## **DRAFT Proposed Revisions**

Texas Essential Knowledge and Skills

Technology Applications Middle School

# Prepared by the State Board of Education TEKS Review Committees First Draft—July 2010

These documents have been combined from grade-level team drafts and formatted for consistency and ease of review.

Proposed additions are shown in greed font with underlines and proposed deletions are shown in red font with strike throughs.

Comments in the margin provide explanations for proposed changes. The following notations were used as part of the explanations:

CRS—information added or changed to align with College Readiness Standards

**ER**—information added, changed, or deleted based on expert reviewer feedback

**MV**—multiple viewpoints from within the committee

VA—information added, changed, or deleted to increase vertical alignment

**21st**—information updated to 21<sup>st</sup> century technology trends, applications, and uses

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#### §126.12. Technology Applications (Computer Literacy), Grades 6. Technology Applications

- (a) General requirements. Districts have the flexibility of offering technology applications (computer literacy) in a variety of settings, including a specific class or integrated into other subject areas. Districts are encouraged to offer technology applications in all content areas. They may also be offered in a specific class while being integrated in all content areas.
- (b) Introduction.
  - (1) The technology applications curriculum has four strands: foundations, information acquisition, work in solving problems, and communication six strands: creativity and innovation, communication and collaboration, research and information fluency, critical thinking, problem solving and decision making, digital citizenship, and technology operations and concepts.
  - (2) Through the study of technology applications foundations technology operations and concepts, including technology related terms, concepts, and data input strategies, students learn to make informed decisions about by understanding current and emerging technologies and their applications. The efficient acquisition of information includes the identification of task requirements; the plan for using search strategies; and the use of technology to access, analyze, and evaluate the acquired information. By using technology as a tool that supports the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create a solution, and evaluate the results. Students communicate information in different formats and to diverse audiences. A variety of technologies will be used. Students will analyze and evaluate the results which include technology systems, appropriate digital tools, and personal learning networks. As responsible digital citizens and competent researchers, students use creative and computational thinking to solve problems while developing career and college readiness skills.

**Comment [A1]:** RC Consider adding a statement about using technology terminology.

- (c) Knowledge and skills.
  - (1)(5) Information acquisition Creativity and Innovation. The student acquires electronic information in a variety of formats, with appropriate supervision uses creative thinking and innovative processes to construct knowledge, generate new ideas, and create products. The student is expected to:

Comment [A2]: 21<sup>st</sup> – terminology updated.

- (B) demonstrate the ability to access, operate, and manipulate information from secondary storage and remote devices including CD-ROM/laser discs and on-line catalogs; and

**Comment [A3]:** Remove but use terminology in order to increase rigor in grade levels.

Comment [A4]: VA

(B) create original works as a means of personal or group expression;

Comment [A5]: RC

(C) use on-line help and other documentation.

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	<u>(C)</u>	explore complex systems and issues using models, simulations, and new	
		technologies such as making predictions, modifying input and reviewing results;	
		<u>and</u>	
	<u>(D)</u>	analyze trends and forecast possibilities.	
(2)	Found	ations. The student uses data input skills appropriate to the task. The student is	
(2)	expect	1 11 1	
	<del>(C)</del> —	use digital keyboarding standards for data input such as one space after	
		punctuation, the use of em/en dashes, and smart quotation marks; and	Comment [A6]: 21 <sup>st</sup> outdated terminology.
	<del>(D)</del>	develop strategies for capturing digital files while conserving memory and	
		retaining image quality.	Comment [A7]: To be included later.
(2)	Comm	punication and Collaboration. The student collaborates and communicates both	
(2)		nunication and Collaboration. The student collaborates and communicates both and globally to reinforce and promote learning. The student is expected to:	
	iocarry	and grobally to remistee and promote rearming. The student is expected to.	
	(A)	create personal learning networks to collaborate and publish with peers, experts,	
		or others via current and emerging technologies, such as blogs, wikis,	
		audio/video communication;	Comment [A8]: CRS, ER, 21 <sup>st</sup> ,
	(B)	communicate effectively to multiple audiences using a variety of media and	
	(2)	formats; and	
	<u>(C)</u>	use technical writing strategies.	Comment [A9]: VA Will be included in 2B of NETS. Include in 7 <sup>th</sup> grade to correlate with 7 <sup>th</sup> grade
(3) <del>(4)</del>	Inform	nation acquisition Research and Information Fluency. The student acquires,	ELA TEKS. 6 <sup>th</sup> – Write the steps, 8 <sup>th</sup> show mastery.
(3)(4)		es and manages content from digital resources uses a variety of strategies to	Reword by grade level.
	acquir	e information from electronic resources, with appropriate supervision. The student	Comment [A10]: CRS, 21 <sup>st</sup> - appropriate
	is expe	ected to:	supervision removed since this is a given now. These TEKS are student driven and not teacher
	<del>(A)</del>	use strategies to locate and acquire desired information on LANs and WANs.	driven, therefore, the term "appropriate supervision" should be removed. Updated to reflect
	(21)	including the Internet, intranet, and collaborative software; and	college readiness standards.
	(A)	create a research plan to guide inquiry;	
	<del>(B)</del> —	apply appropriate electronic search strategies in the acquisition of information	
		including keyword and Boolean search strategies.	
	(B)	use various search strategies including keyword(s) and Boolean identifiers;	
	(D)		
	<u>(C)</u>	select and evaluate digital resources for accuracy and validity; and	
	(D)	process data and communicate results.	Comment [A11]: 21st – terminology updated to
			reflect new trends and terms.

