Texas Essential Knowledge and Skills (TEKS) Technology Applications, Kindergarten–Grade 8
Draft Recommendations

The document reflects draft recommendations to the standards for the technology applications Texas Essential Knowledge and Skills (TEKS) for kindergarten–grade 8 that have been recommended by the State Board of Education's TEKS review **Work Group E**. The document is presented in a vertical alignment chart to present vertical alignment across grade levels.

Proposed additions are shown in green font with underline (<u>additions</u>). Proposed deletions are shown in red font with strikethroughs (<u>deletions</u>). Text proposed to be moved from its current student expectation is shown in purple italicized font with strikethrough (<u>moved text</u>) and is shown in the proposed new location in purple italicized font with underlines (<u>new text location</u>). Numbering for the knowledge and skills statements in the document will be finalized when the proposal is prepared to file with the <u>Texas Register</u>.

Comments in the right-hand column provide explanations for the proposed changes. Abbreviations in the explanations refer to the following.

CSTA: Computer Science Teachers Association

SE: student expectation VA: change to support VA

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(a) Introduction

- (1) Technology includes data communication, data processing, and the devices used for these tasks locally and across networks. Learning to apply these technologies motivates students to develop critical-thinking skills, higher-order thinking, and innovative problem solving. Technology applications incorporates the study of digital tools, devices, communication, and programming to empower students to apply current and emerging technologies in their careers, their education, and beyond.
- (2) The technology applications standards consist of five strands developed to prepare students to be literate in technology applications by grade 8: computational thinking; creativity and innovation; data literacy, management, and representation; digital citizenship; and practical technology concepts. Communication and collaboration skills are embedded across the strands.
 - (A) Computational thinking. Students break down the problem-solving process into four steps that include decomposition, pattern recognition, abstraction, and algorithms.
 - (B) Creativity and innovation. Students use innovative design processes to develop solutions to problems. Students will plan a solution, create the solution, test the solution, iterate, and debug the solution as needed, and implement a completely new and innovative product.
 - (C) Data literacy, management, and representation. Students collect, organize, manage, analyze, and publish various types of data for an audience.
 - (D) Digital citizenship. Students practice ethical and effective application of technology and develop an understanding of cybersecurity and the impact of a digital footprint to become safe, productive, and respectful digital citizens.
 - (E) Practical technology concepts. Students build their knowledge of software applications and hardware focusing on keyboarding and use of the applications and tools. (Grades 3-8 only) Students also build their knowledge and use of technology systems including integrating the use of multiple applications.
- (3) The standards can be integrated into all content areas and can support stand-alone courses. Districts have the flexibility of offering technology applications in a variety of settings.
- (4) Statements containing the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

				S	trand: Commun	ication and Col	laboration		
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale
			NEW SE:	NEW SE:	NEW SE:	NEW SE:	NEW SE:	NEW SE:	This work group agrees with the decision of Work
			define digital	demonstrate	demonstrate	collaborate	<i>collaborate</i>	collaborate	Group D to embed student expectations that encompass
			<i>collaboration</i>	<i>appropriate</i>	appropriate	on digital	on digital	and publish	communication and collaboration skills in the other
				digital	digital	platforms	<i>platforms</i>	for a global	student expectations for all strands. Learning objectives
				etiquette for	etiquette for	such as	such as	audience on	will still be included. This decision would only slightly
				various forms	<i>collaborating</i>	recording a	recording a	digital	change teacher understanding. In other content standards
				of digital	with different	video	video	platforms	there are communication and collaboration already
				collaboration	audiences	conference	conference	such as	embedded. Not all districts have tech apps as a stand-
				such as	such as peers,	<i>presentation</i>	presentation	recording and	alone class; embedding may help to clear understanding
				shared	teachers, and	using	using	editing videos	for non-specialists. This approach simplifies the student
				documents,	other adults	<i>appropriate</i>	<i>appropriate</i>	using	expectations for teachers and purposely integrates the
				video		formal and	formal and	<i>appropriate</i>	standards in a meaningful way. Communication and
				conferencing,		informal	informal	formal and	collaboration are the 21st century skills that cover all
				and other		digital	digital	informal	other subjects. Thee student expectations were moved to
				platforms		etiquette	etiquette	digital	the digital citizenship strand.
								etiquette	

					Strand: Com	putational Think	ing				
					Substra	nd: Foundations					
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale		
	hinkingfoundations					g, a set of problem-	-solving processes tl	hat involve			
decomposition,	ecomposition, pattern recognition, abstraction, and algorithms. The student is expected to:										
NEW (A)	NEW (A) identify	NEW (A)	NEW (A)	NEW (A)	NEW (A)	NEW (A)	NEW (A)	NEW (A)			
identify a	and discuss a	identify and	decompose	decompose	decompose a	decompose	decompose real-	decompose real-			
problem or	problem or task	communicate	story	story	real-world	real-world	world problems	world problems			
task such as	and break down	a problem or	problems	problems	problem into	problems into	into structured	into structured			
making a	(decompose) the	task and	into smaller,	into smaller,	smaller,	structured parts	parts by using	parts by using			
sandwich and	solution into	break down	manageable	manageable	manageable	by using visual	flowcharts	pseudocode			
break it down	sequential steps	(decompose)	subproblems	subproblems	subproblems	representation					
(decompose)		multiple	and identify	and discuss	using graphic						
into smaller		solutions into	a solution to	and	organizers such						
pieces		sequential	the problem	document	as learning						
		steps		various	maps, concept						
				solutions to	maps, or other						
				the problem	representations						
					of data						

