Texas Education Agency

Technology Applications Side-by-Side, Grades 6-8

Comparing the Revised 2022 Texas Essential Knowledge and Skills (TEKS) with the 2012 TEKS

About This Document

The following document was created to demonstrate a side-by-side comparison of the 2012 technology applications TEKS and the 2022 technology applications TEKS.

This document's construction was based on notes and comments of the TEKS review work groups who made recommendations for revisions to the 2022 technology applications TEKS. While some TEKS are aligned between the 2012 and 2022 standards, many of the standards found in the 2022 TEKS are new and do not have a 2012 equivalent.

Standards that are adjacent to a gray box indicate that there is no 2012 or 2022 equivalent.

When reading the standards in the document, the nomenclature of the citations is written as the following:

Example: 6.1.A

- 6 – Grade level
- 1 – Knowledge and skills statement
- A – Student expectation

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Grade 6 Technology Applications Side-by-Side Comparison

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
		6.1	Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:	The new standards are now aligned with the core concepts of computational thinking as required by Texas Education Code (TEC) §28.002(c-3).
		6.1.A	decompose real-world problems into structured parts by using visual representation;	
		6.1.B	analyze the patterns and sequences found in visual representations such as learning maps, concept maps, or other representations of data;	
		6.1.C	define abstraction and distinguish between generalized information and specific information in the context of solving a problem or completing a task;	
		6.1.D	design a plan collaboratively using visual representation to document a problem, possible solutions, and an expected timeline for the development of a coded solution;	
		6.1.E	analyze different techniques used in debugging and apply them to an algorithm; and	
		6.1.F	analyze the benefits of using iteration (code and sequence repetition) in algorithms.	
6.1.B	create original works as a means of personal or group expression;			Creating works has been incorporated into all of the revised strands.
6.1.C	explore complex systems or issues using models, simulations, and new technologies to make predictions, modify input, and review results; and			This concept was incorporated into the emerging technologies substrand of creativity and innovation.
		6.2	Computational thinking--applications. The student applies the fundamentals of computer science. The student is expected to:	The new standards are now aligned with the core concepts of computational thinking as required by Texas Education Code (TEC) §28.002(c-3).
		6.2.A	define and label variables that relate to their programming or algorithm; and	
		6.2.B	use a design process to create block-based and text-based programs that include sequences, loops, conditionals, and events to solve an everyday problem.	

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
6.2	Communication and collaboration. The student collaborates and communicates both locally and globally to reinforce and promote learning. The student is expected to:			Students should communicate and collaborate in all areas of technology applications.
6.2.A	participate in personal learning networks to collaborate with peers, experts, or others using digital tools such as blogs, wikis, audio/video communication, or other emerging technologies;			This information is now located in Digital Citizenship.
6.2.B	communicate effectively with multiple audiences using a variety of media and formats; and			This content has been moved to the Data literacy, management, and representation--communicate and publish results strand.
6.2.C	read and discuss examples of technical writing.			
6.1	Creativity and innovation. The student uses creative thinking and innovative processes to construct knowledge, generate new ideas, and create products. The student is expected to:	**6.3**	Creativity and innovation--innovative design process. The student takes an active role in learning by using a design process and creative thinking to develop and evaluate solutions, considering a variety of local and global perspectives. The student is expected to:	The revised knowledge and skills statement now focuses on the use of a design process to guide student learning as well as the consideration of a variety of local and global perspectives.
		6.3.A	resolve challenges in design processes independently using goal setting and personal character traits such as demonstrating courage and confidence;	
		6.3.B	discuss and implement a design process using digital tools to compare, contrast, and evaluate student-generated outcomes; and	
		6.3.C	identify how the design process is used in various industries.	
6.3	Research and information fluency. The student acquires, analyzes, and manages content from digital resources. The student is expected to:			
6.3.A	create a research plan to guide inquiry;			
		6.4	Creativity and innovation--emerging technologies. The student demonstrates a thorough understanding of the role of technology throughout history and its impact on societies. The student is expected to:	
6.6.H	discuss how changes in technology throughout history have impacted various areas of study;	**6.4.A**	discuss how changes in technology throughout history have impacted various areas of study;	
		6.4.B	discuss how global trends impact the development of technology; and	