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<u>(4)</u>		Thinking, Problem Solving, and Decision Making. The student makes informed as by applying critical thinking and problem solving skills. The student is ad to:	
	_		
	(A)	identify and define relevant problems and significant questions for investigation;	
	<u>(B)</u>	plan and manage activities to develop a solution or complete a project;	
	<u>(C)</u>	collect and analyze data to identify solutions and make informed decisions;	
	(D)	use multiple processes and diverse perspectives to explore alternative solutions;	
	<u>(E)</u>	make informed decisions and support reasoning; and	
	<u>(F)</u>	transfer current knowledge to the learning of newly encountered technologies.	
<u>(5)(3)</u>	Founda	tions Digital Citizenship. The student complies with the laws and examines the regarding the use of technology in society practices safe, responsible, legal, and	
		behavior while using technology tools and resources. The student is expected to:	
	(A)	understand and practice discuss copyright ownership laws/issues including current laws, fair use guidelines, creative commons, open source, and public	
		domain;	Comment [A12]: 21 <sup>st</sup>
	<u>(B)(3)(</u>	A) <u>practice</u> and model ethical acquisition and <u>standard</u> use of digital information, <u>methods for</u> citing sources using established methods;	
	<u>(C)(B)</u>	<u>practice demonstrate</u> <u>safe and appropriate online behavior, personal security</u> <u>guidelines, proper digital</u> etiquette, and <u>knowledge of</u> acceptable use <u>of</u> <u>technology</u> <u>while in an individual classroom, lab, or on the Internet and intranet;</u> and	
	<del>(D)</del>	identify the impact of technology applications on society through research, interviews, and personal observation; and	
		mierviews, and personal observation; and	Comment [A13]: Already addressed, repetitive.
	<u>(D)(C)</u>	understand describe the consequences regarding copyright violations negative impact of inappropriate technology use, including, but not limited to, computer	
		online bullying and harassment, hacking, computer piracy, intentional virus	
		setting, and invasion of privacy and piracy such as software, music, video and other media.	Comment [A14]: 21 <sup>st</sup> , RC specificity, updating terminology
	(E)	demonstrate knowledge of the relevancy of technology to future careers, life long	
		learning, and daily living for individuals of all ages	Comment [A15]: CRS moved to 1G.
(6)		ation acquisition. The student evaluates the acquired electronic information. The	
	<del>(A)</del>	determine and employ methods to evaluate the electronic information for	
		accuracy and validity;	

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<del>(B)</del> —	resolve information conflicts and validate information through accessing, researching, and comparing data; and	
<del>(C)</del>	demonstrate the ability to identify the source, location, media type, relevancy, and content validity of available information.	
knowle	ations Technology Operations and Concepts. The Setudents demonstrates edge and appropriate use of hardware components, software programs, and their	
	etions a thorough understanding of technology concepts, systems, and operations.  udent is expected to:	
( <u>A</u> )(E)	use <u>current</u> technology terminology appropriate <u>ly</u> to the task;	
<del>(B)</del>	compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices;	Comment [A16]: RC Move to romanett
<u>(B)</u>	evaluate and select technology tools based on licensing, application, and support;	above.
<del>(C)</del>	demonstrate the ability to select and use software for a defined task according to quality, appropriateness, effectiveness, and efficiency	Comment [A17]: RC Move to romanett above.
(C)(A)	understand demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components;	Coore.
<del>(D)</del>	delineate and make necessary adjustments regarding compatibility issues including, but not limited to, digital file formats and cross platform connectivity.	Comment [A18]: Addressed in 1A
<u>(D)</u>	understand and use software applications including the ability to select and use software for a defined task;	
<u>(E)</u>	understand and use hardware systems:	Comment [A19]: CR Include addition of "application" to show advancing rigor at 7 <sup>th</sup>
<u>(F)</u>	understand troubleshooting techniques such as accessing the command prompt, restarting systems, checking power issues, resolving software compatibility, verifying network connectivity, and modifying display properties;	
<u>(G)</u>	demonstrate effective file management strategies such as naming conventions, location, backup, hierarchy, folder structure, and file conversion;	Comment [A20]: VA, ER
<del>(H)</del>	use terminology related to the Internet appropriately including, but not limited to, electronic mail (e mail), Uniform Resource Locators (URLs), electronic bookmarks, local area networks (LANs), wide area networks (WANs), World Wide Web (WWW) page, and HyperText Markup Language (HTML); and	Comment [A21]: RC Combine G,H,I bec
( <u>H</u> ) <del>(</del> F)		fits within 1A & addressed in introduction.
<u>(I)</u>	eompare and contrast LANs, WANs, Internet, and intranet	

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<u>(I)(G)</u>	systems and give examples of each throughout history have impacted various	Comment [A22]: 21 <sup>st</sup> Discusses how the h of technology has impacted content areas.
	areas of study; and	or technology has impacted content areas.
<u>(J)</u>	explain technology relevancy as it applies to college and career readiness, life-	
	long learning, and daily living	Comment [A23]: CR Moved from 3E for a fit.
<u>(K)(2)</u>	(A) demonstrate proficiency in the use of a variety of <u>local and remote</u> input	
	devices sources such as mouse/track pad, keyboard, microphone, digital camera, printer, scanner, disk/disc, modem, CD ROM, or joystick network, internet based	Comment [A24]: ER
	sources, portable devices, and emerging technologies;	
(L) <del>(2)</del>	(B) demonstrate use keyboarding proficiency in techniques and posture ergonomic	
	strategies while building speed and accuracy:	Comment [A25]: VA
(M) <del>(7)</del>	(A) plan, create, and edit documents files ereated with productivity tools including	Comment [A26]: 21st – updated to show h
		level thinking and more "process oriented skill instead of "product oriented."
	(i)(7)(A) a word processoring document using readable fonts, alignment, page setup, tabs, and ruler settings digital typography standards such as page	Comment [A27]: ON second reading, add
	layout, font formatting, paragraph formatting, and list attributes;	"including" to show increasing rigor for each plevel.
	(ii)(7)(B) create and edit a spreadsheet workbook documents using components	
	including all data types, <u>chart generation</u> , <u>simple</u> formulas, <u>and basic</u> functions <del>and chart information</del> ;	
	(iii)(7)(C) plan, create, and edit a databases by manipulating components	
	<u>including</u> defining fields, entering data, and designing layouts appropriate for reporting; <u>and</u>	
	(iv)(7)(E) create a document using desktop publishing techniques documents	
	including, but not limited to, the creation of multi- with columns, or multi- sections documents with a variety of text-wrappeding frame	
	graphics, headers, and footers. formats;	
(N) <del>(7)</del>	(D) plan and create demonstrate proficiency in the use of multimedia authoring	
	programs by creating linear or non-linear multimedia projects incorporating text, audio, video, and graphics using graphic design principles; and	Comment [A28]: VA
		Comment [Azo]. VA
(O) <del>(7)</del>	(G) integrate two or more <u>current</u> and <u>emerging technology tools such as</u> productivity tools into a document including but not limited to, tables, charts and	
	graphs, graphics from paint or draw programs, and mail merge, multimedia files,	
	web technologies, and portable files.	Comment [A29]: 21 <sup>st</sup> C
Colvin	g problems. The student uses appropriate computer based productivity tools to	
create	and modify solutions to problems. The student is expected to:	
<del>(F)</del>	differentiate between and demonstrate the appropriate use of a variety of graphic	
	tools found in draw and paint applications;	