	Strand: Computational Thinking											
						nd: Foundations						
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale			
NEW (B)	NEW (B) identify	NEW (B)	NEW (B)	NEW (B)	NEW (B)	NEW (B) analyze	NEW (B)	NEW (B)	Clarified language			
identify simple	the simple	identify	identify	identify	identify	the patterns and	analyze the	analyze the				
patterns and	patterns found in	complex	simple and	patterns in	patterns in real-	sequences found	patterns and	patterns and				
make	the solutions to	patterns and	<u>complex</u>	story	world problems	in visual	sequences found	sequences found				
predictions	everyday	make	patterns in	problems	and make	representations	in flowcharts	in pseudocode				
based on the	problems or tasks	predictions	story problems	and make	predictions	such as learning		and identify its				
pattern		based on the		predictions	based on the	maps, concept		variables				
		pattern		based on the	pattern	maps, or other						
				pattern		representations of						
						data						
						NEW (C) define	NEW (C)	NEW (C)				
						abstraction and	identify	practice				
						distinguish	abstraction and	abstraction by				
						between	analyze how an	developing a				
						generalized	algorithm the	generalized				
						information	student created	algorithm that				
						versus specific	can be	can solve				
						information in the	generalized to	different types				
						context of solving	solve additional	of problems				
						a problem or	problems					
						completing a task						
		NEW (C)	NEW (C)	NEW (C)	NEW (C)	NEW (D) design a	NEW (D) design	NEW (D)	The work group believes there was something			
		analyze a	develop	communicate	design and	plan	<u>a plan</u>	design a plan	missing between the foundations and applications			
		plan with	collaboratively	design plans	create an	collaboratively	collaboratively	collaboratively	substrands. The group added this row to explicitly			
		<u>teacher</u>	and document	and solutions	outline	using visual	using flowcharts	using	address that students should plan before creating			
		guidance that	a plan that	using a	collaboratively	representations	that document a	pseudocode that	tasks in the application substrand. Planning is			
		outlines the	outlines	variety of	that documents	that document a	problem,	documents a	critical to the process and should explicitly be			
		steps needed	specific steps	options	the problem,	problem, possible	possible	problem,	taught.			
		to complete a	taken to		solution(s), and	solutions, and an	solutions, and an	possible 1				
		<u>task</u>	complete a		an expected	expected timeline	expected	solutions, and an				
			project		timeline for the	for the	timeline for the	expected				
					development of	development of a	development of	timeline for the				
					a coded	coded solution	a coded solution	development of				
					solution			a coded solution				

					Strand: Com	putational Think	ing		
					Substra	nd: Foundations			
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale
NEW (C)	NEW (C) create a	NEW (D) (C)	NEW (D)	NEW (D)	NEW (D) (C)	NEW (E) (D)	NEW (E) (D)	NEW (E) (D)	
identify	simple algorithm	create and	(C) debug	(C) debug	compare	analyze	analyze different	develop,	
algorithms	(step-by-step	troubleshoot	simple	algorithms	multiple	different	techniques used	compare, and	
(step-by-step	instructions) as it	simple	algorithms	(set of	algorithms for	techniques used	in debugging	improve	
instructions)	applies to an	algorithms	(set of	procedures)	the same task	in debugging	and apply them	algorithms for a	
using a	everyday task	(step-by-step	procedures)	by	and determine	and apply them	to an algorithm	specific task to	
sequential		instructions)	by	identifying	which	to an algorithm		solve a problem	
process such as		that include	identifying	and	algorithm is the				
first, next,		conditionals	and	removing	most				
then, and last		such as if-	removing	errors	appropriate for				
		then	errors		that task				
		statements as							
		they apply to							
		an everyday							
		task							
						NEW (F) (E)	NEW (F) (E)	NEW (F) (E)	
						analyze the	analyze the	analyze the	
						benefits of	benefits of using	benefits of using	
						using iteration	iteration (code	iteration (code	
						(code and	and sequence	and sequence	
						sequence	repetition) in	repetition) in	
						repetition) in	algorithms	algorithms	
						algorithms			

Strand: Computational Thinking										
		1			d: Applications					
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale	
	kingapplications. Th			kingapplications. Tl	ne student applies the	fundamentals of com	puter science. The st	udent is		
	lucator, applies the fu		expected to:	xpected to:						
computer science. T	he student is expecte									
		NEW (A) identify	NEW (A) use	NEW (A) use	NEW (A) use	NEW (A) define	NEW (A)	NEW (A)		
		and explore what	variables within a	variables within a	variables within a	and label variables	manipulate and	construct		
		a variable is in a	program to store	program to	program to store	that relate to their	rename variables	named		
		sequence of code	data	modify data	and modify data.	programming or	and describe	variables with		
						algorithm	different data	multiple data		
							types	types and		
								perform		
								operations on		
								their values		
NEW (A) identify	NEW (A) create a	NEW (B) create a	NEW (B) create	NEW (B) create	NEW (B) create a	NEW (B) create	NEW (B) create	NEW (B)	Work group wanted to	
and create a	sequence of code	sequence of code	programs <u>using a</u>	programs <u>using a</u>	block-based	block-based and	text-based	create text-	ensure there was a	
sequence of code	that solves a	using a design	design process	design process	programs using a	text-based	programs <u>using a</u>	based	differentiation and	
with or without	simple problem	process that	that include	that include	design process	programs using a	software design	programs	progression from grades 5-	
technology such	with or without	includes loops to	sequences, loops,	sequences, loops,	that include	design process	process with	using a	8.	
as solving a maze	technology	solve a simple	and conditionals	conditionals, and	sequences, loops,	that include	nested loops that	software		
using drag-and-		problem with or	to express ideas or	events to express	conditionals, and	sequences, loops,	address different	design process		
drop		without	address a problem	ideas or address a	events to solve an	conditionals, and	subproblems	and combine		
programming or		technology		problem	everyday problem	events to solve an	within a real-	control		
creating step-by-						everyday problem	world context	structures,		
step directions for								including		
student movement						NEW (B) create		nested loops,		
to a specific						programs that		and compound		
location						address different		conditionals,		
						subproblems		that address		
						within a real-		real-world		
						world context		situations		

	Strand: Computational Thinking											
	Substrand: Applications											
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale			
					NEW (C) analyze			NEW (C)				
					code and how it			modify and				
					may be reused to			implement				
					develop new or			previously				
					improved			written code to				
					programs.			develop new				
								and improved				
								programs				