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
6.4.F	transfer current knowledge to the learning of newly encountered technologies.	**6.4.C**	transfer current knowledge to the learning of newly encountered technologies.	
6.4	Critical thinking, problem solving, and decision making. The student makes informed decisions by applying critical-thinking and problem-solving skills. The student is expected to:			
6.4.A	identify and define relevant problems and significant questions for investigation;			This concept was incorporated into the data literacy, management, representation strand.
6.4.B	plan and manage activities to develop a solution, design a computer program, or complete a project;			This concept was incorporated into the computational thinking strand.
6.4.C	collect and analyze data to identify solutions and make informed decisions;			This concept was incorporated into the data literacy, management, representation strand.
6.4.D	use multiple processes and diverse perspectives to explore alternative solutions;			This concept was incorporated into the computational thinking strand.
6.4.E	make informed decisions and support reasoning; and			This concept was incorporated into all of the revised strands.
		6.5	Data literacy, management, and representation--collect data. The student uses advanced digital strategies to collect and represent data. The student is expected to:	The new knowledge and skills statement addresses data collection and search strategies.
		6.5.A	demonstrate how data can be represented in Boolean expression; and	
6.3.B	discuss and use various search strategies, including keyword(s) and Boolean operators;	**6.5.B**	discuss and use advanced search strategies, including keywords, Boolean operators, and limiters.	
6.1.D	discuss trends and possible outcomes.	**6.6**	Data literacy, management, and representation--organize, manage, and analyze data. The student uses digital tools to transform data, make inferences, and predictions. The student is expected to use digital tools to transform data in order to identify and discuss trends and make inferences.	The revised knowledge and skills statement includes the transformation of data and making predictions. This strand replaced the previous strand to focus more on the management of data.
6.6.B	select technology tools based on licensing, application, and support;			This concept was merged into the digital citizenship strand.
6.6.C	identify, understand, and use operating systems;			
6.6.I	discuss the relevance of technology as it applies to college and career readiness, life-long learning, and daily living;			This information has been incorporated into the introduction of the TEKS.
6.6.L.i	a word processing document using digital typography standards such as page layout, font formatting, paragraph formatting, and list attributes;			These concepts were incorporated into the practical technology concepts strand.

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
6.6.L.ii	a spreadsheet workbook using basic computational and graphic components such as basic formulas and functions, data types, and chart generation;			
6.6.L.iii	a database by manipulating components such as entering and searching for relevant data; and			
6.6.L.iv	a digital publication using relevant publication standards;			
6.6.M	plan and create non-linear media projects using graphic design principles; and			
6.6.N	integrate two or more technology tools to create a new digital product.			
6.3.D	process data and communicate results.	**6.7**	Data literacy, management, and representation--communicate and publish results. The student creates digital products to communicate data to an audience for an intended purpose. The student is expected to use digital tools to communicate and display data from a product or process to inform an intended audience.	The new knowledge and skills statement includes the communication and publication of data to inform audiences through the use of digital tools.
		6.8	Digital citizenship--social interactions. The student understands different styles of digital communication and that a student's actions online can have a long-term impact. The student is expected to:	These new standards include digital footprint and etiquette.
		6.8.A	identify the impact of a digital footprint;	
		6.8.B	create formal and informal digital communications using appropriate digital etiquette; and	
		6.8.C	collaborate on digital platforms such as recording a video conference presentation using appropriate formal and informal digital etiquette.	
6.5	Digital citizenship. The student practices safe, responsible, legal, and ethical behavior while using technology tools and resources. The student is expected to:	**6.9**	Digital citizenship--ethics and laws. The student recognizes and practices responsible, legal, and ethical behavior while using digital tools and resources. The student is expected to:	This knowledge and skills statement includes standards about digital ethics, proper use of digital sources, AUP, and consequences of violating intellectual property.
6.5.C	practice safe and appropriate online behavior, personal security guidelines, digital identity, digital etiquette, and acceptable use of technology; and	**6.9.A**	adhere to local acceptable use policy (AUP) and practice safe, ethical, and positive online behaviors;	

