

Subject	§126. Technology Applications			
Course Title	§126.32. Fundamentals of Computer Science (One-Half to One Credit), Beginning with School Year 2012-2013.			
TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(a) General Requirements. Students shall be awarded one-half to one credit for successful completion of this course. The prerequisite for this course is proficiency in the knowledge and skills relating to Technology Applications, Grades 6-8. This course is recommended for students in Grades 9-12.				
(b) 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) Fundamentals of Computer Science is intended as a first course for those students just beginning the study of computer science. Students will learn about the computing tools that are used every day. Students will foster their creativity and innovation through opportunities to design, implement, and present solutions to real-world problems. Students will collaborate and use computer science concepts to access, analyze, and evaluate information needed to solve problems. Students will learn the problem-solving and reasoning skills that are the foundation of computer science. By using computer science knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will gain an understanding of the principles of computer science through the study of technology operations and concepts.				
(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.				
(c) Knowledge and Skills.				
(1) Creativity and innovation. The student develops products and generates new understanding by extending existing knowledge. The student is expected to:	(A) investigate and explore various career opportunities within the computer science field and report findings through various media	(i) investigate various career opportunities within the computer science field		
(1) Creativity and innovation. The student develops products and generates new understanding by extending existing knowledge. The student is expected to:	(A) investigate and explore various career opportunities within the computer science field and report findings through various media	(ii) explore various career opportunities within the computer science field		
(1) Creativity and innovation. The student develops products and generates new understanding by extending existing knowledge. The student is expected to:	(A) investigate and explore various career opportunities within the computer science field and report findings through various media	(iii) report findings through various media		
(1) Creativity and innovation. The student develops products and generates new understanding by extending existing knowledge. The student is expected to:	(B) create Student232ishntendticiv			

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(1) Creativity and innovation. The student develops products and generates new understanding by extending existing knowledge. The				

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(1) Creativity and innovation. The student develops products and generates new understanding by extending existing knowledge. The student is expected to:	(D) create algorithms for the solution of various problems			
(1) Creativity and innovation. The student develops products and generates new understanding by extending existing knowledge. The student is expected to:	(E) create web pages using a mark-up language			
(1) Creativity and innovation. The student develops products and generates new understanding by extending existing knowledge. The student is expected to:	(F) use the Internet to create and publish solutions	(i) use the Internet to create solutions	(F) use the Internet to create and publish solutions	(i) use the Internet to create solutions (ii) use the Internet to create solutions
(1) Creativity and innovation. The student develops products and generates new understanding by extending existing knowledge. The student is expected to:	(F) use the Internet to create and publish solutions	(ii) use the Internet to publish solutions (i) use the Internet to create solutions		

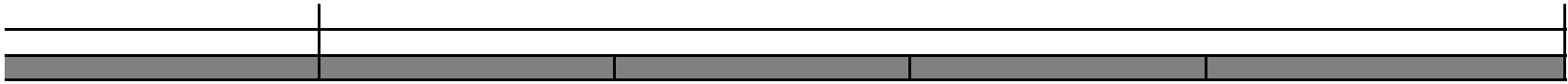


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(2) Communication and collaboration. The student communicates and collaborates with peers to contribute to his or her own learning and the learning of others. The student is expected to:	(B) debug and solve problems using reference materials and effective strategies	(iii) debug problems using effective strategies		
(2) Communication and collaboration. The student communicates and collaborates with peers to contribute to his or her own learning and the learning of others. The student is expected to:	(B) debug and solve problems using reference materials and effective strategies	(iv) solve problems using effective strategies		
(2) Communication and collaboration. The student communicates and collaborates with peers to contribute to his or her own learning and the learning of others. The student is expected to:	(C) publish information in a variety of ways such as print, monitor display, web pages, and video	(i) publish information in a variety of ways		
(3) Research and information fluency. The student locates, analyzes, processes, and organizes data. The student is expected to:	(A) construct appropriate electronic search strategies			
(3) Research and information fluency. The student locates, analyzes, processes, and organizes data. The student is expected to:	(B) use a variety of resources, including other subject areas, together with various productivity tools to gather authentic data as a basis for individual and group programming projects	(i) use a variety of resources, including other subject areas, together with various productivity tools to gather authentic data as a basis for individual programming projects		
(3) Research and information fluency. The student locates, analyzes, processes, and organizes data. The student is expected to:	(B) use a variety of resources, including other subject areas, together with various productivity tools to gather authentic data as a basis for individual and group programming projects	(ii) use a variety of resources, including other subject areas with various productivity tools to gather authentic data as a basis for group programming projects		