					d: Creativity and In					
				Substra	nd: Innovative Des	ign Process				
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale	
				active role in their le		Creativity and innov				
		blems for a local or	r global audience u	sing a variety of tech	nologies. The	student takes an active role in their learning using a design				
student is expecte	ed to:					process and creative				
						solutions considerin				
						perspectives. The st				
NEW (A)	NEW (A)	NEW (A)	NEW (A)	NEW (A) <u>-explain</u>	NEW (A) <u>-explain</u>	NEW (A) utilize	NEW (A) utilize	NEW (A) utilize	Clarified language by adding	
<u>practice</u>	practice	demonstrate	explain the	the importance of	the importance of	goal setting and	goal setting and	goal setting and	personal skills	
personal skills,	personal skills,	personal skills,	importance of	and demonstrate	and demonstrate	personal character	personal	personal character		
including	including	including	<u>and</u>	personal skills,	personal skills,	growth	character growth	growth, including		
<u>following</u>	following	<u>effective</u>	demonstrate	including problem	including	independently	independently	independently		
directions,	directions and	communication,	personal skills,	solving and	persistence,	such as	such as	such as		
needed to	mental agility,	following	including	questioning,	<u>effective</u>	demonstrating	demonstrating	demonstrating		
successfully	needed to	directions, and	metacognition,	<u>effective</u>	communication,	courage and	responsibility	calculated risk-		
<u>implement</u>	implement the	mental agility,	<u>effective</u>	communication,	following	confidence to	and appropriate	taking and		
design	<u>design</u>	needed to	communication,	following	directions, mental	resolve challenges	self-advocation	tolerance to		
processes	processes	implement the	following	directions, mental	agility,	in design	to resolve	innovate using		
	successfully	design	directions, and	agility,	metacognition,	processes	challenges in	design processes		
identify		processes	mental agility,	metacognition,	problem solving		design processes			
beneficial	NEW (A)	successfully	needed to	needed to	and questioning,					
character traits	identify		implement the	implement the	and, needed to					
and dispositions	beneficial	NEW (A)	design	design processes	implement the					
to set personal	character traits	connect	processes	successfully	design processes					
goals through	and dispositions	beneficial	successfully		successfully					
guided	to set personal	character traits		NEW (A) develop						
discussion to	goals through	and dispositions	NEW (A)	personal character	NEW (A) create					
support the	guided	in order to set	develop	and group goals	personal					
design	discussion to	personal goals	personal	such as	character and					
processes	support the	and use guided	character goals	demonstrating	group goals such					
	design	reflection to	and use	perseverance and	as demonstrating					
	processes	analyze their	feedback to	flexibility while	compassion and					
		progress	reflect and	receiving	tolerance while					
		through the	make decisions	feedback and	giving feedback and making					
		design	through the	making decisions through the design	decisions through					
		processes	design	\mathcal{E}						
			processes	processes	the design					
					processes					

	Strand: Creativity and Innovation											
				Substra	nd: Innovative Des	ign Process						
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale			
NEW (B) use a	NEW (B) use a	NEW (B) apply	NEW (B) apply	NEW (B) apply	NEW (B) apply	NEW (B) discuss	NEW (B)	NEW (B) discuss	The group feels that they want to			
guided design	guided design	a design process	an appropriate	an appropriate	an appropriate	and implement a	discuss and	and implement a	emphasize the design process but			
process to	process to	to identify and	design process	design process	design process	design process	implement a	design process to	not the practical application			
identify and	identify and	solve for	using	using components	including	using digital tools	design process	plan and select	because that is covered in the			
solve authentic	solve authentic	authentic	components	such as utilizing	components to	to compare,	to plan and	digital tools to	practical technology concepts			
problems with	problems with	problems with	such as peer	feedback to	generate multiple	contrast, and	select digital	develop, test,	strand.			
components	components	components	and teacher	improve and	solutions for an	evaluate student-	tools to develop	evaluate design				
such as asking	such as asking	such as testing	feedback to	refine processes	authentic	generated	and refine a	limitations, and				
questions,	questions,	and reflecting to	create new and	and original	problem and	outcomes	prototype or	refine a prototype				
brainstorming,	brainstorming,	create new and	useful solutions	products for	develop original		model through	or model and how				
or storyboarding	or storyboarding	useful solutions	for authentic	authentic	products using		trial and error	the design process				
to generate	to generate	and develop	problems and	problems using	digital tools and			is used in various				
ideas and	ideas and	original	develop	digital tools and	resources			industries				
develop original	develop original	products using	original	resources								
products using	products using	digital tools and	products using									
digital tools	digital tools and	resources	digital tools and	,								
resources	resources		resources			A 7	2.77777 (20)	3.7777. (20.14.10				
						NEW (C) identify	NEW (C)	NEW (C) identify	The work group would like to add			
						how the design	identify how the	how the design	this student expectation to align to			
						process is used in	design process is	process is used in	college and career readiness.			
						<u>various industries</u>	used in various	various industries	Allows students to explore			
							<u>industries</u>		different pathways and gives			
									students exposure to different real			
									world career pathways.			

Strand: Creativity and Innovation												
					Substrand: Em	erging Technologi	es					
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale			
	Creativity and inno					Creativity and in	novationemerging	g technologies.	Impacts of computing aligns to ideas in computer			
	understanding that		ynamic and impac	cts different com	munities. The		onstrates a thoroug		science principles and is connected the CSTA			
	student is expected	l to:					hnology throughou		standards.			
							ies the evolution of	technology. The				
		T				student is expect		Tarr				
						(A) discuss	(A) explain how	(A) evaluate				
						how changes in		how changes in				
						technology	technology	technology				
						throughout	throughout	throughout				
						history have	history have	history have				
						impacted	impacted	impacted				
						various areas of	various areas of	various areas of				
	NEW (A)	NEW (A)	NEW (A)	NEW (A)	NEW (A)	study; NEW (B)	study; NEW (B)	study; NEW (B)	The week arrays discussed the social studies TEVS			
	identify examples	identify and	define	identify	predict how	discuss how	explain how	evaluate and	The work group discussed the social studies TEKS and would like to ensure that emerging			
	of how	analyze how		examples of	emerging	global trends	global trends	predict how	technologies is included in technology			
	technology has	technology	emerging technologies	emerging	technologies	impact the	impact the	global trends	applications TEKS for grades 1–5.			
	impacted	impacts	teemiologies	technologies	may impact	development of	development of	impact the	applications TERS for grades 1 3.			
	different	different		teemologies	different	technology	technology	development of				
	communities	communities			communities	teemoregy	teemology	technology				
						(C) transfer	(C) transfer	(C) transfer				
						current	current	current				
						knowledge to	knowledge to	knowledge to				
						the learning of	the learning of	the learning of				
						newly	newly	newly				
						encountered	encountered	encountered				
						technologies.	technologies.	technologies.				

