

Chapter 126. Texas Essential Knowledge and Skills for Technology Applications

Subchapter A. Elementary

Statutory Authority: The provisions of this Subchapter A issued under the Texas Education Code, §7.102(c)(4) and §28.002, unless otherwise noted.

§126.1. Implementation of Texas Essential Knowledge and Skills for Technology Applications, Elementary.

The provisions of §126.2 and §126.3 of this subchapter shall be superseded by §126.6 and §126.7 of this subchapter beginning with the 2012-2013 school year.

Source: The provisions of this §126.1 adopted to be effective September 1, 1998, 22 TexReg 5203; amended to be effective September 26, 2011, 36 TexReg 6263.

§126.2. Technology Applications, Kindergarten-Grade 2.

(a) Introduction.

- (1) The technology applications curriculum has four strands: foundations, information acquisition, work in solving problems, and communication.
- (2) Through the study of technology applications foundations, including technology-related terms, concepts, and data input strategies, students learn to make informed decisions about technologies and their applications. The efficient acquisition of information includes the identification of task requirements; the plan for using search strategies; and the use of technology to access, analyze, and evaluate the acquired information. By using technology as a tool that supports the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create a solution, and evaluate the results. Students communicate information in different formats and to diverse audiences. A variety of technologies will be used. Students will analyze and evaluate the results.

(b) Knowledge and skills.

- (1) Foundations. The student demonstrates knowledge and appropriate use of hardware components, software programs, and their connections. The student is expected to:
 - (A) use technology terminology appropriate to the task;
 - (B) start and exit programs as well as create, name, and save files; and
 - (C) use networking terminology such as on-line, network, or password and access remote equipment on a network such as a printer.
- (2) Foundations. The student uses data input skills appropriate to the task. The student is expected to:
 - (A) use a variety of input devices such as mouse, keyboard, disk drive, modem, voice/sound recorder, scanner, digital video, CD-ROM, or touch screen;
 - (B) use proper keyboarding techniques such as correct hand and body positions and smooth and rhythmic keystroke patterns as grade-level appropriate;
 - (C) demonstrate touch keyboarding techniques for operating the alphabetic, numeric, punctuation, and symbol keys as grade-level appropriate;
 - (D) produce documents at the keyboard, proofread, and correct errors; and
 - (E) use language skills including capitalization, punctuation, spelling, word division, and use of numbers and symbols as grade-level appropriate.
- (3) Foundations. The student complies with the laws and examines the issues regarding the use of technology in society. The student is expected to:

- (A) follow acceptable use policies when using computers; and
 - (B) model respect of intellectual property by not illegally copying software or another individual's electronic work.
- (4) Information acquisition. The student uses a variety of strategies to acquire information from electronic resources, with appropriate supervision. The student is expected to:
- (A) apply keyword searches to acquire information; and
 - (B) select appropriate strategies to navigate and access information for research and resource sharing.
- (5) Information acquisition. The student acquires electronic information in a variety of formats, with appropriate supervision. The student is expected to:
- (A) acquire information including text, audio, video, and graphics; and
 - (B) use on-line help.
- (6) Information acquisition. The student evaluates the acquired electronic information. The student is expected to:
- (A) determine the success of strategies used to acquire electronic information; and
 - (B) determine the usefulness and appropriateness of digital information.
- (7) Solving problems. The student uses appropriate computer-based productivity tools to create and modify solutions to problems. The student is expected to:
- (A) use software programs with audio, video, and graphics to enhance learning experiences; and
 - (B) use appropriate software, including the use of word processing and multimedia, to express ideas and solve problems.
- (8) Solving problems. The student uses research skills and electronic communication, with appropriate supervision, to create new knowledge. The student is expected to:
- (A) use communication tools to participate in group projects; and
 - (B) use electronic tools and research skills to build a knowledge base regarding a topic, task, or assignment.
- (9) Solving problems. The student uses technology applications to facilitate evaluation of work, both process and product. The student is expected to:
- (A) use software features, such as on-line help, to evaluate work progress; and
 - (B) use software features, such as slide show previews, to evaluate final product.
- (10) Communication. The student formats digital information for appropriate and effective communication. The student is expected to:
- (A) use font attributes, color, white space, and graphics to ensure that products are appropriate for the defined audience; and
 - (B) use font attributes, color, white space, and graphics to ensure that products are appropriate for the communication media including multimedia screen displays and printed materials.
- (11) Communication. The student delivers the product electronically in a variety of media, with appropriate supervision. The student is expected to:
- (A) publish information in a variety of media including, but not limited to, printed copy or monitor display; and

- (B) publish information in a variety of media including, but not limited to, stored files or video.
- (12) Communication. The student uses technology applications to facilitate evaluation of communication, both process and product. The student is expected to:
- (A) select representative products to be collected and stored in an electronic evaluation tool; and
 - (B) evaluate the product for relevance to the assignment or task.