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	<del>(H)</del>	use interactive virtual environments, appropriate to level, such as virtual reality	
		or simulations;	
	<del>(I)</del>	use technical writing strategies to create products such as a technical instruction	
	(1)	guide; and	
		8	
	<del>(J)</del>	use foundation and enrichment curricula in the creation of products.	
(8)		ng problems. The student uses research skills and electronic communication, with	
	appro	priate supervision, to create new knowledge. The student is expected to:	
	<del>(A)</del>	participate with electronic communities as a learner, initiator, contributor, and	
	(21)	teacher/mentor;	
		cacher/mentor,	
	<del>(B)</del>	complete tasks using technological collaboration such as sharing information	
		through on line communications;	
	l.a.		
	<del>(C)</del> —	use groupware, collaborative software, and productivity tools to create products;	Comment [A30]: 21 <sup>st</sup> – deleted because it has been covered in 2A above.
	<del>(D)</del>	use technology in self-directed activities by sharing products for defined	been covered in 2A above.
		audiences: and	Comment [A31]: 21st – deleted because it has
			been covered in 2B above.
	<del>(E)</del> —	integrate acquired technology applications skills, strategies, and use of the word	
		processor, database, spreadsheet, telecommunications, draw, paint, and utility	
		programs into the foundation and enrichment curricula.	Comment [A32]: ER, 21 <sup>st</sup> – covered above. This
(0)	Caluin	ng problems. The student uses technology applications to facilitate evaluation of	is a teacher expectation, not student expectation.
(9)		both process and product. The student is expected to:	
	work,	both process and product. The student is expected to:	
	<del>(A)</del>	design and implement procedures to track trends, set timelines, and	
		review/evaluate progress for continual improvement in process and product; and	Comment [A33]: VA, ER - Split between 1D and
	<b>~</b> `		4B. Separated tracking trends and group/project tasks because they are different levels of thinking
	<del>(B)</del> —	resolve information conflicts and validate information through research and	skills.
		comparison of data	Comment [A34]: RC - Included in 3B,
(10)	Comn	nunication. The student formats digital information for appropriate and effective	redundancy.
( )			
		nunication. The student is expected to:	
		nunication. The student is expected to:	
	<del>(A)</del>	use productivity tools to create effective document files for defined audiences	
		use productivity tools to create effective document files for defined audiences	
	<del>(A)</del>	use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports;	
		use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports;  demonstrate the use of a variety of layouts in a database to communicate	
	<del>(A)</del>	use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports;	
	<del>(A)</del>	use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports;  demonstrate the use of a variety of layouts in a database to communicate	
	(A)—(B)—	use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports;  demonstrate the use of a variety of layouts in a database to communicate information appropriately including horizontal and vertical layouts;	
	(A)—(B)—	use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports;  demonstrate the use of a variety of layouts in a database to communicate information appropriately including horizontal and vertical layouts;  create a variety of spreadsheet layouts containing descriptive labels and page	
	(A)—(B)—	use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports;  demonstrate the use of a variety of layouts in a database to communicate information appropriately including horizontal and vertical layouts;  create a variety of spreadsheet layouts containing descriptive labels and page	
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- (D) demonstrate appropriate use of fonts, styles, and sizes, as well as effective use of graphics and page design to effectively communicate; and
- (E) match the chart style to the data when creating and labeling charts.
- (11) Communication. The student delivers the product electronically in a variety of media, with appropriate supervision. The student is expected to:
  - (A) publish information in a variety of ways including, but not limited to, printed copy, monitor display, Internet documents, and video;
  - (B) design and create interdisciplinary multimedia presentations for defined audiences including audio, video, text, and graphics; and
  - (C) use telecommunication tools for publishing such as Internet browsers, video conferencing, or distance learning.
- (12) Communication. The student uses technology applications to facilitate evaluation of communication, both process and product. The student is expected to:
  - (A) design and implement procedures to track trends, set timelines, and review and evaluate the product using technology tools such as database managers, daily/monthly planners, and project management tools;
  - (B) determine and employ technology specifications to evaluate projects for design, content delivery, purpose, and audience, demonstrating that process and product can be evaluated using established criteria or rubries;
  - (C) select representative products to be collected and stored in an electronic evaluation tool; and
  - (D) evaluate the product for relevance to the assignment or task.

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#### §126.12. Technology Applications (Computer Literacy), Grades 6-8. Technology Applications

- (a) General requirements. Districts have the flexibility of offering technology applications (computer literacy) in a variety of settings including a specific class or integrated into other subject areas. Districts are encouraged to offer technology applications in all content areas. They may also be offered in a specific class while being integrated in all content areas.
- (b) Introduction.
  - (1) The technology applications curriculum has four strands: foundations, information acquisition, work in solving problems, and communication six strands: creativity and innovation, communication and collaboration, research and information fluency, critical thinking, problem solving and decision making, digital citizenship, and technology operations and concepts.
  - (2) Through the study of technology applications foundations technology operations and concepts, including technology related terms, concepts, and data input strategies, students learn to make informed decisions about by understanding current and emerging technologies and their applications. The efficient acquisition of information includes the identification of task requirements; the plan for using search strategies; and the use of technology to access, analyze, and evaluate the acquired information. By using technology as a tool that supports the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create a solution, and evaluate the results. Students communicate information in different formats and to diverse audiences. A variety of technologies will be used. Students will analyze and evaluate the results which include technology systems, appropriate digital tools, and personal learning networks. As responsible digital citizens and competent researchers, students use creative and computational thinking to solve problems while developing career and college readiness skills.

Comment [A35]: RC

(c) Knowledge and skills.

(1)(5) Creativity and Innovation Information acquisition. The student acquires electronic information in a variety of formats, with appropriate supervision uses creative thinking and innovative processes to construct knowledge, generate new ideas, and create products. The student is expected to:

Comment [A36]: 21<sup>st</sup> – terminology updated.

- (A) identify, create, and use files in various formats such as text, bitmapped and vector graphics, image, video, and audio files;
- (B) demonstrate the ability to access, operate, and manipulate information from secondary storage and remote devices including CD-ROM/laser discs and on-line catalogs; and

Comment [A37]: VA

Comment [A38]: RC

- (B) create and present original works as a means of personal or group expression;
- (C) use on-line help and other documentation.