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
6.5.A	understand copyright principles, including current laws, fair use guidelines, creative commons, open source, and public domain;	**6.9.B**	discuss and define intellectual property and associated terms, including copyright law, permission, fair use, creative commons, open source, and public domain;	
6.5.B	practice ethical acquisition of information and standard methods for citing sources;	**6.9.C**	create citations and cite sources for a variety of digital forms of intellectual property; and	
6.3.C	select and evaluate various types of digital resources for accuracy and validity; and	**6.9.D**	describe how information can be exaggerated or misrepresented online.	The revised standard focuses on the evaluation of sources. Concepts of bullying were moved to other standards.
6.5.D	understand the negative impact of inappropriate technology use, including online bullying and harassment, hacking, intentional virus setting, invasion of privacy, and piracy such as software, music, video, and other media.			
6.5	Digital citizenship. The student practices safe, responsible, legal, and ethical behavior while using technology tools and resources. The student is expected to:	**6.10**	Digital citizenship--privacy, safety, and security. The student practices safe, legal, and ethical digital behaviors to become a socially responsible digital citizen. The student is expected to:	The revised standards now include concepts related to cybersecurity and introduce cyberbullying terminology, which is required by Texas Education Code (TEC) §28.002(z).
		6.10.A	identify real-world cybersecurity problems such as phishing, malware, password attacks, identity theft, and hacking; and	
		6.10.B	identify various methods of cyberbullying such as harassment, impersonation, and cyberstalking.	
		6.11	Practical technology concepts--processes. The student evaluates and selects appropriate methods or techniques for an independent project and identifies and solves common hardware and software problems using troubleshooting strategies. The student is expected to create and design files in various formats such as text, graphics, video, and audio files.	The new knowledge and skills statement includes the evaluation and selection of project methods as well as developing troubleshooting skills.
6.1.A	identify, create, and use files in various formats such as text, raster and vector graphics, video, and audio files;			
6.6	Technology operations and concepts. The student demonstrates a thorough understanding of technology concepts, systems, and operations. The student is expected to:	**6.12**	Practical technology concepts--skills and tools. The student leverages technology systems, concepts, and operations to produce digital artifacts. The student is expected to:	The revised knowledge and skills statement extends the demonstration of skills to applying skills to produce digital artifacts.

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
6.6.A	define and use current technology terminology appropriately;	**6.12.A**	apply appropriate technology terminology such as cloud applications, input, output, and basic programming;	
6.6.G	demonstrate effective file management strategies such as file naming conventions, location, backup, hierarchy, folder structure, file conversion, tags, labels, and emerging digital organizational strategies;	**6.12.B**	identify effective file management strategies such as file naming conventions, local and remote locations, backup, hierarchy, folder structure, file conversion, tags, and emerging digital organizational strategies;	The revised standard no longer requires the demonstration of file management strategies. Local and remote locations have been added.
6.6.D	understand and use software applications, including selecting and using software for a defined task;	**6.12.C**	select and use the appropriate platform and tools to complete a specific task or project;	
6.6.E	identify, understand, and use hardware systems;			
6.6.K	use keyboarding techniques and ergonomic strategies while building speed and accuracy;	**6.12.D**	demonstrate improvement in speed and accuracy as measured by words per minute when applying correct keyboarding techniques;	
		6.12.E	select and use appropriate shortcuts within applications;	
6.6.F	understand troubleshooting techniques such as restarting systems, checking power issues, resolving software compatibility, verifying network connectivity, connecting to remote resources, and modifying display properties;	**6.12.F**	use help sources to research application features and solve software issues;	This revised standard focuses on applying appropriate troubleshooting techniques and is generalized to accommodate emerging technologies and terminology.
6.6.J	use a variety of local and remote input sources;	**6.12.G**	identify types of local and remote data storage such as cloud architecture or local server; and	The revised standard focuses on storage versus input sources.
6.6.L	create and edit files with productivity tools, including:	**6.12.H**	use productivity tools found in spread sheet, word processing, and publication applications to create digital artifacts such as reports, graphs, and charts.	The revised standard specifically lists word processing, spread sheets, and publication applications as productivity tools.

Grade 7 Technology Applications Side-by-Side Comparison

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
		7.1	Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:	The new standards are now aligned with the core concepts of computational thinking as required by Texas Education Code (TEC) §28.002(c-3).
		7.1.A	decompose real-world problems into structured parts using flowcharts;	
		7.1.B	analyze the patterns and sequences found in flowcharts;	
		7.1.C	identify abstraction and analyze how an algorithm the student created can be generalized to solve additional problems;	
		7.1.D	design a plan collaboratively using flowcharts to document a problem, possible solutions, and an expected timeline for the development of a coded solution;	
		7.1.E	analyze different techniques used in debugging and apply them to an algorithm; and	
		7.1.F	analyze the benefits of using iteration (code and sequence repetition) in algorithms.	
7.1.B	create and present original works as a means of personal or group expression;			Creating works has been incorporated into all of the revised strands.
7.1.C	explore complex systems or issues using models, simulations, and new technologies to make predictions, modify input, and review results; and			This concept was incorporated into the emerging technologies substrand of creativity and innovation.
		7.2	Computational thinking--applications. The student applies the fundamentals of computer science. The student is expected to:	The new standards are now aligned with the core concepts of computational thinking as required by Texas Education Code (TEC) §28.002(c-3)
		7.2.A	manipulate and rename variables and describe different data types; and	
		7.2.B	use a software design process to create text-based programs with nested loops that address different subproblems within a real-world context.	
		7.2.C	modify and implement previously written code to develop improved programs.	