Source: The provisions of this §126.2 adopted to be effective September 1, 1998, 22 TexReg 5203.

§126.3. Technology Applications, Grades 3-5.

- (a) Introduction.
- (1) The technology applications curriculum has four strands: foundations, information acquisition, work in solving problems, and communication.
 - (2) Through the study of technology applications foundations, including technology-related terms, concepts, and data input strategies, students learn to make informed decisions about technologies and their applications. The efficient acquisition of information includes the identification of task requirements; the plan for using search strategies; and the use of technology to access, analyze, and evaluate the acquired information. By using technology as a tool that supports the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create a solution, and evaluate the results. Students communicate information in different formats and to diverse audiences. A variety of technologies will be used. Students will analyze and evaluate the results.
- (b) Knowledge and skills.
- (1) Foundations. The student demonstrates knowledge and appropriate use of hardware components, software programs, and their connections. The student is expected to:
 - (A) use technology terminology appropriate to the task;
 - (B) save and delete files, uses menu options and commands, and work with more than one software application;
 - (C) identify and describe the characteristics of digital input, processing, and output;
 - (D) delineate and make necessary adjustments regarding compatibility issues including, but not limited to, digital file formats and cross platform connectivity; and
 - (E) access remote equipment on a network such as a printer or other peripherals.
 - (2) Foundations. The student uses data input skills appropriate to the task. The student is expected to:
 - (A) use a variety of input devices such as mouse, keyboard, disk drive, modem, voice/sound recorder, scanner, digital video, CD-ROM, or touch screen;
 - (B) use proper keyboarding techniques such as correct hand and body positions and smooth and rhythmic keystroke patterns;
 - (C) demonstrate touch keyboarding techniques for operating the alphabetic, numeric, punctuation, and symbol keys as grade-level appropriate;
 - (D) produce documents at the keyboard, proofread, and correct errors;
 - (E) use language skills including capitalization, punctuation, spelling, word division, and use of numbers and symbols as grade-level appropriate; and
 - (F) demonstrate an appropriate speed on short timed exercises depending upon the grade level and hours of instruction.

- (3) Foundations. The student complies with the laws and examines the issues regarding the use of technology in society. The student is expected to:
 - (A) follow acceptable use policies when using computers; and
 - (B) model respect of intellectual property by not illegally copying software or another individual's electronic work.
- (4) Information acquisition. The student uses a variety of strategies to acquire information from electronic resources, with appropriate supervision. The student is expected to:
 - (A) apply appropriate electronic search strategies in the acquisition of information including keyword and Boolean search strategies; and
 - (B) select appropriate strategies to navigate and access information on local area networks (LANs) and wide area networks (WANs), including the Internet and intranet, for research and resource sharing.
- (5) Information acquisition. The student acquires electronic information in a variety of formats, with appropriate supervision. The student is expected to:
 - (A) acquire information including text, audio, video, and graphics; and
 - (B) use on-line help and documentation.
- (6) Information acquisition. The student evaluates the acquired electronic information. The student is expected to:
 - (A) apply critical analysis to resolve information conflicts and validate information;
 - (B) determine the success of strategies used to acquire electronic information; and
 - (C) determine the usefulness and appropriateness of digital information.
- (7) Solving problems. The student uses appropriate computer-based productivity tools to create and modify solutions to problems. The student is expected to:
 - (A) use software programs with audio, video, and graphics to enhance learning experiences;
 - (B) use appropriate software to express ideas and solve problems including the use of word processing, graphics, databases, spreadsheets, simulations, and multimedia; and
 - (C) use a variety of data types including text, graphics, digital audio, and video.
- (8) Solving problems. The student uses research skills and electronic communication, with appropriate supervision, to create new knowledge. The student is expected to:
 - (A) use communication tools to participate in group projects;
 - (B) use interactive technology environments, such as simulations, electronic science or mathematics laboratories, virtual museum field trips, or on-line interactive lessons, to manipulate information; and
 - (C) participate with electronic communities as a learner, initiator, contributor, or mentor.
- (9) Solving problems. The student uses technology applications to facilitate evaluation of work, both process and product. The student is expected to:
 - (A) use software features, such as on-line help, to evaluate work progress; and
 - (B) use software features, such as slide show previews, to evaluate final product.
- (10) Communication. The student formats digital information for appropriate and effective communication. The student is expected to:
 - (A) use font attributes, color, white space, and graphics to ensure that products are appropriate for the defined audience;

- (B) use font attributes, color, white space, and graphics to ensure that products are appropriate for the communication media including multimedia screen displays, Internet documents, and printed materials; and
 - (C) use appropriate applications including, but not limited to, spreadsheets and databases to develop charts and graphs by using data from various sources.
- (11) Communication. The student delivers the product electronically in a variety of media, with appropriate supervision. The student is expected to:
- (A) publish information in a variety of media including, but not limited to, printed copy, monitor display, Internet documents, and video; and
 - (B) use presentation software to communicate with specific audiences.
- (12) Communication. The student uses technology applications to facilitate evaluation of communication, both process and product. The student is expected to:
- (A) select representative products to be collected and stored in an electronic evaluation tool;
 - (B) evaluate the product for relevance to the assignment or task; and
 - (C) create technology assessment tools to monitor progress of project such as checklists, timelines, or rubrics.