- (C) explore complex systems and issues using models, simulations, and new technologies such as making predictions, altering input and reviewing results; and
- (D) analyze trends and forecast possibilities.
- (2) Foundations. The student uses data input skills appropriate to the task. The student is expected to:

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and electronic communication, with appropriate supervision, to create new knowledge, collaborates and communicates both locally and globally to reinforce and promote learning. The student is expected to:  (A) participate with electronic communities as a learner, initiator, contributor, and teacher/mentor;  (A) Create personal learning networks to collaborate and publish with peers, experts, or others via current and emerging technologies, such as blogs, wikis, audio/video sommunications,  (B) complete tasks using technological collaboration such as sharing information through on line communications;  (B) communicate effectively to multiple audiences using a variety of media and formats; and  (C) use groupware, collaborative software, and products for defined audiences; and  (C) create products using technology applications skills, strategies, and use of the word processor, database, spread-heet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curricula.  (A) create a research plan to guide inquiry:  (B) use various apply appropriate resources, with appropriate supervision. The student acquires, analyzes and manaries content from dicital resources uses a variety of strategies to acquire information from deciral resources, with appropriate supervision. The student is expected to:  (A) create a research plan to guide inquiry:  (B) use various apply appropriate electronic search strategies in the acquisition of information including keyword(s) and Boolean identifiers search strategies.  (C) select and evaluate digital resources for accuracy and validity; and  (D) process data and communicate results.		<del>(C)</del>	use digital keyboarding standards for data input such as one space after punctuation, the use of em/en dashes, and smart quotation marks; and	Comment [A39]: 21 <sup>st</sup> outdated terminology.
and electronic communication, with appropriate supervision, to create new knowledge; collaborates and communicates both locally and globally to reinforce and promote learning. The student is expected to:  (A) participate with electronic communities as a learner, initiator, contributor, and teacher/mentor.  (A) Create personal learning networks to collaborate and publish with peers, experts, or others via current and emerging technologies, such as blogs, wikis, audio/video communication;  (B) complete tasks using technological collaboration such as sharing information through on line communications:  (B) communicate effectively to multiple audiences using a variety of media and formats; and  (C) use groupware, collaborative software, and productivity tools to create products.  (C) create products using technology applications skills, strategies, and use of the word processor, database, spreadfacet, telecommunications, draw, paint, and studing programs into the foundation and enrichment curriculus.  (E) integrate acquired technology applications skills, strategies, and use of the word processor, database, spreadfacet, telecommunications, draw, paint, and student sequire information frum electronic resources, with appropriate supervision. The student acquires to acquire information from electronic resources, with appropriate supervision. The student acquires to acquire information from electronic resources, with appropriate supervision. The student acquires to acquire information from electronic resources, with appropriate supervision. The student is a teacher expectation, not student expectation is a teacher of the supervision of information including keyword(s) and Boolean identifiers search strategies.  (C) select and evaluate digital resources for accuracy and validity; and  (D) process data and communicate pesults.  Comment [A43]: 21" - terminology updated reflect new trends and terms.		<del>(D)</del>		Comment [A40]: To be included later.
(A) Create personal learning networks to collaborate and publish with peers, experts, or others via current and emerging technologies, such as blogs, wikis, audio/video bommunication.  (B) complete taske using technological collaboration such as sharing information through on line communications:  (B) communicate effectively to multiple audiences using a variety of media and formats; and  (C) use groupware, collaborative software, and productivity tools to create products.  (C) create products using technical writing strategies.  (D) use technology in self directed activities by sharing products for defined audiences; and  (E) integrate acquired technology applications skills, strategies, and use of the word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curriculus.  (E) integrate acquired technology applications skills, strategies, and use of the word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curriculus.  (E) acceptable of the condition and enrichment curriculus.  (E) acceptable of the word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curriculus.  (E) acceptable of the word processor, database spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curriculus.  (E) acceptable of the word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curriculus.  (E) integrate acquired technology apply appropriate sequences and variety of strategies to each and acquire desired information on LANs and WANs, including the laternet, intranet, and collaborative software; and (A) create a research plan to guide inquiry;  (B) use various apply appropriate electronic search strategies in the acquisition of information including keyword(s) and Boolean identifiers search strategies.  (	<del>(8)</del>	and electronic	ectronic communication, with appropriate supervision, to create new knowledge. orates and communicates both locally and globally to reinforce and promote	
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(C) use groupware, collaborative software, and productivity tools to breate products  (C) create products using technical writing strategies  (D) use technology in self directed activities by sharing products for defined audiences; and  (E) integrate acquired technology applications skills, strategies, and use of the word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curricula.  (B) Research and Information Fluency Information acquisition. The student acquires, analyzes and manages content from digital resources uses a variety of strategies to acquire information from electronic resources, with appropriate supervision. The student is expected to:  (A) use strategies to locate and acquire desired information on LANs and WANs, including the Internet, intranet, and collaborative software; and  (A) create a research plan to guide inquiry;  (B) use various apply appropriate electronic search strategies in the acquisition of information-including keyword(s) and Boolean identifiers search strategies.  (C) select and evaluate digital resources for accuracy and validity; and  (D) process data and communicate results.  Critical Thinking, Problem Solving, and Decision Making, The student makes informed decisions by applying critical thinking and problem solving skills. The student is		<del>(B)</del>		
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(E) integrate acquired technology applications skills, strategies, and use of the word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curricula.  (A) Research and Information Fluency Information acquisition. The student acquires, analyzes and manages content from digital resources uses a variety of strategies to acquire information from electronic resources, with appropriate supervision. [The student is expected to:  (A) use strategies to locate and acquire desired information on LANs and WANs, including the Internet, intranet, and collaborative software; and  (A) create a research plan to guide inquiry;  (B) use various apply appropriate electronic search strategies in the acquisition of information including keyword(s) and Boolean identifiers search strategies.  (C) select and evaluate digital resources for accuracy and validity; and  (D) process data and communicate results  Critical Thinking, Problem Solving, and Decision Making. The student makes informed decisions by applying critical thinking and problem solving skills. The student is		<u>(C)</u>	create products using technical writing strategies.	Comment [A43]: VA
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(A) use strategies to locate and acquire desired information on LANs and WANs, including the Internet, intranet, and collaborative software; and  (A) create a research plan to guide inquiry;  (B) use various apply appropriate electronic search strategies in the acquisition of information including keyword(s) and Boolean identifiers search strategies.  (C) select and evaluate digital resources for accuracy and validity; and  (D) process data and communicate results  Critical Thinking, Problem Solving, and Decision Making. The student makes informed decisions by applying critical thinking and problem solving skills. The student is				supervision removed since this is a given now.
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(B) <u>use various apply appropriate electronie</u> search strategies in the acquisition of information-including keyword(s) and Boolean identifiers search strategies.  (C) select and evaluate digital resources for accuracy and validity; and  (D) process data and communicate results.  Critical Thinking, Problem Solving, and Decision Making. The student makes informed decisions by applying critical thinking and problem solving skills. The student is			including the Internet, intranet, and collaborative software; and	
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(D) process data and communicate results  Critical Thinking, Problem Solving, and Decision Making. The student makes informed decisions by applying critical thinking and problem solving skills. The student is		(B)		
Critical Thinking, Problem Solving, and Decision Making. The student makes informed decisions by applying critical thinking and problem solving skills. The student is		(C)	select and evaluate digital resources for accuracy and validity; and	
Critical Thinking, Problem Solving, and Decision Making. The student makes informed decisions by applying critical thinking and problem solving skills. The student is		(D)	process data and communicate results.	Comment [A47]: 21st – terminology updated
		Critica decisio	al Thinking, Problem Solving, and Decision Making. The student makes informed ons by applying critical thinking and problem solving skills. The student is	

