Texas Technology Applications

Grade 4

Implementation. The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year. 4.A

1 **No later than August 1, 2024, the commissioner of education shall determine whether instructional materials funding has been made available to Texas public schools for materials that cover the essential knowledge and skills identified in this section.** 4.A.1

2 **If the commissioner makes the determination that instructional materials funding has been made available this section shall be implemented beginning with the 2024-2025 school year and apply to the 2024-2025 and subsequent school years.** 4.A.2

3 **If the commissioner does not make the determination that instructional materials funding has been made available under this subsection, the commissioner shall determine no later than August 1 of each subsequent school year whether instructional materials funding has been made available. If the commissioner determines that instructional materials funding has been made available, the commissioner shall notify the State Board of Education and school districts that this section shall be implemented for the following school year.** 4.A.3

Introduction. 4.B

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.** 4.B.1

2 **The technology applications Texas Essential Knowledge and Skills (TEKS) consist of five strands that 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.** 4.B.2

A Computational thinking. Students break down the problem-solving process into four steps: decomposition, pattern recognition, abstraction, and algorithms. 4.B.2.A

B Creativity and innovation. Students use innovative design processes to develop solutions to problems. Students plan a solution, create the solution, test the solution, iterate, and debug the solution as needed, and implement a completely new and innovative product. 4.B.2.B

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C Data literacy, management, and representation. Students collect, organize, manage, analyze, and publish various types of data for an audience. 4.B.2.C

D Digital citizenship. Students practice the 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. 4.B.2.D

E Practical technology concepts. Students build their knowledge of software applications and hardware focusing on keyboarding and use of applications and tools. Students also build their knowledge and use of technology systems, including integrating the use of multiple applications. 4.B.2.E

3 **The technology applications TEKS 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, including through a stand-alone course or by integrating the technology applications standards in the essential knowledge and skills for one or more courses or subject areas.** 4.B.3

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.** 4.B.4

Knowledge and skills. 4.C

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:** 4.C.1

A decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems; 4.C.1.A

B identify patterns in story problems and make predictions based on the pattern; 4.C.1.B

C communicate design plans and solutions using a variety of options; and 4.C.1.C

D debug algorithms (set of procedures) by identifying and removing errors. 4.C.1.D

2 **Computational thinking--applications. The student applies the fundamentals of computer science. The student is expected to:** 4.C.2

A use variables within a program to modify data; and 4.C.2.A

B use a design process to create programs that include sequences, loops, and conditionals to express ideas or address a problem. 4.C.2.B

3 **Creativity and innovation--innovative design process. The student takes an active role in learning by using a design process to solve authentic problems for a local or global audience, using a variety of technologies. The student is expected to:** 4.C.3

A explain the importance of and demonstrate personal skills and behaviors, including problem solving and questioning, effective communication, following directions, mental agility, and metacognition, that are needed to implement a design process successfully; and 4.C.3.A

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B apply an appropriate design process that includes components to improve processes and refine original products for authentic problems. 4.C.3.B

4 **Creativity and innovation--emerging technologies. The student demonstrates an understanding that technology is dynamic and impacts different communities. The student is expected to identify examples of emerging technologies.** 4.C.4

5 **Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:** 4.C.5

A classify numerical and non-numerical data; and 4.C.5.A

B identify and collect data by using various search strategies, including two or more keywords within specific parameters. 4.C.5.B

6 **Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.** 4.C.6

7 **Data literacy, management, and representation--communicate and publish results. The student communicates data through the use of digital tools to inform an audience. The student is expected to use digital tools to communicate results of an inquiry to inform an intended audience.** 4.C.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:** 4.C.8

A describe how information retained online creates a permanent digital footprint; 4.C.8.A

B describe appropriate digital etiquette for various forms of digital communication such as text, email, and online chat; and 4.C.8.B

C demonstrate appropriate digital etiquette for various forms of digital collaboration such as shared documents, video conferencing, and other platforms. 4.C.8.C

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:** 4.C.9

A demonstrate adherence to local acceptable use policy (AUP) and explain the importance of responsible and ethical technology use; 4.C.9.A

B describe the rights and responsibilities of a creator, define copyright law, and explain how copyright law applies to creative work; and 4.C.9.B

C create citations for digital forms of media with assistance. 4.C.9.C

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:** 4.C.10

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A demonstrate account safety, including creating a strong password and logging off devices, and explain the importance of these practices; 4.C.10.A

B identify and discuss types of data collection tools such as cookies, pop-ups, smart devices, and unsecured networks and explain why it is important to maintain digital privacy; and 4.C.10.B

C discuss and explain how to respond to cyberbullying, including advocating for self and others. 4.C.10.C

11 Practical technology concepts--processes. The student engages with technology systems, concepts, and operations. The student is expected to: 4.C.11

A evaluate and choose applications for relevance to an assigned task; and 4.C.11.A

B perform software application functions such as outline options, bulleting, and numbering lists, and perform editing functions such as finding and replacing. 4.C.11.B

12 Practical technology concepts--skills and tools. The student selects appropriate methods or techniques for an assigned task and identifies and solves simple hardware and software problems using common troubleshooting strategies. The student is expected to: 4.C.12

A communicate an understanding of terminology related to virtual systems such as video conferencing, augmented reality, and virtual reality environments; 4.C.12.A

B evaluate where and how to save, including the use of appropriate naming conventions and effective file management strategies and folder structures; 4.C.12.B

C demonstrate proper touch keyboarding techniques with speed and accuracy and ergonomic strategies such as correct hand and body positions; 4.C.12.C

D identify and practice using cross-curricular symbols or other input device shortcuts on a keyboard; and 4.C.12.D

E use troubleshooting strategies to solve minor technical problems with hardware and software such as restarting software or rebooting hardware. 4.C.12.E