					I	R	R		M	M
3.2.10	Explains that the copyright law protects what a person or a company has created and placed on a diskette.				I	R	R	M		M	M
3.2.11	Identifies examples of copyright law violations and possible penalties.				I	R	R	M		M	M
3.2.12	Discriminates between types of data as to which are public and private.					I	R	R		M	M
3.2.13	Demonstrates knowledge of safe and ethical procedures related to sharing personal information.				I	R	R	M		M	M
3.2.14	Participates in ethical situations, experiences (e.g., role playing, elimination of jobs, intellectual property, case studies).					I	R	R		M	M
3.2.15	Acknowledges sources of information and awareness of legal/ethical issues.					I	R	R		M	M
3.3	**Human Concerns**										
3.3.1	Identifies computers as tools for accessing current information.	I	R	R	M	M	M	M		M	M
3.3.2	Identifies the computer as a machine that helps people work and plan.		I	R	R	M	M	M		M	M
3.3.3	Identifies uses of technology at home and at school.		I	R	R	M	M	M		M	M
3.3.4	Identifies the ways in which technology has influenced and changed the lives of people in the United States.							I		R	M