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	(A)	identify and define relevant problems and significant questions for investigation;	
	<u>(B)</u>	plan and manage activities to develop a solution or complete a project;	
	<u>(C)</u>	collect and analyze data to identify solutions and make informed decisions;	
	(D)	use multiple processes and diverse perspectives to explore alternative solutions;	
	<u>(E)</u>	make informed decisions and support reasoning; and	
	<u>(F)</u>	transfer current knowledge to the learning of newly encountered technologies.	
<u>(5)(3)</u>	Digital	<u>Citizenship</u> Foundations. The student complies with the laws and examines the	
		regarding the use of technology in society practices safe, responsible, legal, and behavior while using technology tools and resources. The student is expected to:	
	(A)	understand and practice copyright ownership including current discuss copyright	
	(A)	laws/issues fair use guidelines, creative commons, open source, and public	
		domain;	Comment [A48]: 21st
	(B) <del>(3)(</del>	A) and model practice ethical acquisition, and use standard methods for of digital information, citing sources using established methods;	
	(C)(B)	practice safe and appropriate online behavior, personal security guidelines,	
	<u>(C)</u> (D)	demonstrate proper digital etiquette, and knowledge of acceptable use of	
		technology while in an individual classroom, lab, or on the Internet and intranet; and	
	(D)(C)	understand describe the consequences regarding copyright violations negative	
	<u>(D)(C)</u>	impact of inappropriate technology use, including, but not limited to, computer	
		online bullying and harassment, hacking, computer piracy, intentional virus setting, and invasion of privacy, and piracy such as software, music, video and	Comment [MO] asst no. (fig.)
		other media.	Comment [A49]: 21 <sup>st</sup> , RC specificity, updating terminology
	<del>(D)</del>	identify the impact of technology applications on society through research,	
		interviews, and personal observation; and	Comment [A50]: Already addressed, repetitive.
	<del>(E)</del>	demonstrate knowledge of the relevancy of technology to future careers, life-long	
		learning, and daily living for individuals of all ages	Comment [A51]: CRS moved to 1G.
<del>(6)</del>	Inform	ation acquisition. The student evaluates the acquired electronic information. The	
(-)		is expected to:	
	(A)	determine and employ methods to evaluate the electronic information for	
	(11)	accuracy and validity;	
	(D)	resolve information conflicts and validate information through accessing	
	<del>(B)</del>	resolve information conflicts and validate information through accessing, researching, and comparing data; and	
	(6)		
	<del>(C)</del>	demonstrate the ability to identify the source, location, media type, relevancy, and content validity of available information.	
<u>(6)<del>(1)</del></u>	Techno	ology Operations and Concepts Foundations. The Setudents demonstrates and appropriate use of hardware components, software programs, and their	
	connec	tions a thorough understanding of technology concepts, systems, and operations.	
	The stu	dent is expected to:	

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<del>(B)</del>	compare, contrast, and appropriately use the various input, processing, output,	
( <b>D</b> )	and primary/secondary storage devices; evaluate and select technology tools based on licensing, application, and support;	Comment [A52]: RC Move to romanette above.
(B)		
<del>(C)</del>	demonstrate the ability to select and use software for a defined task according to quality, appropriateness, effectiveness, and efficiency;	Comment [A53]: RC Move to romanette
(C) <del>(A)</del>	<u>understand and</u> <u>demonstrate knowledge and appropriate</u> use of operating systems, <u>software applications, and communication and networking components</u> ;	above.
<del>(D)</del>	delineate and make necessary adjustments regarding compatibility issues including, but not limited to, digital file formats and cross platform connectivity	Comment [A54]: CR 7 <sup>th</sup> grade rigor shou
(D)	understand and use software applications including the ability to select and use software for a defined task;	include
( <del>E)</del>	use technology terminology appropriate to the task;	Comment [A55]: VA, RC
(E)	understand, and use hardware systems;	Comment [A56]: CR Include addition of
<u>(F)</u>	understand troubleshooting techniques such as accessing the command prompt, restarting systems, checking power issues, resolving software compatibility,	"application" to show advancing rigor at 7 <sup>th</sup>
(G)	verifying network connectivity, and modifying display properties; implement effective file management strategies including naming conventions,	
(0)	location, backup, hierarchy, folder structure, and file conversion;	Comment [A57]: VA, ER
<del>(H)</del>	use terminology related to the Internet appropriately including, but not limited to, electronic mail (e mail), Uniform Resource Locators (URLs), electronic bookmarks, local area networks (LANs), wide area networks (WANs), World Wide Web (WWW) page, and HyperText Markup Language (HTML); and	Comment [A58]: RC Combine G,H,I beca fits within 1A & addressed in introduction.
( <u>H</u> ) <del>(F)</del>	perform basic software application functions including, but not limited to, opening an application and creating, modifying, printing, and saving documents files;	TILS WITHIN TA & addressed in introduction.
<u>(I)</u>	compare and contrast LANs, WANs, Internet, and intranet	
<u>(I)(G)</u>	explain how changes in technology throughout history have impacted various areas of study the differences between analog and digital technology systems and	
(J)	give examples of each; and explain technology relevancy as it applies to college and career readiness, life-	Comment [A59]: 21 <sup>st</sup> Discusses how the of technology has impacted content areas.
	long learning, and daily living	Comment [A60]: CR Moved from 3E for fit.
(K)(2)(	A) demonstrate proficiency in the use of a variety of <u>local and remote</u> input devices sources including such as mouse/track pad, keyboard, microphone, digital camera, printer, scanner, <u>disk/discs, modem, CD-ROM, or joystick</u>	
(L) <del>(2)(</del> 1	network, internet based sources, portable devices, and emerging technologies;  B) use demonstrate keyboarding proficiency in techniques and ergonomic	Comment [A61]: ER – emerging technologian include wireless devices.
	strategies and posture while building speed and accuracy;	Comment [A62]: VA
	g problems. The student uses appropriate computer based productivity tools to and modify solutions to problems. The student is expected to:	

