Technology Competencies Rubric

Core Competency	Technology Competency	Proficiency Level (Proficient level is required for courses that meet the high school graduation requirement for technology)		
		Basic	Proficient (All of basic +)	Advanced (All of proficient +)
1. Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use. (Also meets #9)	General Hardware	A. Identify the monitor, mouse, and CPU. B. Use the mouse and keyboard to enter data. Use basic key functions (space bar, return/enter key, shift key, arrow keys, caps lock, delete/backspace, option/alt, tab key, and F keys). C. Identify and use computer peripherals: CD-ROM/DVD Player, microphone, speaker, external disk drive, scanner, and printer. D. Use a presentation system (document camera, LCD video projector, wireless slate or electronic whiteboard, wireless classroom amplification system). E. Use help menu as a method for problem solving.	F. Identify and use A/V equipment: VCR/DVD, digital still camera, digital video camera, digital audio player, and CD/DVD burning. G. Identify and use the microphone, network, firewire, USB, and other ports. H. Identify and use the appropriate cables for computer and A/V connections (cables for digital cameras, digital video cameras, digital audio player, and probeware). I. Choose the appropriate hardware for the task.	J. Troubleshoot cables, connections, power sources, and hardware specifications (e.g., RAM, hard drive space).

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1. Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use. (Also meets #9)	General Software	A. Start up and quit applications. B. Document management: create, open, save, close, and print a document. C. Save and retrieve documents from hard drive (understand navigation and hierarchy). D. Copy or cut and paste text and/or pictures from one program to another. E. Use help menu as a method for problem solving.	F. Use "Save As" appropriately. G. Choose appropriate page orientation. H. Save and retrieve documents from external disks, servers and web based digital storage (understand navigation and hierarchy). I. Import and export a document. J. Use help menu as a method for problem solving. K. Choose the appropriate software for the task.	L. Install and configure software programs. M. Set preferences on software programs.

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1. Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use. (Also meets #9)	Operating System	A. Start, shut down, and restart. B. Understand the desktop, window manipulation (minimize window, close window, maximize window), finder/program manager, application/finder menu, and dock/short cut bar. C. Insert and remove disks correctly (CD-ROM's and DVD's). D. Printer: add, remove, and select the appropriate desktop or network printer. E. Use file management including delete, copy, and paste. F. Use help menu as a method for problem solving.	G. Use file management including backup, format/initialize external hard drive/flash drive, and cross-platform file transfer. H. Troubleshoot OS including quitting stalled programs.	I. Install appropriate software drivers for internal or external hardware or equipment. J. Install operating system software. K. Initialize and partition hard drives. L. Set system preferences.
1. Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use. (Also meets #9)	Networking	A. Understand and agree to the district's Acceptable Use Policy and ethics. B. Select a networked printer.	C. Explain the use of and the means by which computers are networked. D. Select, log on/log off, open, close, and save files to a pre-selected file server.	E. Troubleshoot cabling and connectivity of network devices (e.g., both wired and wireless access).

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3. Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse. (Also meets #2)	Social and Ethical Practices	A. Understand and agree to the district's <u>Acceptable Use Policy</u> and ethics. B. Work cooperatively and collaboratively with peers and others when using technology. C. Demonstrate positive, social and ethical behaviors when using technology. D. Discuss common uses of technology in daily life (provide advantages and disadvantages of those uses). E. Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use.	F. Identify capabilities and limitations of contemporary and emerging technology resources and assess the potential of these systems and services to address personal, life long learning and workplace needs. G. Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real-world problems. H. Practice responsible use of technology systems, software, and the Internet and discuss consequences of misuse.	I. Make informed choices among technology systems, resources, and services.