Source: The provisions of this §126.3 adopted to be effective September 1, 1998, 22 TexReg 5203.

§126.5. Implementation of Texas Essential Knowledge and Skills for Technology Applications, Elementary, Beginning with School Year 2012-2013.

The provisions of §126.6 and §126.7 of this subchapter shall be implemented by school districts beginning with the 2012-2013 school year.

Source: The provisions of this §126.5 adopted to be effective September 26, 2011, 36 TexReg 6263.

§126.6. Technology Applications, Kindergarten-Grade 2, Beginning with School Year 2012-2013.

- (a) Introduction.
- (1) The technology applications curriculum has six strands based on the National Educational Technology Standards for Students (NETS•S) and performance indicators developed by the International Society for Technology in Education (ISTE): creativity and innovation; communication and collaboration; research and information fluency; critical thinking, problem solving, and decision making; digital citizenship; and technology operations and concepts.
 - (2) Through the study of the six strands in technology applications, students use creative thinking and innovative processes to construct knowledge and develop products. Students communicate and collaborate both locally and globally to reinforce and promote learning. Research and information fluency includes the acquisition and evaluation of digital content. Students develop critical-thinking, problem-solving, and decision-making skills by collecting, analyzing, and reporting digital information. Students practice digital citizenship by behaving responsibly while using technology tools and resources. Through the study of technology operations and concepts, students learn technology related terms, concepts, and data input strategies.
 - (3) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.
- (b) Knowledge and skills.
- (1) Creativity and innovation. The student uses creative thinking and innovative processes to construct knowledge and develop digital products. The student is expected to:
 - (A) apply prior knowledge to develop new ideas, products, and processes;

- (B) create original products using a variety of resources;
 - (C) explore virtual environments, simulations, models, and programming languages to enhance learning;
 - (D) create and execute steps to accomplish a task; and
 - (E) evaluate and modify steps to accomplish a task.
- (2) Communication and collaboration. The student collaborates and communicates both locally and globally using digital tools and resources to reinforce and promote learning. The student is expected to:
- (A) use communication tools that allow for anytime, anywhere access to interact, collaborate, or publish with peers locally and globally;
 - (B) participate in digital environments to develop cultural understanding by interacting with learners of multiple cultures;
 - (C) format digital information, including font attributes, color, white space, graphics, and animation, for a defined audience and communication medium; and
 - (D) select, store, and deliver products using a variety of media, formats, devices, and virtual environments.
- (3) Research and information fluency. The student acquires and evaluates digital content. The student is expected to:
- (A) use search strategies to access information to guide inquiry;
 - (B) use research skills to build a knowledge base regarding a topic, task, or assignment; and
 - (C) evaluate the usefulness of acquired digital content.
- (4) Critical thinking, problem solving, and decision making. The student applies critical-thinking skills to solve problems, guide research, and evaluate projects using digital tools and resources. The student is expected to:
- (A) identify what is known and unknown and what needs to be known regarding a problem and explain the steps to solve the problem;
 - (B) evaluate the appropriateness of a digital tool to achieve the desired product;
 - (C) evaluate products prior to final submission; and
 - (D) collect, analyze, and represent data using tools such as word processing, spreadsheets, graphic organizers, charts, multimedia, simulations, models, and programming languages.
- (5) Digital citizenship. The student practices safe, responsible, legal, and ethical behavior while using digital tools and resources. The student is expected to:
- (A) adhere to acceptable use policies reflecting appropriate behavior in a digital environment;
 - (B) comply with acceptable digital safety rules, fair use guidelines, and copyright laws; and
 - (C) practice the responsible use of digital information regarding intellectual property, including software, text, images, audio, and video.
- (6) Technology operations and concepts. The student demonstrates knowledge and appropriate use of technology systems, concepts, and operations. The student is expected to:
- (A) use appropriate terminology regarding basic hardware, software applications, programs, networking, virtual environments, and emerging technologies;
 - (B) use appropriate digital tools and resources for storage, access, file management, collaboration, and designing solutions to problems;

- (C) perform basic software application functions, including opening an application and creating, modifying, printing, and saving files;
- (D) use a variety of input, output, and storage devices;
- (E) use proper keyboarding techniques such as ergonomically correct hand and body positions appropriate for Kindergarten-Grade 2 learning;
- (F) demonstrate keyboarding techniques for operating the alphabetic, numeric, punctuation, and symbol keys appropriate for Kindergarten-Grade 2 learning; and
- (G) use the help feature online and in applications.