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( <del>F</del> )—	differentiate between and demonstrate the appropriate use of a variety of graphic tools found in draw and paint applications;  integrate two or more productivity tools such as, documents, presentations, tables, charts and graphs, graphics from paint or draw programs, and mail merge, and online resources, into a document product including, but not limited to, ;	Comment [A63]: 21 <sup>st</sup> removed due to obsolescence and coverage under multimedia tools May include paint/draw in multimedia when separated by grade level. Move to ISTE 4 because i is a critical thinking/problem solving skill.
<del>(H)</del>	use interactive virtual environments, appropriate to level, such as virtual reality or simulations;	Comment [A64]: Addressed in O
<del>(I)</del>	use technical writing strategies to create products such as a technical instruction guide; and	
<del>(J)</del>	use foundation and enrichment curricula in the creation of products.	
<u>(M)</u> (7	(i)(7)(A) plan, create; and edit documents files ereated with productivity tools including  (i)(7)(A) a word processoring document using digital typography standards including page layout, and font formatting, paragraph formatting and list attributes readable fonts, alignment, page setup, tabs, and ruler settings;	Comment [A65]: 21 <sup>st</sup> – updated to show higher level thinking and more "process oriented skills" instead of "product oriented."
	(ii)(7)(B) a create and edit spreadsheet workbook documents using all components including complex formulas, basic functions, data types, formulas and functions, and chart generation information;	
	(iii)(7)(C) a plan, create, and edit databases by manipulating components including defining fields, entering data, and designing layouts appropriate for reporting; and	
	(iv)(7)(E) create a document using desktop publishing techniques documents including, but not limited to, the creation of multi- with columns, or multi-sections documents with a variety of text-wrapping ed frame graphics, headers, and footers formats;	
(N) <del>(7</del>	(D) plan and create demonstrate proficiency in the use of multimedia authoring programs by creating linear or non-linear multimedia projects incorporating text, audio, video, and graphics using graphic design principles; and	Comment [A66]: VA
(O)	integrate two or more current and emerging technology tools such as productivity tools, multimedia files, web technologies, and portable files.	
	ng problems. The student uses technology applications to facilitate evaluation of , both process and product.	
	design and implement procedures to track trends, set timelines, and review/evaluate progress for continual improvement in process and product; and resolve information conflicts and validate information through research and	Comment [A67]: VA, ER - Split between 1D and 4B. Separated tracking trends and group/project
<del>(B)</del>	esonve information contricts and validate information through research and comparison of data	tasks because they are different levels of thinking skills.  Comment [A68]: RC - Included in 3B,
	nunication. The student formats digital information for appropriate and effective nunication. The student is expected to:	redundancy.

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- (A) use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports;
- (B) demonstrate the use of a variety of layouts in a database to communicate information appropriately including horizontal and vertical layouts;
- (C) create a variety of spreadsheet layouts containing descriptive labels and page settings;
- (D) demonstrate appropriate use of fonts, styles, and sizes, as well as effective use of graphics and page design to effectively communicate; and
- (E) match the chart style to the data when creating and labeling charts.
- (11) Communication. The student delivers the product electronically in a variety of media, with appropriate supervision. The student is expected to:
  - (A) publish information in a variety of ways including, but not limited to, printed eopy, monitor display, Internet documents, and video;
  - (B) design and create interdisciplinary multimedia presentations for defined audiences including audio, video, text, and graphics; and
  - (C) use telecommunication tools for publishing such as Internet browsers, video conferencing, or distance learning.
- (12) Communication. The student uses technology applications to facilitate evaluation of communication, both process and product. The student is expected to:
  - (A) design and implement procedures to track trends, set timelines, and review and evaluate the product using technology tools such as database managers, daily/monthly planners, and project management tools;
  - (B) determine and employ technology specifications to evaluate projects for design, content delivery, purpose, and audience, demonstrating that process and product can be evaluated using established criteria or rubrics;
  - (C) select representative products to be collected and stored in an electronic evaluation tool; and
  - (D) evaluate the product for relevance to the assignment or task

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#### §126.12. Technology Applications (Computer Literacy), Grades 6-8. Technology Applications

- (a) General requirements. Districts have the flexibility of offering technology applications (computer literacy) in a variety of settings, including a specific class or integrated into other subject areas. Districts are encouraged to offer technology applications in all content areas. They may also be offered in a specific class while being integrated in all content areas.
- (b) Introduction.
  - (1) The technology applications curriculum has four strands: foundations, information acquisition, work in solving problems, and communication six strands: creativity and innovation, communication and collaboration, research and information fluency, critical thinking, problem solving and decision making, digital citizenship, and technology operations and concepts.
  - (2) Through the study of technology applications foundations technology operations and concepts, including technology related terms, concepts, and data input strategies, students learn to make informed decisions about by understanding current and emerging technologies and their applications. The efficient acquisition of information includes the identification of task requirements; the plan for using search strategies; and the use of technology to access, analyze, and evaluate the acquired information. By using technology as a tool that supports the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create a solution, and evaluate the results. Students communicate information in different formats and to diverse audiences. A variety of technologies will be used. Students will analyze and evaluate the results which include technology systems, appropriate digital tools, and personal learning networks. As responsible digital citizens and competent researchers, students use creative and computational thinking to solve problems while developing career and college readiness skills.

Comment [A69]: RC Consider adding a statement about using technology terminology.

(c) Knowledge and skills.

(1)(5) Creativity and Innovation Information acquisition. The student acquires electronic information in a variety of formats, with appropriate supervision uses creative thinking and innovative processes to construct knowledge, generate new ideas, and create products. The student is expected to:

Comment [A70]: 21st – terminology updated.

- (A) identify, create, and use files in various formats such as including text, bitmapped-and vector graphics, image, video, and audio files;
- (B) demonstrate the ability to access, operate, and manipulate information from secondary storage and remote devices including CD-ROM/laser discs and on-line catalogs; and

Comment [A71]: VA

- (B) create, present, and publish original works as a means of personal or group expression;
- (C) use on line help and other documentation.