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4. Use content-specific tools, software, and simulations (e.g., environmental probes, graphing calculators, exploratory environments, Web tools) to support learning and research. (Not a High School Proficiency)	**Content-based Tools** (Not a High School Proficiency)	A. Navigate a variety of content-specific software, and web-based resources as guided by teacher. B. Incorporate the learning into tasks or projects with the aid of teacher or other students.	C. Choose and navigate content-specific simulations, software, and web-based resources independently. D. Incorporate the learning into tasks or projects independently.	E. As a self-sustaining learner students choose and navigate appropriate content-specific simulations, software, and web-based resources based on their problem or task. F. Student reflects on whether or not the appropriate content-based tool allowed the student to achieve a more in depth understanding of the content.
	Probeware (Not a High School Proficiency)	A. Connect probe to computer. B. Use probe to collect data from multiple trials. C. Create a graph with labels. D. Print data and graph. E. Use help menu as a method for problem solving.	F. Change probe settings and sampling options (e.g., sampling rate and units). G. Manual sampling. H. Keyboard entry of data to coincide with probe data collection (e.g., observations when collecting temperature). I. Line of best fit. J. Slope.	K. Calibrate Sensors.

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5. Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum.	Word Processing	A. Enter text and line break (character keys, space bar and return/enter key). B. Delete text (delete key or backspace key). C. Insert and move cursor (arrow keys, mouse, optional touch screen). D. Use basic punctuation keys (shift, question mark, period, and comma keys). E. Format and edit text by highlighting (font, size, style, color, effects); replace or delete existing text. F. Change justification and line spacing using basic ruler. G. Cut, copy, and paste text to another location in the same document. H. Use spelling check (words and whole document). I. Print document to include proper page orientation (Portrait or Landscape). J. Use help menu as a method for problem solving. K. Cut, copy, and paste text to and from another document L. Create numbered and bulleted lists. M. Add hyperlinks.	N. Import and arrange graphics in document (copy, paste, wrap text around graphic). O. Format document (margins, headers, footers, page numbering). P. Format paragraph and page (tab, indent, hanging indent, line spacing, outline format, borders) Q. Create a multi-column document. R. Use find/replace, thesaurus, and user/custom dictionaries. S. Import/export to other files, formats, documents or applications. T. Merge data from database or spreadsheet into word processing documents (e.g., form letter). U. Print only certain page numbers, multiple copies, and be able to select different desktop or network printers. V. Format tables (create, change row/column size, merge cells, repeat heading rows, format paragraphs inside cells, borders).	W. Use document tracking to edit a document with multiple people. X. Use appropriate tools to make forms. Y. Use autotext feature. Z. Use the version save option when editing a document multiple times.

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5. Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum.	Keyboarding	A. Recognize and locate letters and numbers on a keyboard. B. Demonstrate correct home row position. C. Use basic key functions (space bar, return/enter key, shift key, arrow keys, caps lock, delete/backspace, option/alt, tab key, and F keys).	D. Use correct right and left-hand keyboard positions. E. Enter text at a defined speed with acceptable accuracy (at the minimum, type as fast as you write).	F. Enter text at a defined speed with acceptable accuracy (increase over proficiency speed). G. Use key combinations on keyboard for menu shortcuts when using operating system and software applications.

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5. Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum.	Graphics	A. Capture still images from various digital sources (e.g., scanners, digital cameras, Internet). B. Use help menu as a method for problem solving.	C. Use editing tools in drawing and painting (select, add color and pattern, resize, crop, erase). D. Use principles of design (proportion, balance, contrast, rhythm, emphasis, unit – see document entitled Design Principles and Tips for Media Layout) in editing the graphics. E. Import and export graphics in the appropriate file format (e.g., eps, tiff, pict, jpeg, gif). F. Know appropriate type of graphics application to complete a given task (drawing, painting, or photo enhancement).	G. Create original 3-D graphics and animations. H. Create original graphics using professional graphics applications. I. Create original graphics with multiple layers. J. Plan, organize, and save multimedia files.

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5. Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum.	Spreadsheet	A. Read and interpret information in a spreadsheet. B. Enter, edit, and delete information in a spreadsheet/graphing program. C. Set decimal place accuracy. D. Use help menu as a method for problem solving.	E. Format cell attributes (e.g., columns, rows, justification, styles, number). F. Use data from spreadsheet to create charts and graphs (use of chart wizard). G. Use basic formulas for adding, subtracting, multiplying, dividing, averaging (including median, mode), and determining percents. H. Use fill for multiple entries of the same value or number. I. Cut, copy, and paste formulas, values, and functions. J. Create multiple column data table with column headers. K. Format document (margins, header, footer, page numbering). L. Print spreadsheet and/or chart with ability to set print area.	M. Link to multiple spreadsheets. N. Conditional cell formatting (e.g., if <0, use red).