			Strand:		agement, and Repre	esentation			
		T		,	Collect Data	T			
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale
	gement, and represent		Data literacy, mana	gement, and represen	tationcollect data.	Data literacy, mana			
The student defines	data and explains how	w it can be found	The student uses dig	gital strategies to coll	ect and identify	The student uses ad			
and collected. The s	tudent is expected to:		data. The student is	expected to:		represent data. The	student is expected t	0:	
NEW (A) identify	NEW (A) explore	NEW (A) identify	NEW (A) <i>identify</i>	NEW (A) classify	NEW (A) identify	NEW (A)	NEW (A)	NEW (A)	The work group felt
that data is	and collect many	and collect and	and collect and	numerical and	and collect	demonstrate how	demonstrate how	compare and	it was important to
information	types of data, such	identify non-	identify numerical	non-numerical	quantitative and	data can be	data can be	contrast data	specify the data
collected about	as preferences or	numerical data,	data such as the	data	qualitative data	represented in a	represented in a	types including	types that a student
people, events, or	daily routines of	such as weather	price of goods or		with digital tools	binary system and	binary number	binary, integers,	should know by the
objects, such as	people, events, or	patterns, preferred	temperature.			Boolean	systems	real numbers, and	end of Grade 8.
computer searches	objects	reading genres,	•			expression		Boolean data, and	
and weather	j	and holidays				1	compare and	text-based	
patterns							contrast binary	representations	
1							and Boolean data	-	
								explain how	
								devices	
								manipulate and	
								transfer data types	
								and files from	
								collected data,	
								such as integers,	
								real numbers,	
								Boolean and text	
								in a binary system	

	Strand: Data Literacy, Management, and Representation												
				Substrand:	Collect Data								
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale				
NEW (B)	NEW (B) conduct	NEW (B) conduct	NEW (B) use	NEW (B) use	New (B) identify	NEW (B) discuss	NEW (B) evaluate	NEW (B) apply	Grade 1: the work				
communicate the	a basic search	a basic search	various search	various search	keyword(s),	and use advanced	advanced search	appropriate search	group wanted to				
idea with guidance	with assistance	independently	strategies with	strategies with	Boolean	search strategies,	strategies,	strategies,	delete				
that digital devices	independently or	using provided	guidance	two or more	operators, and	including	including	including	"independently" and				
can search for and	collaboratively	keywords and		keywords within	<u>limiters within</u>	keyword(s),	keyword(s),	keyword(s),	changed the				
retrieve	using provided	digital sources		specific	provided search	Boolean	Boolean	Boolean	wording				
information	keywords and			parameters	strategies	operators, and	operators, and	operators, and					
	digital sources					limiters	limiters	limiters to achieve	Grade 5: rewritten				
					select various			a specified	to create a better				
					search strategies			outcome that	transition between				
				· ·	within specific			includes a variety	grades 4 and 6				
					parameters			of file formats					

			Strand:	Data Literacy, Man	agement, and Repr	esentation			
			Sub	strand: Organize, M	Ianage, and Analyze	e Data			
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale
				gement, and represer			, Management, and F		
				ze data. The student u	ses data to answer		and analyze data. The		
			questions. The stud	ent is expected to:			logy to transform dat		
						and predictions. Th	e student is expected	to:	
							T	1	
			NEW (A) analyze	NEW (A) use	NEW (A) use	NEW (A) use	NEW (A) use	NEW (A) use	Work group felt that
			data through	digital tools	digital tools	digital tools	digital tools	digital tools	"digital tools" was
			graphs to identify	technology to	technology to	technology to	technology to	technology to	more specific
			and discuss trends	analyze,	analyze and	transform data in	transform data to	transform data,	language; took out
			and inferences	transform, and	transform data to	order to select the	select the	analyze trends,	the graphic language
				make inferences	select and create	appropriate graph,	appropriate graph,	and predict	because that would
				about the data to	the appropriate	identify and	analyze trends,	possibilities	be covered
				answer a question	graph, such as a	discuss trends,	and make	developing steps	sufficiently in the
					dot plot, scatter	and make	inferences and	for the creation of	publishing substrand
					plot, and bar	inferences	predictions	an innovative	as well as practical
					graph, and make			process or product	technology concepts
					inferences to				
					answer a question				

Strand: Data Literacy, Management, and Representation												
			Su	bstrand: Communi	cate and Publish Re	sults						
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale			
		Data literacy,	Data literacy, mana	gement, and represer	ntation	Data literacy, mana	gement, and represer	ntation	Added "inform" as			
		management, and	communicate and p	ublish results. The st	udent		ublish results. The st		it was in all three			
		representation	communicates data	through the use of di	gital tools to inform	products to commu	nicate data to an audi	ence for an	grade level SEs			
		communicate and	an audience. The st	udent is expected to:		intended purpose. T	The student is expected	ed to:				
		publish results.										
		The student										
		communicates										
		data through the										
		use of digital										
		tools. The student										
		is expected to:						1				
		NEW (A) use a	NEW (A)	NEW (A)	NEW (A) use	NEW (A) use	NEW (A) use	NEW (A) use	Work group felt that			
		digital tool to	use digital tools to	use <u>digital tools</u>	digital tools	digital tools	digital tools	digital tools	"digital tools" was			
		individually or	communicate and	technology to	technology to	technology to	technology to	technology to	more specific			
		collaboratively	publish results to	communicate	communicate and	communicate and	communicate and	communicate and	language; Grade 3			
		create and	inform an	results of an	display data using	display the data of	display the data of	publish the data of	and 4, redirect focus			
		communicate data	intended audience	inquiry and	the appropriate	a product or	a product or	a product or	of SE to the			
		visualizations,		display data, to	visualization to	process to inform	process to inform	process to	communication of			
		such as	use digital tools	answer a question	inform an	an intended	or persuade an	persuade an	results			
		pictographs and	technology to	to inform an	intended audience	audience	intended audience	intended audience				
		bar graphs	communicate and	intended audience								
			display data									
			trends and									
			inferences to									
			inform an									
			intended audience									

	Strand: Digital Citizenship										
				Substrand: So	cial Interactions						
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale		
	-social interactions. T				Γhe student understan		digital communication	on and that a			
	communicate in vari		student's actions on	line can have a long-	term impact. The stud	dent is expected to:					
	student is expected to			_			_				
NEW (A) identify	NEW (A) describe	NEW (A)							New Grade 2 (A)		
and demonstrate	and demonstrate	participate in							for better vertical		
responsible	respectful	<u>digital</u>							alignment;		
behavior within a	behavior within a	environments to							appropriate digital		
digital	digital	develop							etiquette also		
environment	environment	responsible and							includes respecting		
		respectful							different cultures		
		interactions									
		(A) participate in									
		digital									
		environments to									
		develop cultural									
		understanding by									
		interacting with									
		learners of									
		multiple cultures									
			NEW (A) define	NEW (A)	NEW (A) identify	NEW (A) identify	NEW (A) classify	NEW (A) analyze			
			digital footprint	describe how	the components of	the impact of a	actions as having	the importance of			
				created	a digital footprint	digital footprint	a positive or	managing a			
				information	such as online		negative effect on	digital footprint			
				retaineds online	activity using		a digital footprint	and how it can			
				<u>creates</u> a	gaming or social			affect the future			
				permanent digital	media platforms						
				footprint							