Comment [A72]: RC

- (C) explore complex systems and issues using models, simulations, and new technologies such as developing hypotheses, modifying input, and analyzing results; and
- (D) analyze trends and forecast possibilities.

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and electronic communication, with appropriate supervision, to create new knowledge.  collaborates and communicates both locally and globally to reinforce and promote learning. The student is expected to:  (A) participate with electronic communities as a learner, initiator, contributor, and teacher/mentor;  (A) Create personal learning networks to collaborate and publish with peers, experts, or others via current and emerging technologies, such as blogs, wikis, audio/video communication;  (B) complete tasks using technological collaboration such as sharing information through on line communications;  (B) communicate effectively to multiple audiences using a variety of media and formats; and  (C) use groupware, collaborative software, and productivity tools to create products: (C) create products using technical writing strategies.  (C) use technology in self directed activities by sharing products for defined audiences; and  (E) integrate acquired technology applications skills, strategies, and use of the word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curricula.  (Comment [A79]: 21" – deleted because it ha been covered in 28 above.  (Comment [A79]: 21" – deleted because it ha been covered in 28 above.  (Comment [A79]: 21" – deleted because it ha been covered in 28 above.  (Comment [A79]: 21" – deleted because it ha been covered in 28 above.  (Comment [A79]: 21" – deleted because it ha been covered in 28 above.  (Comment [A79]: 21" – deleted because it ha been covered in 28 above.  (Comment [A79]: 21" – deleted because it ha been covered in 28 above.  (Comment [A79]: 21" – deleted because it ha been covered in 28 above.  (Comment [A79]: 21" – deleted because it ha been covered in 28 above.  (Comment [A79]: 21" – deleted because it ha been covered in 28 above.  (Comment [A79]: 21" – deleted because it ha been covered in 28 above.  (Comment [A79]: 21" – deleted because it ha been covered in 28 above.  (Comment [A79]: 21" – deleted bec		expect	t <del>ed to:</del>	
(8) Communication and Collaboration Solving problems. The student uses research skills and electronic communication, with appropriate supervision, to create new knowledge, collaborates and communication and electronic communication, with appropriate supervision, to create new knowledge, collaborates and communicates both locally and globally to reinforce and promote. learning. The student is expected to:  (A) participate with electronic communities as a learner, initiator, contributor, and teacher/mentors.  (A) Create personal learning networks to collaborate and publish with peers, experts, or others via current and emerging technologies, such as ologs, whis, and/ov/ideo communications.  (B) complete tasks using technological collaboration such as sharing information through on line communications.  (C) use groupware, collaborative software, and productivity tools to create products.  (C) create products using technology applications skills, strategies, and use of the word processor, duables, spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curriculal.  (A) create a research plan to guide inquiry:  (B) use various apply appropriate desired information on LANs and WANs, including the Internet, intranet, and collaborative software; and collaborat		<del>(C)</del>		
Comment [A74]: To be included later.  Comment [A75]: Cas. Later.  Comment [A75]: Cas. Later.  Comment [A76]: Cas. Later.  Comment [A76]: Cas. Later.  Comment [A76]: Cas. Later.  Comment [A76]: Cas. Later.  Comment [A77]: C				Comment [A73]: 21 <sup>st</sup> outdated terminology.
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Estable   Processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curricular		<del>(D)</del>		ELA TEKS. 6 <sup>th</sup> – Write the steps, 8 <sup>th</sup> show mastery
processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curricula.  (4) Research and Information Fluency Information acquisition. The student acquires, analyzes and manages content from digital uses a variety of strategies to acquire information from electronic resources, with appropriate supervision. The student is expected to:  (A) use strategies to locate and acquire desired information on LANs and WANs, including the Internet, intranet, and collaborative software; and  (A) create a research plan to guide inquiry;  (B) use various apply appropriate electronic search strategies in the acquisition of information including keyword(s) and Boolean search strategies: identifiers;  (C) select and evaluate digital resources for accuracy and validity; and  (D) process data and communicate results.  (Comment [A81]: 21* - terminology updated		<del>(E)</del>	integrate acquired technology applications skills, strategies, and use of the word	
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		<u>(C)</u>		
		<u>(D)</u>	process data and communicate results	

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4)		Thinking, Problem Solving, and Decision Making. The student makes informed	
	decisio	ns by applying critical thinking and problem solving skills. The student is ed to:	
	(A)	identify and define relevant problems and significant questions for investigation;	
	<u>(B)</u>	plan and manage activities to develop a solution or complete a project:	
	<u>(C)</u>	collect and analyze data to identify solutions and make informed decisions;	
	(D)	use multiple processes and diverse perspectives to explore alternative solutions;	
	<u>(E)</u>	make informed decisions and support reasoning; and	
	<u>(F)</u>	transfer current knowledge to the learning of newly encountered technologies.	
<u>(3)</u>		<u>Citizenship</u> Foundations. The student complies with the laws and examines the regarding the use of technology in society practices safe, responsible, legal, and	
	ethical	behavior while using technology tools and resources. The student is expected to:	
	(A)	understand, explain, and practice discuss copyright ownership including current laws discuss, fair use guidelines, creative commons, open source, and public	
		domain;	Comment [A82]: 21st C
	(B) <del>(3)(</del>	A) practice and explain and model ethical acquisition and standard methods for use of digital information, citing sources using established methods;	
	<u>(C)(B)</u>	practice demonstrate and explain safe and appropriate online behavior, personal security guidelines, proper digital etiquette, and knowledge of acceptable use of technology; and while in an individual classroom, lab, or on the Internet and intranet;	
	( <u>D</u> ) <del>(C)</del>	-understand and explain describe the consequences regarding copyright violations negative impact of inappropriate technology use, including, but not limited to, computer online bullying and harassment, hacking, computer piracy, intentional	
		virus setting, and invasion of privacy, and piracy such as software, music, video and other media.	Comment [A83]: 21 <sup>st</sup> , RC specificity, updating terminology
	<del>(D)</del>	identify the impact of technology applications on society through research,	
		interviews, and personal observation; and	Comment [A84]: Already addressed, repetitive
	<del>(E)</del>	demonstrate knowledge of the relevancy of technology to future careers, life-long learning, and daily living for individuals of all ages.	0
		rearring, and daily fiving for individuals of an ages.	Comment [A85]: CRS moved to 1G.
)		ation acquisition. The student evaluates the acquired electronic information. The is expected to:	
	<del>(A)</del>	determine and employ methods to evaluate the electronic information for accuracy and validity;	
	<del>(B)</del>	resolve information conflicts and validate information through accessing, researching, and comparing data; and	
	<del>(C)</del>	demonstrate the ability to identify the source, location, media type, relevancy,	
		and content validity of available information.	