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5. Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum.	Graphical Organizers	A. Complete a partially filled graphical organizer provided by the teacher. B. Use a variety of graphical organizers provided by the teacher (e.g., templates). C. Select and apply, from a group of graphical organizers (e.g., Venn diagrams, concept maps, timelines, etc.), the appropriate one to complete a give task. D. Format document (margins, header, footer, page numbering) E. Use symbols from the library F. Make links G. Format text H. Spell check I. Cut, copy, and paste. J. Print Diagram and outline (Portrait, Landscape). K. Use help menu as a method for problem solving. L. Print in outline format. M. Export outline into other applications.	N. Create and use appropriate graphical organizer to complete a given task. O. Save/export the document in an appropriate format to be used in other applications (e.g., gif, jpeg, html, rtf). P. Use image from file as a symbol (import, resize). Q. Attach notes. R. Use a graphical organizer to gather information, develop ideas, make decisions, or organize thinking. S. Insert a graphic from file as a symbol and size appropriately.	T. Manage symbol libraries. U. Create templates.

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6. Design, develop, publish, and present products (e.g., Web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom.	Electronic Presentation	A. Use outlining tools to create simple presentation templates (e.g., Inspiration software). B. Format and edit text by highlighting (font, size, style, color, effects); replace or delete existing text. C. Create numbered and bulleted lists. D. Insert and Format text boxes. E. Play slide show (manual and automatic timing with transition effects). F. Use help menu as a method for problem solving.	G. Use appropriate software to create an electronic slide presentation. H. Demonstrate appropriate presentation skills, focusing on pace and image/message transitions. I. Use principles of design (see document entitled Design Principles and Tips for Media Layout). J. Create or edit templates that are consistent in layout. K. Add transitions to text and pages L. Add multimedia to slides (e.g., illustrations/ pictures/clipart, charts, sounds, video, audio soundtrack). M. Format slide background, design, layout, color scheme. N. Print slides in various formats (e.g., handouts and outline).	O. Animations of individual slide elements. P. Soundtrack and timing Q. Export presentation as movie or html.

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6. Design, develop, publish, and present products (e.g., Web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom.	Web Authoring	A. Understand and agree to the district's Acceptable Use Policy and ethics. B. Understand that web sites on the Internet are created with web-authoring tools that are displayed in a web browser. C. Use help menu as a method for problem solving. D. Use pre-made templates	E. Use web-authoring software to create a simple web page incorporating text, graphics, links, backgrounds, and tables. F. Prepare text and images in the appropriate formats for publishing on the Internet. G. Identify the appropriate software and hardware needed to publish web pages. H. Upload web pages to a file server.	I. Prepare files to be downloadable from the web. J. Use advanced techniques such as layers, rollovers, and CSS). K. Create forms to be used within a web page. L. Publish interactive databases to the web. M. Create and publish animations to the web (e.g., using Flash).

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6. Design, develop, publish, and present products (e.g., Web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom.	Digital Literacy (Video and Digital Images)	A. Operate a DVD/VCR combo Player (play, fast forward, rewind, pause, and navigation)
		B. Operate a video camera; turn it on, record, turn it off, zoom, and sound.
		C. Operate a digital still camera: turn on and off, set picture recording size, zoom, and flash operation.
		D. Navigate through a multimedia presentation.
		E. Use help menu as a method for problem solving.
		F. Use critical viewing skills
			G. Brainstorm and plan video organization and content: treatment (proposal), storyboarding, scripting, production schedule.
			H. Use production skills for video and digital images (e.g., camera shots/movements, composition, lighting, microphone use and placement, video recording, directing).
			I. Use basic computer-based photo editing applications.
			J. Edit photos: crop, resize, and reduce red eye.
			K. Use computer-based video and editing applications.
			  1) Add and edit video and still pictures for time and content.
			  2) Add titles, transitions, effects, music and voice over to videos.
			L. Export photos and video in appropriate format and size for intended audience and application use.
			M. Use critical viewing skills
			N. Import different file formats (graphics, sounds, video, etc.) from video camera, still camera, and disk drives.
			O. Burn a movie to CD-ROM.
				P. Plan, organize, and save multimedia files.
				Q. Use critical viewing skills.
				R. Create and burn a movie onto a DVD with chapters, introductory photos/video, and music.
				S. Direct a multi-camera production: Studio and EFP (Electronic Field Production).
				T. Use advanced editing systems (e.g., Final Cut Express, Final Cut Pro, Avid).
				U. Create advanced animation (2-D, 3-D, stop motion).
				V. Use music software to import digital music for video production purposes.