	Strand: Digital Citizenship											
	T = .	T = -	T = -		cial Interactions	T =	T = -	T =	T =			
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale			
			NEW (B) define	NEW (B)	NEW (B)	NEW (B) create	NEW (B)	NEW (B) create	Work group moved			
			digital etiquette	describe	describe	formal and	create and revise	and publish a	grade 7 down to			
				appropriate digital	appropriate digital	<u>informal digital</u>	formal and	formal digital	grade 6 and rewrote			
				etiquette for	etiquette for	<u>communications</u>	<u>informal</u>	communication	grade 7 to include a			
				various forms of	addressing	using appropriate	communications	using appropriate	revision process.			
				digital	different	<u>digital etiquette</u>	using a feedback	digital etiquette				
				communication	audiences such as	NEW (D)	process and	for a global				
				such as text,	peers, teachers,	NEW (B)	appropriate digital	audience				
				email, online chat,	and other adults	differentiate	<u>etiquette</u>					
				and other		between formal						
				platforms		and informal	create a formal					
						digital	and informal					
						communications	digital					
						that contain	communication					
						proper digital	using appropriate digital etiquette					
			NEW (C): define	NEW (C):	NEW (C):	etiquette NEW (C):	NEW (C):	NEW (C):	Pulled from			
				demonstrate		collaborate on	collaborate on	collaborate and	communication and			
			digital collaboration		<u>demonstrate</u>	digital platforms	digital platforms	publish for a	collaboration strand.			
			<u>conaboration</u>	appropriate digital etiquette	<u>appropriate</u> digital etiquette	such as recording	such as recording	global audience	conacciation straing.			
				for various forms	for collaborating	a video	a video	on digital				
				of digital	with different	conference	conference	platforms such as				
				collaboration	<u>audiences such as</u>	presentation using	presentation using	recording and				
				such as shared	peers, teachers,	appropriate	appropriate	editing videos				
				documents, video	and other adults	formal and	formal and	using appropriate				
				conferencing, and	and other dualis	informal digital	informal digital	formal and				
				other platforms		<u>etiquette</u>	<u>etiquette</u>	informal digital				
				omer punjorms		cuquene	cuqueuc	etiquette				

	Substrand: Ethics and Laws												
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale				
Digital citizenship													
expected to:	Digital citizenshipethics and laws. The student recognizes and practices responsible, legal, and ethical behavior while using digital tools and resources. The student is expected to:												
NEW (A)	NEW (A)	NEW (A)	NEW (A)	NEW (A)	NEW (A)	NEW (A)	NEW (A)	NEW (A)	adding "local" to clarify and limit				
demonstrate	explain and	explain and	demonstrate	demonstrate	demonstrate	demonstrate	demonstrate	demonstrate	scope				
acceptable use of	demonstrate	demonstrate	adherence to	adherence to	adherence to	adherence to	adherence to	adherence to					
digital resources	the importance	the importance	<u>local</u> Acceptable	<u>local</u> Acceptable	<u>local</u> Acceptable	local	<u>local</u> Acceptable	<u>local</u> Acceptable					
and devices as	of acceptable	of acceptable	Use Policy	Use Policy	Use Policy	Acceptable Use	Use Policy	Use Policy					
outlined in <u>local</u>	use of digital	use of digital	(AUP) that	(AUP) and	(AUP) and	Policy (AUP)	(AUP) and	(AUP) and					
district policies	resources and	resources and	reflectsing	explain the	explain the	and practice	practice and	practice and					
or Acceptable	devices as	devices as	positive social	importance of	importance of	safe, ethical,	model safe,	advocate for safe,					
Use Policy	outlined in	outlined in	behavior in the	responsible and	responsible and	and positive	ethical, and	ethical, and					
(AUP)	<u>local</u> district	<u>local</u> district	digital	ethical	ethical	online	positive online	positive online					
	policies or	policies or	environment;	technology use	technology use	behaviors;	behaviors;	behaviors;					
	Acceptable	Acceptable											
	Use Policy	Use Policy											
	(AUP)	(AUP)											

		Strand: Digital Citizenship											
				Sub	strand: Ethics and	Laws							
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale				
NEW (B)	NEW (B)	NEW (B)	NEW (B)	NEW (B)	NEW (B)	NEW (B)	NEW (B)	NEW (B)	Grade 6: added discuss to this				
communicate an	communicate	communicate	communicate the	describe the	describe the	discuss and	explain the	apply appropriate	grade level to clarify				
understanding	an	an	purpose of	rights and	purpose of	define	importance of	intellectual					
that all digital	understanding	understanding	copyright law	responsibilities	copyright law	intellectual	intellectual	property law	Grade 8: Clarifying the student				
content has	that all digital	that all digital	and identify	of a creator,	and the possible	property and	property laws,	when creating	expectation by placing focus on				
owners.	content has	content has	appropriate and	define copyright	consequences for	associated	including the	digital products	intellectual property law.				
	owners and	owners and	<u>inappropriate use</u>	<u>law</u> , and explain	inappropriate use	terms,	benefits of						
	explain the	explain the	of digital content	how it applies to	of digital content	including	protection for	create a digital					
	importance of	importance of	and information	creative work		copyright <u>law</u> ,	content owners	product that					
	respecting	respecting				permission, fair	and the	demonstrates an					
	others'	others'	demonstrate an			use, creative	consequences of	understanding of					
	belongings as	belongings as	understanding of			commons, open	violating these	intellectual					
	they apply to	they apply to	copyright law			source, and	laws	property law					
	digital content	digital content	associated with			public domain							
	and	and	digital content										
	information	information											
			NEW (C)	NEW (C) create	NEW (C) create	NEW (C)	NEW (C) create	NEW (C) create	Wanted to focus on citations on				
			identify the	a citation for	a citation for	create citations	citations and cite	citations and cite	digital forms of media. The ELA				
			required	digital forms of	digital forms of	and cite sources	sources for a	sources for a	TEKS focus on text formatting, so				
			elements of a	media with	media with	for a variety of	variety of digital	variety of digital	the tech applications work group				
			citation for	assistance	assistance	digital forms of	forms of	forms of	wanted to reinforce that digital				
			digital forms of			intellectual	intellectual	intellectual	forms of media should be cited.				
			media			property	property	property					
									TEKS guide: define intellectual				
									property				

	Strand: Digital Citizenship													
	Substrand: Ethics and Laws													
Kindergarten														
						New (D) (C)	New (D) (C)	New (D) (C)						
						describe how	evaluate how	evaluate the bias						
						information can	various types of	of digital						
						be exaggerated	media, including	information						
						or	social media,	sources,						
						misrepresented	and technology	including						
						online	can be used to	websites						
							exaggerate and							
							misrepresent							
							information							