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
7.2	Communication and collaboration. The student collaborates and communicates both locally and globally to reinforce and promote learning. The student is expected to:			Students should communicate and collaborate in all areas of technology applications.
7.2.A	create personal learning networks to collaborate and publish with peers, experts, or others using digital tools such as blogs, wikis, audio/video communication, or other emerging technologies;			These concepts have been moved to the digital citizenship strand.
7.2.B	communicate effectively with multiple audiences using a variety of media and formats; and			This content has been moved to the Data literacy, management, and representation--communicate and publish results strand.
7.2.C	create products using technical writing strategies.			Creating works has been incorporated into all of the revised strands.
7.1	Creativity and innovation. The student uses creative thinking and innovative processes to construct knowledge, generate new ideas, and create products. The student is expected to:	**7.3**	Creativity and innovation--innovative design process. The student takes an active role in learning by using a design process and creative thinking to develop and evaluate solutions, considering a variety of local and global perspectives. The student is expected to:	The revised knowledge and skills statement now focuses on the use of a design process to guide student learning as well as the consideration of a variety of local and global perspectives.
		7.3.A	resolve challenges in design processes independently using goal setting and personal character traits such as demonstrating responsibility and advocating for self appropriately;	
		7.3.B	discuss and implement a design process that includes planning and selecting digital tools to develop and refine a prototype or model through trial and error; and	
		7.3.C	identify how the design process is used in various industries.	
7.3	Research and information fluency. The student acquires, analyzes, and manages content from digital resources. The student is expected to:			
7.3.A	create a research plan to guide inquiry;			
		7.4	Creativity and innovation--emerging technologies. The student demonstrates a thorough understanding of the role of technology throughout history and its impact on societies. The student is expected to:	
7.6.H	explain how changes in technology throughout history have impacted various areas of study;	**7.4.A**	explain how changes in technology throughout history have impacted various areas of study;	
		7.4.B	explain how global trends impact the development of technology; and	

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
7.4.F	transfer current knowledge to the learning of newly encountered technologies.	**7.4.C**	transfer current knowledge to the learning of newly encountered technologies.	
7.4	Critical thinking, problem solving, and decision making. The student makes informed decisions by applying critical-thinking and problem-solving skills. The student is expected to:			
7.4.A	identify and define relevant problems and significant questions for investigation;			This concept was incorporated into the data literacy, management, representation strand.
7.4.B	plan and manage activities to develop a solution, design a computer program, or complete a project;			This concept was incorporated into the computational thinking strand.
7.4.C	collect and analyze data to identify solutions and make informed decisions;			This concept was incorporated into the data literacy, management, representation strand.
7.4.D	use multiple processes and diverse perspectives to explore alternative solutions;			This concept was incorporated into the computational thinking strand.
7.4.E	make informed decisions and support reasoning; and			This concept was incorporated into all of the revised strands.
		7.5	Data literacy, management, and representation--collect data. The student uses advanced digital strategies to collect and represent data. The student is expected to:	The new knowledge and skills statement addresses data collection and search strategies.
		7.5.A	demonstrate how data can be represented in a binary number systems; and	
7.3.B	use and evaluate various search strategies, including keyword(s) and Boolean operators;	**7.5.B**	evaluate advanced search strategies, including keywords, Boolean operators, and limiters.	
7.1.D	discuss trends and make predictions.	**7.6**	Data literacy, management, and representation--organize, manage, and analyze data. The student uses digital tools to transform data, make inferences, and predictions. The student is expected to use digital tools in order to transform data to analyze trends and make inferences and predictions.	The revised knowledge and skills statement includes the transformation of data and making predictions. This strand replaced the previous strand to focus more on the management of data.
7.6.B	select and apply technology tools based on licensing, application, and support;			This concept was merged into the digital citizenship strand.
7.6.C	identify, understand, and use operating systems;			
7.6.I	explain the relevance of technology as it applies to college and career readiness, life-long learning, and daily living;			This information was moved to the introduction of the TEKS.