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	logy Operations and Concepts Foundations. The sStudents demonstrates dge and appropriate use of hardware components, software programs, and their	
	tions a thorough understanding of technology concepts, systems, and operations.  dent is expected to:	
	use <u>current</u> technology terminology appropriately to the task;	
( <del>D</del> )	compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices;	Comment [A86]: RC Move to romanette
<u>(B)</u>	evaluate and select technology tools based on licensing, application, and support;	above.
<del>(C)</del>	demonstrate the ability to select and use software for a defined task according to quality, appropriateness, effectiveness, and efficiency;	Comment [A87]: RC Move to romanette above.
(C)(A)	understand and use demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components;	
<u>(F)</u>	delineate and make <u>understand file types, cross platforms and compatibility</u> <u>issues.</u> necessary adjustments regarding compatibility issues including, but not	Comment [A88]: Moved to 1A
	limited to, digital file formats and cross platform connectivity;	Comment [A89]: CR 7 <sup>th</sup> grade rigor should include
(D)	understand and use software applications including the ability to select and use software for a defined task;	
<u>(E)</u>	understand and use hardware systems:	Comment [A90]: CR Include addition of "application" to show advancing rigor at 7 <sup>th</sup> g
<u>(F)</u>	understand troubleshooting techniques including accessing the command prompt, rebooting, power issues, software compatibility, network connectivity, connecting to a remote resource, and modifying display properties;	
<u>(G)</u>	implement effective file management strategies including naming conventions, location, backup, hierarchy, folder structure, and file conversion;	Comment [A91]: ER, VA
<del>(H)</del>	use terminology related to the Internet appropriately including, but not limited to, electronic mail (e-mail), Uniform Resource Locators (URLs), electronic	Comment [A92]: RC Combine G,H,I becau fits within 1A & addressed in introduction.
	bookmarks, local area networks (LANs), wide area networks (WANs), World Wide Web (WWW) page, and HyperText Markup Language (HTML); and	
<u>(H)</u> <del>(F)</del>	perform basic software application functions including, but not limited to, opening an application program and creating, modifying, printing, and saving documents files;	
<u>(I)</u>	compare and contrast LANs, WANs, Internet, and intranet	
<u>(I)</u> ( <del>G)</del>	explain how changes in technology throughout history have impacted various areas of study; differences between analog and digital technology systems and	
<u>(J)</u>	give examples of each; explain technology relevancy as it applies to college and career readiness, life-	Comment [A93]: 21 <sup>st</sup> Discusses how the of technology has impacted content areas.
	long learning, and daily living:	Comment [A94]: CR Moved from 3E for a fit.
<u>(K)<del>(2)(</del></u>	A) demonstrate proficiency in the use of a variety of local and remote input devices such as sources including mouse/track pad, keyboard, microphone, digital camera, printer, scanner, disk/dise, modem, CD ROM, or joystick	
(T.)(0)(I	network, internet based sources, portable devices, and emerging technologies;	Comment [A95]: ER
(L) <del>(2)(</del> 1	B) demonstrate keyboarding proficiency in techniques and ergonomic strategies and posture while building speed and accuracy;	Comment [A96]: VA

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Solving problems. The student uses appropriate computer based productivity tools to create and modify solutions to problems. The student is expected to: Comment [A97]: 21st removed due to obsolescence and coverage under multimedia tools. May include paint/draw in multimedia when separated by grade level. Move to ISTE 4 because it tables, charts and graphs, graphics from paint or draw programs, and mail merge, is a critical thinking/problem solving skill. (M)(7)(A) plan, create, and edit documents files created with productivity tools including Comment [A98]: 21st - updated to show higher level thinking and more "process oriented skills" (i)(7)(A) a word processoring document using digital typography standards instead of "product oriented." including page layout, font formatting, paragraph formatting, mail merge, and list attributes readable fonts, align ruler settings; (ii)(7)(B) create and edit a spreadsheet workbook documents using components including complex formulas, advanced functions, all data types, formulas and functions, and chart information generation; all data types, formulas and functions, and chart information; (iii) (7)(C) plan, create, and edit a databases-by manipulating components including defining fields, entering data, and designing layouts appropriate for reporting; and (iv)(7)(E) create a document using desktop publishing techniques documents with including, but not limited to, the creation of multi-columns, or multi-sections, documents with a variety of text-wrappeding, frame formats; graphics, tables, headers, and footers. (N)(7)(D) plan and create demonstrate proficiency in the use of authoring programs by ereating linear or non-linear multimedia projects incorporating text, audio, video, and graphics; using graphic design principles; and Comment [A99]: VA integrate two or more current and emerging technology tools such as productivity tools, multimedia files, web technologies, and portable files. Comment [A100]: 21st C work, both process and product. Comment [A101]: VA, ER - Split between 1D and 4B. Separated tracking trends and resolve information conflicts and validate information through research and group/project tasks because they are different levels of thinking skills. comparison of data. Comment [A102]: RC - Included in 3B, Communication. The student formats digital information for appropriate and effective redundancy. communication. The student is expected to: use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or demonstrate the use of a variety of layouts in a database to communicate information appropriately including horizontal and vertical layouts;

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- (C) create a variety of spreadsheet layouts containing descriptive labels and page settings;
- (D) demonstrate appropriate use of fonts, styles, and sizes, as well as effective use of graphics and page design to effectively communicate; and
- (E) match the chart style to the data when creating and labeling charts.
- (11) Communication. The student delivers the product electronically in a variety of media, with appropriate supervision. The student is expected to:
  - (A) publish information in a variety of ways including, but not limited to, printed copy, monitor display, Internet documents, and video;
  - design and create interdisciplinary multimedia presentations for defined audiences including audio, video, text, and graphics; and
  - (C) use telecommunication tools for publishing such as Internet browsers, video conferencing, or distance learning.
- (12) Communication. The student uses technology applications to facilitate evaluation of communication, both process and product. The student is expected to:
  - (A) design and implement procedures to track trends, set timelines, and review and evaluate the product using technology tools such as database managers, daily/monthly planners, and project management tools;
  - (B) determine and employ technology specifications to evaluate projects for design, content delivery, purpose, and audience, demonstrating that process and product can be evaluated using established criteria or rubrics;
  - (C) select representative products to be collected and stored in an electronic evaluation tool; and
  - (D) evaluate the product for relevance to the assignment or task.

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