	Digital Citizenship												
				Privacy, Safet	ty, and Security								
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale				
Digital citizenship	-privacy, safety, and s	security. The student p	oractices safe, legal, a	nd ethical digital beh	aviors to become a se	ocially responsible di	gital citizen. The	student is expect	ted to:				
NEW (A) identify	NEW (A) identify	NEW (A)	NEW (A)	NEW (A)	NEW (A) discuss	NEW (A) identify	NEW (A)	NEW (A)	K-1 students don't have the				
ways to keep a	ways to keep a	demonstrate	demonstrate	demonstrate	cybersecurity	real-world	describe and	analyze real-	ability to use and create their				
user account safe,	user account safe,	account safety,	account safety,	account safety,	strategies to	cybersecurity	model ways to	world	own passwords, so the				
including <u>not</u>	including <u>not</u>	including creating	including creating	including creating	protect and ways	problems such as	protect oneself	scenarios to	including phrase was				
sharing log in	sharing log in	a strong password	a strong password	a strong password	digital	phishing,	themselves	identify	changed to not sharing log in				
information using	information using	and logging off of	and logging off of	and logging off	information can	malware,	from real-	cybersecurity	information. Additionally,				
a strong password	a strong password	accounts and	accounts and	devices, and	be protected <u>such</u>	password attacks,	world	threats and	creating a password is				
and logging off of	and logging off of	devices	devices	explain the	as using a secured	identity theft, and	cybersecurity	propose ways	different from using a				
accounts and	accounts and			importance of	<u>internet</u>	hacking	attacks	to prevent	password.				
devices	devices			these practices	connection			harm from					
								them					
NEW (B) identify	NEW (B) identify	NEW (B) compare	NEW (B)	NEW (B) identify	NEW (B) identify				Collaboration is a more				
and discuss what	and discuss	and contrast	describe ways to	and discuss types	strategies to				effective method for K and 1				
information is safe	explain what	discuss private	employ safe	of data collection	maintain digital				students to introduce the				
to share online	information is safe	and versus public	practices such as	tools such as	privacy and				topic and it's a good scaffold				
such as hobbies	to share online	information and	protecting digital	cookies, pop-ups,	security and				to grade 2.				
and likes and	such as hobbies	discuss which is	identity and	smart devices, and	discuss how data								
dislikes and	and likes and	safe to be shared	discuss ways to	unsecured	collection								
unsafe such as	dislikes and	online and with	avoid online	networks and why	technology is								
identifying	unsafe such as	whom	dangers such as	it is important to	used to track								
information	identifying		accessing unsafe	maintain digital	online navigation								
	information		websites or	privacy									
			clicking on										
			suspicious links										

Digital Citizenship														
	Privacy, Safety, and Security													
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale					
	NEW (C) discuss	NEW (C) discuss	NEW (C) discuss	NEW (C) discuss	NEW (C) discuss	NEW (B) identify	NEW (B)	NEW (B)	Clarified language					
	and define	cyberbullying and	and explain how	and explain how	and identify how	various methods	analyze the	evaluate						
	cyberbullying	identify examples	to respond to	to respond to	interactions can	of cyberbullying	negative	scenarios or						
	with teacher		cyberbullying	cyberbullying,	escalate online	such as	impacts of	case studies						
	support and			including	and explain ways	harassment,	cyberbullying	to identify						
	guidance			advocating for	to stand up to	impersonation,	on the victim	warning						
				self and others	cyberbullying,	and cyberstalking	and the bully	signs of a						
					including			cyberbullying						
					advocating for			victim such						
					self and others			as withdrawal						
								or lack of						
								sleep and						
								predict the						
								outcomes for						
								both the						
								victim and						
								the bully						

Strand: Practical Technology Concepts Substrand: Processes											
	T		Grade 3	Substrand Grade 4	d: Processes Grade 5	T =	Grade 7	Grade 8	T =		
Kindergarten	Grade 1	Grade 2	Practical technology concepts—processes. The student engages with technology systems, concepts, and operations. The student is expected to: NEW (A) NEW (A) NEW (A) identify			Grade 6 Practical technolog evaluates and select an independent prophardware and software strategies.	Rationale				
			NEW (A) compare and contrast applications for relevance to the assigned task such as word processor process, spreadsheet, presentation tools	NEW (A) evaluate and choose applications for relevance to the assigned task	NEW (A) identify file types for text, graphics, and multimedia files;	NEW (A) create and design files in various formats such as text, graphics, video, and audio files;	NEW (A) choose a variety of digital tools to create, share, and communicate digital artifacts	NEW (A) combine various file formats for a specific project or audience.			

				Strand: Practical T	Sechnology Concepts	S							
	Substrand: Processes												
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale				
			NEW (B) perform	NEW (B) perform	NEW (B) perform			NEW (B) share					
			software	software	software			and seek feedback					
			applications	applications	applications			files in various					
			functions such as	functions such as	functions			formats, including					
			inserting or	outline options,	including			text, raster and					
			deleting text,	bulleting, and	inserting or			vector graphics,					
			inserting images,	numbering lists,	deleting text and			video, and audio					
			and formatting	and editing	images, and			files;					
			page layout and	functions such as	formatting tools								
			margins.	finding and	or options.								
				replacing.									

			\$	Strand: Practical Te	echnology Concept	ts			
				Substrand: Sk	ills and Tools				
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale
Practical technology	concepts—skills and	tools. The student	Practical technology	concepts—skills and	d tools. The	Practical technology	concepts—skills and	tools. The student	
demonstrates knowle	edge and appropriate t	use of technology	student selects appro	priate methods or te	chniques for an	leverages technolog	y systems, concepts, a	and operations to	
systems, concepts, a	nd operations. The stu	ident is expected to:	assigned task and id-			produce digital artifa	produce digital artifacts. The student is expected to:		
			and software problem		oubleshooting				
			strategies. The stude	tegies. The student is expected to:					
NEW (A) use a	NEW (A) select	NEW (A) select							Clarified language
variety of	choose and use a	and use a variety							
applications,	variety of	of applications,							
devices, and online	applications,	devices, and online							
learning	devices, and online	learning							
experiences or	learning	environments to							
environments to	experiences or	create and share							
engage with	environments to	content							
content	create an original								
	product								