Source: The provisions of this §126.6 adopted to be effective September 26, 2011, 36 TexReg 6263.

§126.7. Technology Applications, Grades 3-5, Beginning with School Year 2012-2013.

- (a) Introduction.
 - (1) The technology applications curriculum has six strands based on the National Educational Technology Standards for Students (NETS•S) and performance indicators developed by the International Society for Technology in Education (ISTE): creativity and innovation; communication and collaboration; research and information fluency; critical thinking, problem solving, and decision making; digital citizenship; and technology operations and concepts.
 - (2) Through the study of the six strands in technology applications, students use creative thinking and innovative processes to construct knowledge and develop products. Students communicate and collaborate both locally and globally to reinforce and promote learning. Research and information fluency includes the acquisition and evaluation of digital content. Students develop critical-thinking, problem-solving, and decision-making skills by collecting, analyzing, and reporting digital information. Students practice digital citizenship by behaving responsibly while using technology tools and resources. Through the study of technology operations and concepts, students learn technology related terms, concepts, and data input strategies.
 - (3) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.
- (b) Knowledge and skills.
 - (1) Creativity and innovation. The student uses creative thinking and innovative processes to construct knowledge and develop digital products. The student is expected to:
 - (A) create original products using a variety of resources;
 - (B) analyze trends and forecast possibilities, developing steps for the creation of an innovative process or product; and
 - (C) use virtual environments to explore systems and issues.
 - (2) Communication and collaboration. The student collaborates and communicates both locally and globally using digital tools and resources to reinforce and promote learning. The student is expected to:
 - (A) draft, edit, and publish products in different media individually and collaboratively;
 - (B) use font attributes, color, white space, and graphics to ensure that products are appropriate for multiple communication media, including monitor display, web, and print;
 - (C) collaborate effectively through personal learning communities and social environments;
 - (D) select and use appropriate collaboration tools;
 - (E) evaluate the product for relevance to the assignment or task; and

- (F) perform basic software application functions, including opening applications and creating, modifying, printing, and saving files.
- (3) Research and information fluency. The student acquires and evaluates digital content. The student is expected to:
- (A) use various search strategies such as keyword(s); the Boolean identifiers *and*, *or*, and *not*; and other strategies appropriate to specific search engines;
 - (B) collect and organize information from a variety of formats, including text, audio, video, and graphics;
 - (C) validate and evaluate the relevance and appropriateness of information; and
 - (D) acquire information appropriate to specific tasks.
- (4) Critical thinking, problem solving, and decision making. The student researches and evaluates projects using digital tools and resources. The student is expected to:
- (A) identify information regarding a problem and explain the steps toward the solution;
 - (B) collect, analyze, and represent data to solve problems using tools such as word processing, databases, spreadsheets, graphic organizers, charts, multimedia, simulations, models, and programming languages;
 - (C) evaluate student-created products through self and peer review for relevance to the assignment or task; and
 - (D) evaluate technology tools applicable for solving problems.
- (5) Digital citizenship. The student practices safe, responsible, legal, and ethical behavior while using digital tools and resources. The student is expected to:
- (A) adhere to acceptable use policies reflecting positive social behavior in the digital environment;
 - (B) respect the intellectual property of others;
 - (C) abide by copyright law and the Fair Use Guidelines for Educational Multimedia;
 - (D) protect and honor the individual privacy of oneself and others;
 - (E) follow the rules of digital etiquette;
 - (F) practice safe, legal, and responsible use of information and technology; and
 - (G) comply with fair use guidelines and digital safety rules.
- (6) Technology operations and concepts. The student demonstrates knowledge and appropriate use of technology systems, concepts, and operations. The student is expected to:
- (A) demonstrate an understanding of technology concepts, including terminology for the use of operating systems, network systems, virtual systems, and learning systems appropriate for Grades 3-5 learning;
 - (B) manipulate files using appropriate naming conventions; file management, including folder structures and tagging; and file conversions;
 - (C) navigate systems and applications accessing peripherals both locally and remotely;
 - (D) troubleshoot minor technical problems with hardware and software using available resources such as online help and knowledge bases; and
 - (E) use proper touch keyboarding techniques and ergonomic strategies such as correct hand and body positions and smooth and rhythmic keystrokes.

Source: The provisions of this §126.7 adopted to be effective September 26, 2011, 36 TexReg 6263.