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
7.6.L.i	a word processing document using digital typography standards such as page layout, font formatting, paragraph formatting, and list attributes;			These concepts were incorporated into the practical technology concepts strand.
7.6.L.ii	a spreadsheet workbook using advanced computational and graphic components such as complex formulas, basic functions, data types, and chart generation;			
7.6.L.iii	a database by manipulating components such as defining fields, entering data, and designing layouts appropriate for reporting; and			
7.6.L.iv	a digital publication using relevant publication standards;			
7.6.M	plan and create non-linear media projects using graphic design principles; and			
7.6.N	integrate two or more technology tools to create a new digital product.			
7.3.D	process data and communicate results.	**7.7**	Data literacy, management, and representation--communicate and publish results. The student creates digital products to communicate data to an audience for an intended purpose. The student is expected to use digital tools to communicate and display data from a product or process to inform or persuade an intended audience.	The new student expectation includes the communication and publication of data to inform audiences through the use of digital tools.
		7.8	Digital citizenship--social interactions. The student understands different styles of digital communication and that a student's actions online can have a long-term impact. The student is expected to:	These new standards include digital footprint and etiquette.
		7.8.A	classify actions as having a positive or negative effect on a digital footprint;	
		7.8.B	create and revise formal and informal communications using a feedback process and appropriate digital etiquette; and	
		7.8.C	collaborate on digital platforms such as recording a video conference presentation using appropriate formal and informal digital etiquette.	

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
7.5	Digital citizenship. The student practices safe, responsible, legal, and ethical behavior while using technology tools and resources. The student is expected to:	**7.9**	Digital citizenship--ethics and laws. The student recognizes and practices responsible, legal, and ethical behavior while using digital tools and resources. The student is expected to:	This knowledge and skills statement includes standards about digital ethics, proper use of digital sources, AUP, and consequences of violating intellectual property.
7.5.C	practice and explain safe and appropriate online behavior, personal security guidelines, digital identity, digital etiquette, and acceptable use of technology; and	**7.9.A**	adhere to local acceptable use policy (AUP) and practice and model safe, ethical, and positive online behaviors;	
7.5.A	understand and practice copyright principles, including current laws, fair use guidelines, creative commons, open source, and public domain;	**7.9.B**	explain the importance of intellectual property laws, including the benefits of protection for content owners, and the consequences of violating these laws;	
7.5.B	practice ethical acquisition of information and standard methods for citing sources;	**7.9.C**	create citations and cite sources for a variety of digital forms of intellectual property; and	
7.3.C	select and evaluate various types of digital resources for accuracy and validity; and	**7.9.D**	evaluate how various types of media, including social media, and technology can be used to exaggerate and misrepresent information.	The revised standard focuses on the evaluation of sources. Concepts of bullying were moved to other standards.
7.5.D	understand the negative impact of inappropriate technology use, including online bullying and harassment, hacking, intentional virus setting, invasion of privacy, and piracy such as software, music, video, and other media.			
7.5	Digital citizenship. The student practices safe, responsible, legal, and ethical behavior while using technology tools and resources. The student is expected to:	**7.10**	Digital citizenship--privacy, safety, and security. The student practices safe, legal, and ethical digital behaviors to become a socially responsible digital citizen. The student is expected to:	The revised standards now include concepts related to cybersecurity and introduce cyberbullying terminology, which is required by Texas Education Code (TEC) §28.002(z).
		7.10.A	describe and model ways to protect oneself from real-world cybersecurity attacks; and	
		7.10.B	analyze the negative impacts of cyberbullying on the victim and the bully.	
7.1.A	identify, create, and use files in various formats such as text, raster and vector graphics, video, and audio files;	**7.11**	Practical technology concepts--processes. The student evaluates and selects appropriate methods or techniques for an independent project and identifies and solves common hardware and software problems using troubleshooting strategies. The student is expected to choose a variety of digital tools to create, share, and communicate digital artifacts.	The new knowledge and skills statement includes the evaluation and selection of project methods as well as developing troubleshooting skills.

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
7.6	Technology operations and concepts. The student demonstrates a thorough understanding of technology concepts, systems, and operations. The student is expected to:	**7.12**	Practical technology concepts--skills and tools. The student leverages technology systems, concepts, and operations to produce digital artifacts. The student is expected to:	The revised knowledge and skills statement extends the demonstration of skills to applying skills to produce digital artifacts.
7.6.A	define and use current technology terminology appropriately;	**7.12.A**	demonstrate proficiency in the appropriate use of technology terminology in projects through team collaboration and communication;	
7.6.G	implement effective file management strategies such as file naming conventions, location, backup, hierarchy, folder structure, file conversion, tags, labels, and emerging digital organizational strategies;	**7.12.B**	demonstrate effective file management strategies such as file naming conventions, local and remote locations, backup, hierarchy, folder structure, file conversion, tags, and emerging digital organizational strategies with assistance;	The revised standard no longer requires the demonstration of file management strategies. Local and remote locations have been added.
7.6.D	understand and use software applications, including selecting and using software for a defined task;	**7.12.C**	select and use appropriate platform and tools, including selecting and using software or hardware for a defined task;	
7.6.E	identify, understand, and use hardware systems;			
7.6.K	use keyboarding techniques and ergonomic strategies while building speed and accuracy;	**7.12.D**	demonstrate improvement in speed and accuracy as measured by words per minute when applying correct keyboarding techniques;	
		7.12.E	select and use appropriate shortcuts within applications;	
7.6.F	understand troubleshooting techniques such as restarting systems, checking power issues, resolving software compatibility, verifying network connectivity, connecting to remote resources, and modifying display properties;	**7.12.F**	research and test potential solutions to solve hardware and software problems;	This revised standard focuses on applying appropriate troubleshooting techniques and is generalized to accommodate emerging technologies and terminology.
7.6.J	use a variety of local and remote input sources;	**7.12.G**	use a variety of types of local and remote data storage to store or share data such as cloud architecture or local server; and	The revised standard focuses on storage versus input sources.
7.6.L	create and edit files with productivity tools, including:	**7.12.H**	select and use productivity tools found in spread sheet, word processing, and publication applications to create digital artifacts such as reports, graphs, and charts with increasing complexity.	The revised standard specifically lists word processing, spread sheets, and publication applications as productivity tools.