	Strand: Practical Technology Concepts										
					Substrand: Skills ar	nd Tools					
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale		
NEW (B)	NEW (B)	NEW (B)	NEW (A)	NEW (A)	NEW (A)	NEW (A) apply	NEW (A)	NEW (A)	Wanted to better vertically align from		
identify basic	describe basic	identify,	demonstrate an	demonstrate an	describe and	appropriate	demonstrate	integrate use	grade 1 to grade 3. Added "variety of input		
computer	computer	compare,	understanding of	understanding of	evaluate operating	technology	proficiency in the	of appropriate	and output devices" to ensure students are		
hardware,	hardware,	and describe	the terminology	the terminology	systems, network	terminology such	use of technology	technology	aware of devices that can and cannot be		
including a	including a	the function	related to operating	related to virtual	systems such as	as <u>cloud</u>	terminology in	terminology in	seen.		
variety of input	variety of input	demonstrate	systems, network	systems such as	internet, intranet,	applications,	projects through	scholarly			
and output	and output	the purpose	systems such as	video	wifi, and short-	input, output, and	team	inquiry and			
devices, and	devices, and	of basic	internet, intranet,	conferencing,	range wireless	basic	collaboration and	dialogue such			
software using	software using	computer	wifi, and short-	augmented	technology,	programming ,	communication	as classroom			
accurate	accurate	hardware,	range wireless	reality, and	learning	and cloud		discussion and			
terminology	terminology	including a	technology, and	virtual reality	management	concepts .		written			
		variety of	learning	environments	systems, and			samples			
		input and	management		virtual systems						
		<u>output</u>	systems		and their						
		devices, and			applications, and						
		software			<u>network systems</u>						
		<u>applications</u>			such as internet,						
		using			intranet, wifi, and						
		accurate			short-range						
		terminology			<u>wireless</u>						
					<u>technology</u>						

	Strand: Practical Technology Concepts										
					Substrand: Skills an						
Kindergarten C	Frade 1		rade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale		
NEW (C) operate	NEW (C)	NEW (C)	NEW (B)	NEW (B)	NEW (B) organize	NEW (B) NEW	NEW (B) NEW	NEW (B)	Moved from E for VA		
a variety of	operate a	operate a	identify where	evaluate where	files using	(E) identify	(E) demonstrate	NEW (E)			
developmentally	variety of	variety of	and how to save	and how to save	appropriate	effective file	with assistance	<u>implement</u>			
appropriate digital	developmentall	developmentall	files such as	including the	naming	<u>management</u>	<u>effective file</u>	<u>independently</u>			
tools and resources	y appropriate	y appropriate	using	use of	conventions	strategies such as	<u>management</u>	<u>effective file</u>			
to perform	digital tools	digital tools	appropriate	appropriate	including folder	file naming	strategies such as	<u>management</u>			
software	and resources	and resources	naming	naming	structures	conventions,	<u>file naming</u>	<u>strategies</u>			
application	to perform	to perform	conventions and	conventions,		local and remote	conventions,	<u>including file</u>			
functions such as	software	software	file management	file		<u>locations,</u>	local and remote	<u>naming</u>			
opening an	application	application		management,		<u>backup,</u>	<u>locations,</u>	conventions,			
application and	functions such	functions such		and folder		<u>hierarchy, folder</u>	<u>backup,</u>	<u>local and</u>			
modifying,	as file	as reviewing		structures		structure, file	<u>hierarchy, folder</u>	<u>remote</u>			
printing, and	management,	digital				conversion, tags,	structure, file	<u>locations,</u>			
saving digital	collaboration,	artifacts, and				and emerging	conversion, tags,	<u>backup,</u>			
artifacts	and the	creating				<u>digital</u>	and emerging	<u>hierarchy,</u>			
	creation and	designing				<u>organizational</u>	<u>digital</u>	<u>folder</u>			
	revision of	solutions to				strategies;	<u>organizational</u>	<u>structure, file</u>			
	digital artifacts	problems					<u>strategies;</u>	conversion,			
						NEW (B)		tags, and			
						identify where		<u>emerging</u>			
						and how to save	NEW (B)	<u>digital</u>			
						files such as	evaluate where	<u>organizational</u>			
						using appropriate	and how to save	<u>strategies</u>			
						naming	including the use				
						conventions and	of appropriate	NEW (B)			
						file management	naming	organize files			
							conventions, file	using			
							management, and	appropriate			
							folder structures	naming			
								conventions			
								including			
								folder			
								structures			

	Strand: Practical Technology Concepts Substrand: Skills and Tools										
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale		
						NEW (C) select and use the appropriate platform and tools to complete a specific task or project	NEW (C) select and use the appropriate platform and tools, including selecting and using software or hardware for a defined task;	NEW (C) select and use the appropriate platform and tools, including selecting and using software or hardware to transfer data for a self-identified task;	Added clarifying wording		

				Strand: Practical To	echnology Concept	ts			
				Substrand: Sk					
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale
NEW (D) practice	NEW (D) practice	NEW (D) practice	NEW (C)	NEW (C)	NEW (C)	NEW (D) NEW	NEW (D) NEW	NEW (D) NEW	Added for vertical
ergonomically	ergonomically	ergonomically	demonstrate	demonstrate	demonstrate	(G) demonstrate	(G) demonstrate	(G) demonstrate	alignment; in
correct	correct	correct	proper touch	proper touch	proper touch	<u>improvement in</u>	<u>improvement in</u>	<u>improvement in</u>	theory students
keyboarding	keyboarding	keyboarding	keyboarding	keyboarding	keyboarding	speed and	speed and	speed and	should be
techniques and	techniques and	techniques and	techniques with	techniques with	techniques with	accuracy as	accuracy as	accuracy as	improving as they
developmentally	developmentally	developmentally	accuracy and	speed and	increasing speed	measured by	measured by	measured by	progress grade
appropriate hand	appropriate hand	appropriate hand	ergonomic	accuracy and	and accuracy	words per minute	words per minute	words per minute	levels. Moved
and body positions	and body positions	and body positions	strategies such as	ergonomic	and ergonomic	when applying	when applying	when applying	from (G) because
			correct hand and	strategies such as	strategies such	<u>correct</u>	<u>correct</u>	<u>correct</u>	these student
			body positions	correct hand and	as correct hand	<u>keyboarding</u>	<u>keyboarding</u>	<u>keyboarding</u>	expectations are
				body positions	and body	<u>techniques</u>	<u>techniques</u>	<u>techniques</u>	vertically aligned.
NEW (E) : 1 .: C	MENT (E) : 1 .: C	NEW (E) '1 ''C	MEM (D) : 1:C	NEW (D)	positions	MENT (E) 1	NEW (E) 1	NEW (E) 1	TZ' 1 1 1
NEW (E) identify,	NEW (E) identify,	NEW (E) identify,	NEW (D) identify	NEW (D)	NEW (D)	NEW (E) select	NEW (E) select	NEW (E) select	Kindergarten and
locate, and	locate, and	locate, and	and practice using	identify and	demonstrate	and use	and use	and use	Grade 1: some
practice using keys	practice using keys	practice using keys	additional	practice using	keyboard or	<u>appropriate</u>	<u>appropriate</u>	<u>appropriate</u>	concern that not all
on the keyboard.	on the keyboard.	on the keyboard.	keyboard or other	<u>cross-curricular</u>	other input	shortcuts within	shortcuts within	shortcuts within	devices have a
including letters,	including <u>upper-</u>	including	input device	symbols on a	device shortcuts	applications	applications	<u>applications</u>	"delete" key.
numbers, and	and lower-case	secondary actions	shortcuts for	keyboard and additional	with fluency for				Grades 4 and 5:
special keys such	letters, numbers,	of different keys	actions such as		various digital				concern about
as space bar, shift,	and special keys	such as @, #, \$, and ? special	copy. / paste, undo, or closing	keyboard or other	tools				students having access to "various
and <u>backspace</u>	such as space bar, shift, and	function keys,	windows	input device shortcuts for					digital tools."
delete	backspace delete	punctuation, and	windows	various digital					Grades 6–8: The
	backspace defete	escape, and basic		tools					work group
		keyboard shortcuts		10015					wanted to add new
		Reyboard Shortcuts							student
									expectations for
									middle school.
									Now that students
									know how to use
									shortcuts, they can
									select relevant
									shortcuts for the
									appropriate
									application.