Adapted from the National Educational Technology Standards   http://www.iste.org   13

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6. Design, develop, publish, and present products (e.g., Web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom.	Desktop Publishing	A. Use pre-made template B. Use appropriate fonts, style and size. C. Identify serif/sans serif fonts and use them appropriately. D. Set the paragraph indentation. E. Avoid use of all caps in headlines F. Choose justification or ragged right margin.	G. Use age-appropriate software (e.g., ClarisWorks/Appleworks, PageMaker) for desktop publishing. H. Set the column width. I. Use principles of design (proportion, balance, contrast, rhythm, emphasis, unity -see Appendix E, Design Principles and Tips). J. Balance the size, color and style of the headline relative to body text. K. Apply shading and color where appropriate. L. Set tabs and hanging indents. M. Balance the artwork in relation to text.	N. Set the leading to control the white space between lines of text. O. Use drop caps appropriately. P. Utilize kerning for the headline.

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7. Collaborate with peers, experts, and others using telecommunications and collaborative tools to investigate curriculum-related problems, issues, and information, and to develop solutions or products for audiences inside and outside the classroom.	Social Communication Tools	A. Understand and agree to the district's Acceptable Use Policy and ethics. B. Navigate the Internet using a web browser. Bookmark pages found on the Internet. C. Enter information in a web-based survey (e.g., Survey Monkey).	D. Use text based collaborative tools (e.g., threaded discussions or forums, bulletin boards, chat, blogs, Zoho, online journals). E. Use video based collaborative tools (e.g., video conferencing between students, classes, and professional experts). F. Subscribe to and listen/watch audio and/or video Podcasts G. Construct web-based survey (e.g., Survey Monkey). H. Consider the accuracy and validity of information found on the Internet.	I. Moderate text-based collaborative tools (threaded discussions, forums, bulletin boards, blogs, and chat). J. Use web-based calendar as a project planner. K. Coordinate and implement videoconference session.

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8. Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems.	Problem Solving	A. Students will choose the appropriate tool or resource as guided by the teacher.	B. Students will choose the appropriate tool or resource, to problem solve and complete a project-based assignment, without teacher assistance.	C. Students will choose an appropriate tool they have not used in this class or in the past and do so without teacher assistance.

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10. Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real-world problems. (Also meets 6 and 7)	Web Research	A. Understand and agree to the district's Acceptable Use Policy and ethics. B. Use web browser tools to navigate web pages and sites. C. Use nonlinear text features incorporated in web pages (e.g., frames, hyperlinks, and pop-up windows) to read for information. D. Use natural language search techniques for research on the Internet E. Use bookmarking systems for gathering and retrieving web URL's specific to information needed and for citing sources. F. Use find and sort in an online database to locate information.	G. Construct key words from research questions to search for information using subject directories (e.g., Yahooligans). H. Use more than one online database to find information. I. Use specialized search directories (e.g., newspapers, government, science, online databases). J. Know when to use a directory, search engine, or specialized directory to accomplish a searching task. K. Download and store web, PDF, audio, video and graphics files specific to information needed and for citing sources. L. Evaluate the reliability and validity of web pages, sites and multimedia files gathered. M. Organize information from multiple sources through note taking, outlining and graphic organizers. Cite sources of gathered information. N. Synthesize information from multiple sources in an authentic product or presentation in order to give evidence of new understanding. O. Use telecommunication and collaboration tools to gather information, data, and feedback on content related projects.	P. Construct key words from research questions and combine with Boolean Queries (e.g., AND, OR, NOT) using search engines (e.g., Google, etc.) in advanced searches.