Grade 8 Technology Applications Side-by-Side Comparison

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
		8.1	Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:	The new standards are now aligned with the core concepts of computational thinking as required by Texas Education Code (TEC) §28.002(c-3).
		8.1.A	decompose real-world problems into structured parts using pseudocode;	
		8.1.B	analyze the patterns and sequences found in pseudocode and identify its variables;	
		8.1.C	practice abstraction by developing a generalized algorithm that can solve different types of problems;	
		8.1.D	design a plan collaboratively using pseudocode to document a problem, possible solutions, and an expected timeline for the development of a codedt solution;	
		8.1.E	develop, compare, and improve algorithms for a specific task to solve a problem; and	
		8.1.F	analyze the benefits of using iteration (code and sequence repetition) in algorithms.	
8.1.B	create, present, and publish original works as a means of personal or group expression;			Creating works has been incorporated into all of the revised strands.
8.1.C	explore complex systems or issues using models, simulations, and new technologies to develop hypotheses, modify input, and analyze results; and			This concept was incorporated into the emerging technologies substrand of creativity and innovation.
		8.2	Computational thinking--applications. The student applies the fundamentals of computer science. The student is expected to:	The new standards are now aligned with the core concepts of computational thinking as required by Texas Education Code (TEC) §28.002(c-3)
		8.2.A	construct named variables with multiple data types and perform operations on their values;	
		8.2.B	use a software design process to create text-based programs with nested loops that address different subproblems within a real-world context; and	
		8.2.C	modify and implement previously written code to develop improved programs.	

2012 Citation	2012 Knowledge and Skill Statement/ Student Expectation	2022 Citation	2022 Knowledge and Skill Statement/ Student Expectation	Notes from TEA Staff
8.2	Communication and collaboration. The student collaborates and communicates both locally and globally to reinforce and promote learning. The student is expected to:			Students should communicate and collaborate in all areas of technology applications.
8.2.A	create and manage personal learning networks to collaborate and publish with peers, experts, or others using digital tools such as blogs, wikis, audio/video communication, or other emerging technologies;			These concepts have been moved to the digital citizenship strand.
8.2.B	communicate effectively with multiple audiences using a variety of media and formats; and			This content has been moved to the Data literacy, management, and representation--communicate and publish results strand.
8.2.C	create and publish products using technical writing strategies.			Creating works has been incorporated into all of the revised strands.
8.1	Creativity and innovation. The student uses creative thinking and innovative processes to construct knowledge, generate new ideas, and create products. The student is expected to:	**8.3**	Creativity and innovation--innovative design process. The student takes an active role in learning by using a design process and creative thinking to develop and evaluate solutions, considering a variety of local and global perspectives. The student is expected to:	The revised knowledge and skills statement now focuses on the use of a design process to guide student learning as well as the consideration of a variety of local and global perspectives.
		8.3.A	demonstrate innovation in a design process using goal setting and personal character traits, including demonstrating calculated risk-taking and tolerance;	
		8.3.B	discuss and implement a design process that includes planning, selecting digital tools to develop, test, and evaluate design limitations, and refining a prototype or model; and	
		8.3.C	identify how the design process is used in various industries.	
8.3	Research and information fluency. The student acquires, analyzes, and manages content from digital resources. The student is expected to:			
8.3.A	create a research plan to guide inquiry;			
		8.4	Creativity and innovation--emerging technologies. The student demonstrates a thorough understanding of the role of technology throughout history and its impact on societies. The student is expected to:	
8.6.H	evaluate how changes in technology throughout history have impacted various areas of study;	**8.4.A**	evaluate how changes in technology throughout history have impacted various areas of study;	
		8.4.B	evaluate and predict how global trends impact the development of technology; and	