				Strand: Practical To	echnology Concept	S			
				Substrand: Sk	cills and Tools				
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale
			NEW (E) <i>identify</i>	NEW (E)	NEW (E)	NEW (F)	NEW (F)	NEW (F)	Moved Grade 5
			minor technical	use	use help sources	use help sources to	NEW (D) research	NEW (D) apply	and 6 SEs to Grade
			problems with	troubleshooting	to research	<u>research</u>	and test determine	appropriate	3 and 4 to
			hardware and	strategies to solve	<u>application</u>	application	potential solutions	common	introduce grade-
			<u>software</u> <u>and solve</u>	troubleshoot	features and	features and solve	to solve hardware	troubleshooting	appropriate
			the issue with	minor technical	solve software	software issues	and software	techniques	troubleshooting
			<u>assistance</u> using	problems with	issues		problems using	independently and	earlier; clarified
			available	hardware and		NEW (D)	common	seek seeking	appropriate use of
			resources such as	software such as	identify minor	troubleshoot	troubleshooting	technical	the help feature
			the help feature	restarting	technical	minor technical	strategies such as	assistance as	(Massachusetts)
				software or	problems with	problems with	restarting digital	needed	Moved the
			identify and locate	rebooting	hardware and	hardware and	tools or		introduction of
			the help feature in	hardware using	software using	software using	transferring work		help sources to
			applications	available	available	available	from one device to		Grades 5 and 6.
				resources such as	resources such	resources such as	another		Increased rigor at
				the help feature	as the help	the help feature			Grades 7 and 8.
					feature				
				use the help					
				feature in					
				<i>applications</i>					

				Strand: Practical T	echnology Concept	ts			
					kills and Tools				
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale
						NEW (E) identify	NEW (E)	NEW (E)	
						effective file	demonstrate with	implement	
						management	assistance	independently	
						strategies such as	effective file	effective file	
						file naming	management	management	
						conventions, local	strategies such as	strategies	
						and remote	file naming	including file	
						locations, backup,	conventions, local	naming	
						hierarchy, folder	and remote	conventions, local	
						structure, file	locations, backup,	and remote	
						conversion, tags,	hierarchy, folder	locations, backup,	
						and emerging	structure, file	hierarchy, folder	
						digital	conversion, tags,	structure, file	
						organizational	and emerging	conversion, tags,	
						strategies;	digital	and emerging	
							organizational	digital	
							strategies;	organizational	
								strategies	
						NEW (G)	NEW (G)	NEW (G)	Clarified the SEs
						NEW (F) identify	NEW (F) use with	NEW (F) compare	by providing more
						types of a variety	assistance a	types of use	precise language
						of local and	variety of types of	independently a	on the use of file
						remote data	local and remote	variety of local	storage versus
						storage input	data storage input	and remote data	input sources.
						sources such as	sources such as	storage input	1
						cloud architecture	cloud architecture	sources such as	
						or local server	or local server to	cloud architecture	
							store or share	or local server and	
							collect and	select the	
							exchange data;	appropriate type to	
								store and share	
								collect and	
								exchange data;	

				Strand: Practical T	echnology Concept	ts			
				Substrand: Sl	cills and Tools				
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale
						NEW (G)	NEW (G)	NEW (G)	
						demonstrate	demonstrate	demonstrate	
						improvement in	improvement in	improvement in	
						speed and	speed and	speed and	
						accuracy as	accuracy as	accuracy as	
						measured by	measured by	measured by	
						words per minute	words per minute	words per minute	
						when applying	when applying	when applying	
						correct	correct	correct	
						<i>keyboarding</i>	<i>keyboarding</i>	<i>keyboarding</i>	
						techniques .	techniques	techniques	
						NEW (H) use	NEW (H) use and	NEW (H) use and	Revised to
						productivity tools	select productivity	select productivity	differentiate across
						found in spread	tools found in	tools found in	Grades 6-8
						sheet, word	spread sheet, word	spread sheet, word	
						processing, and	processing, and	processing, and	
						publication	publication	publication	
						applications to	applications to	applications to	
						create digital	create digital	create digital	
						artifacts such as	artifacts such as	artifacts, including	
						reports, graphs,	reports, graphs,	such as reports,	
						and charts	and charts with	graphs, and charts,	
							increasing	with increasing	
							complexity	complexity	

			}	Strand: Practical T		ts						
	Substrand: Skills and Tools											
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Rationale			
						NEW (I) use	NEW (I) use	NEW (I) use	Concern that the			
						multiple	collaboratively	multiple	thread in this			
						technology tools	multiple	technology tools to	strand is also			
						with support to	technology tools	design, and create,	repeated in the			
						design and create	with support to	revise or	creativity and			
						digital projects	design and create,	responsibly remix,	innovation strand.			
						such as digital	revise, or	and publish digital				
						portfolios,	responsibly remix	projects such as				
						multimedia, a	digital projects	digital portfolios,				
						blog, or a webpage	such as digital	multimedia, a				
							portfolios,	blog, or a webpage				
							multimedia, a					
							blog, or a webpage					