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8.4.F	transfer current knowledge to the learning of newly encountered technologies.	**8.4.C**	transfer current knowledge to the learning of newly encountered technologies.	
8.4	Critical thinking, problem solving, and decision making. The student makes informed decisions by applying critical-thinking and problem-solving skills. The student is expected to:			
8.4.A	identify and define relevant problems and significant questions for investigation;			This concept was incorporated into the data literacy, management, representation strand.
8.4.B	plan and manage activities to develop a solution, design a computer program, or complete a project;			This concept was incorporated into the computational thinking strand.
8.4.C	collect and analyze data to identify solutions and make informed decisions;			This concept was incorporated into the data literacy, management, representation strand.
8.4.D	use multiple processes and diverse perspectives to explore alternative solutions;			This concept was incorporated into the computational thinking strand.
8.4.E	make informed decisions and support reasoning; and			This concept was incorporated into all of the revised strands.
		8.5	Data literacy, management, and representation--collect data. The student uses advanced digital strategies to collect and represent data. The student is expected to:	The new knowledge and skills statement addresses data collection and search strategies.
		8.5.A	compare and contrast data types, including binary, integers, real numbers, Boolean data, and text-based representations; and	
8.3.B	plan, use, and evaluate various search strategies, including keyword(s) and Boolean operators;	**8.5.B**	apply appropriate search strategies, including keywords, Boolean operators, and limiters, to achieve a specified outcome that includes a variety of file formats.	The revised standard includes the application of limiters as well as using a variety of file formats.
8.1.D	analyze trends and forecast possibilities.	**8.6**	Data literacy, management, and representation--organize, manage, and analyze data. The student uses digital tools to transform data, make inferences, and predictions. The student is expected to use digital tools in order to transform data, analyze trends, and predict possibilities and develop steps for the creation of an innovative process or product.	The revised knowledge and skills statement includes the transformation of data and making predictions. This strand replaced the previous strand to focus more on the management of data.
8.6.B	evaluate and select technology tools based on licensing, application, and support;			This concept was merged into the digital citizenship strand.
8.6.C	identify, understand, and use operating systems;			
8.6.I	evaluate the relevance of technology as it applies to college and career readiness, life-long learning, and daily living;			This information is included in the introduction of the TEKS.

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8.6.L.i	a word processing document using digital typography standards such as page layout, font formatting, paragraph formatting, mail merge, and list attributes;			These concepts were incorporated into the practical technology concepts strand.
8.6.L.ii	a spreadsheet workbook using advanced computational and graphic components such as complex formulas, advanced functions, data types, and chart generation;			
8.6.L.iii	a database by manipulating components, including defining fields, entering data, and designing layouts appropriate for reporting; and			In grade 8, students will apply their data processing skills to create digital products in 8.12.H.
8.6.L.iv	a digital publication using relevant publication standards and graphic design principles;			
8.6.M	plan and create non-linear media projects using graphic design principles; and			
8.6.N	integrate two or more technology tools to create a new digital product.			
8.3.D	process data and communicate results.	**8.7**	Data literacy, management, and representation--communicate and publish results. The student creates digital products to communicate data to an audience for an intended purpose. The student is expected to use digital tools to communicate and publish data from a product or process to persuade an intended audience.	The new knowledge and skills statement includes the communication and publication of data to inform audiences through the use of digital tools.
		8.8	Digital citizenship--social interactions. The student understands different styles of digital communication and that a student's actions online can have a long-term impact. The student is expected to:	These new standards include digital footprint and etiquette.
		8.8.A	analyze the importance of managing a digital footprint and how a digital footprint can affect the future;	
		8.8.B	create and publish a formal digital communication for a global audience using appropriate digital etiquette; and	
		8.8.C	collaborate and publish for a global audience on digital platforms such as recording and editing videos using appropriate formal and informal digital etiquette.	

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8.5	Digital citizenship. The student practices safe, responsible, legal, and ethical behavior while using technology tools and resources. The student is expected to:	**8.9**	Digital citizenship--ethics and laws. The student recognizes and practices responsible, legal, and ethical behavior while using digital tools and resources. The student is expected to:	This knowledge and skills statement includes standards about digital ethics, proper use of digital sources, AUP, and consequences of violating intellectual property.
8.5.C	practice and explain safe and appropriate online behavior, personal security guidelines, digital identity, digital etiquette, and acceptable use of technology; and	**8.9.A**	adhere to local acceptable use policy (AUP) and practice and advocate for safe, ethical, and positive online behaviors;	
8.5.A	understand, explain, and practice copyright principles, including current laws, fair use guidelines, creative commons, open source, and public domain;	**8.9.B**	adhere to appropriate intellectual property law when creating digital products;	
8.5.B	practice and explain ethical acquisition of information and standard methods for citing sources;	**8.9.C**	create citations and cite sources for a variety of digital forms of intellectual property; and	
8.3.C	select and evaluate various types of digital resources for accuracy and validity; and	**8.9.D**	evaluate the bias of digital information sources, including websites.	The revised standard focuses on the evaluation of bias. Concepts of bullying were moved to other standards.
8.5.D	understand and explain the negative impact of inappropriate technology use, including online bullying and harassment, hacking, intentional virus setting, invasion of privacy, and piracy such as software, music, video, and other media.			
8.5	Digital citizenship. The student practices safe, responsible, legal, and ethical behavior while using technology tools and resources. The student is expected to:	**8.10**	Digital citizenship--privacy, safety, and security. The student practices safe, legal, and ethical digital behaviors to become a socially responsible digital citizen. The student is expected to:	The revised standards now include concepts related to cybersecurity and introduce cyberbullying terminology, which is required by Texas Education Code (TEC) §28.002(z).
		8.10.A	analyze real-world scenarios to identify cybersecurity threats and propose ways to prevent harm; and	
		8.10.B	evaluate scenarios or case studies to identify warning signs of a cyberbullying victim such as withdrawal or lack of sleep and predict the outcomes for both the victim and the bully.	
		8.11	Practical technology concepts--processes. The student evaluates and selects appropriate methods or techniques for an independent project and identifies and solves common hardware and software problems using troubleshooting strategies. The student is expected to:	The new knowledge and skills statement includes the evaluation and selection of project methods as well as developing troubleshooting skills.
8.1.A	identify, create, and use files in various formats, including text, raster and vector graphics, video, and audio files;	**8.11.A**	combine various file formats for a specific project or audience; and	The revised standard requires students to combine various file formats and has been generalized to accommodate emerging technologies and terminology.

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		8.11.B	share and seek feedback on files in various formats, including text, raster and vector graphics, video, and audio files.	
8.6	Technology operations and concepts. The student demonstrates a thorough understanding of technology concepts, systems, and operations. The student is expected to:	**8.12**	Practical technology concepts--skills and tools. The student leverages technology systems, concepts, and operations to produce digital artifacts. The student is expected to:	The revised knowledge and skills statement extends the demonstration of skills to applying skills to produce digital artifacts.
8.6.A	define and use current technology terminology appropriately;	**8.12.A**	integrate use of appropriate technology terminology in scholarly inquiry and dialogue such as classroom discussion and written samples;	
8.6.G	implement effective file management strategies such as file naming conventions, location, backup, hierarchy, folder structure, file conversion, tags, labels, and emerging digital organizational strategies;	**8.12.B**	implement effective file management strategies independently, including file naming conventions, local and remote locations, backup, hierarchy, folder structure, file conversion, tags, and emerging digital organizational strategies;	The revised standard no longer requires the demonstration of file management strategies. Local and remote locations have been added.
8.6.D	understand and use software applications, including selecting and using software for a defined task;	**8.12.C**	select and use appropriate platform and tools, including selecting and using software or hardware to transfer data;	
8.6.E	identify, understand, and use hardware systems;			
8.6.K	use keyboarding techniques and ergonomic strategies while building speed and accuracy;	**8.12.D**	demonstrate improvement in speed and accuracy as measured by words per minute when applying correct keyboarding techniques;	This revised standard specifies using words per minute as a measure for the improvement of keyboard skills.
		8.12.E	select and use appropriate shortcuts within applications;	
8.6.F	apply troubleshooting techniques, including restarting systems, checking power issues, resolving software compatibility, verifying network connectivity, connecting to remote resources, and modifying display properties;	**8.12.F**	apply appropriate troubleshooting techniques and seek technical assistance as needed;	This revised standard focuses on applying appropriate troubleshooting techniques and is generalized to accommodate emerging technologies and terminology.
8.6.J	use a variety of local and remote input sources;	**8.12.G**	compare types of local and remote data storage such as cloud architecture or local server and select the appropriate type of storage to store and share data; and	The revised standard focuses on storage versus input sources as well as the selection of appropriate types of storage.
8.6.L	create and edit files with productivity tools, including:	**8.12.H**	select and use productivity tools found in spread sheet, word processing, and publication applications to create digital artifacts, including reports, graphs, and charts, with increasing complexity.	The revised standard specifically lists word processing, spread sheets, and publication applications as productivity tools.