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(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(A) demonstrate the ability to insert applets into web pages			
(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(B) find, download, and insert scripting code into web pages to enhance interactivity	(i) find scripting code [in] web pages to enhance interactivity		
(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(B) find, download, and insert scripting code into web pages to enhance interactivity	(ii) download scripting code into web pages to enhance interactivity		
(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(B) find, download, and insert scripting code into web pages to enhance interactivity	(iii) insert scripting code into web pages to enhance interactivity		
(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(C) understand binary representation of data in computer systems, perform conversions between decimal and binary number systems, and count in binary number systems	(i) understand binary representation of data in computer systems		
(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(C) understand binary representation of data in computer systems, perform conversions between decimal and binary number systems, and count in binary number systems	(ii) perform conversions between decimal and binary number systems		
(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(C) understand binary representation of data in computer systems, perform conversions between decimal and binary number systems, and count in binary number systems	(iii) count in binary number systems		

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(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(E) demonstrate coding proficiency in a contemporary programming language by developing solutions that create stories, games, and animations	(ii) demonstrate coding proficiency in a contemporary programming language by developing solutions that create games		
(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(E) demonstrate coding proficiency in a contemporary programming language by developing solutions that create stories, games, and animations	(iii) demonstrate coding proficiency in a contemporary programming language by developing solutions that create animations		
(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(F) choose, identify, and use the appropriate data type to properly represent data in a problem solution	(i) choose the appropriate data type to properly represent data in a problem solution		
(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(F) choose, identify, and use the appropriate data type to properly represent data in a problem solution	(ii) identify the appropriate data type to properly represent data in a problem solution		
(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(F) choose, identify, and use the appropriate data type to properly represent data in a problem solution	(iii) use the appropriate data type to properly represent data in a problem solution		
(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(G) demonstrate an understanding of and use variables within a programmed story, game, or animation	(i) demonstrate an understanding of variables within a programmed story, game, or animation		
(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	(G) demonstrate an understanding of and use variables within a programmed story, game, or animation	(ii) use variables within a programmed story, game, or animation		





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(5) Digital citizenship. The student explores and understands safety, legal, cultural, and societal issues relating to the use of technology and information. The student is expected to:	(B) demonstrate proper digital etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and on intranets	(iv) demonstrate knowledge of acceptable use policies when using networks, especially resources on intranets		
(5) Digital citizenship. The student explores and understands safety, legal, cultural, and societal issues relating to the use of technology and information. The student is expected to:	(C) investigate measures such as passwords or virus detection/prevention to protect computer systems and databases from unauthorized use and tampering	(i) investigate measures to protect computer systems from unauthorized use		
(5) Digital citizenship. The student explores and understands safety, legal, cultural, and societal issues relating to the use of technology and information. The student is expected to:	(C) investigate measures such as passwords or virus detection/prevention to protect computer systems and databases from unauthorized use and tampering	(ii) investigate measures to protect computer systems from tampering		
(5) Digital citizenship. The student explores and understands safety, legal, cultural, and societal issues relating to the use of technology and information. The student is expected to:	(C) investigate measures such as passwords or virus detection/prevention to protect computer systems and databases from unauthorized use and tampering	(iii) investigate measures to protect databases from unauthorized use		
(5) Digital citizenship. The student explores and understands safety, legal, cultural, and societal issues relating to the use of technology and information. The student is expected to:	(C) investigate measures such as passwords or virus detection/prevention to protect computer systems and databases from unauthorized use and tampering	(iv) investigate measures to protect databases from tampering		
(5) Digital citizenship. The student explores and understands safety, legal, cultural, and societal issues relating to the use of technology and information. The student is expected to:	(D) understand the safety risks associated with the use of social networking sites			
(5) Digital citizenship. The student explores and understands safety, legal, cultural, and societal issues relating to the use of technology and information. The student is expected to:	(E) discuss the impact of computing and computing related advancements on society	(i) discuss the impact of computing on society		

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(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:	(F) compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices	(ii) compare the various processing devices		
(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:	(F) compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices	(iii) compare the various output devices		
(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:	(F) compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices	(iv) compare the various primary/secondary storage devices		
(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:	(F) compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices	(v) contrast the various input devices		
(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:	(F) compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices	(vi) contrast the various processing devices		
(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:	(F) compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices	(vii) contrast the various output devices		
(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:	(F) compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices	(viii) contrast the various primary/secondary storage devices		

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(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:	(F) compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices	(ix) appropriately use the various input devices		
(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:	(F) compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices	(x) appropriately use the various processing devices		
(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:	(F) compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices	(xi) appropriately use the various output devices		
(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:	(F) compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices	(xii) appropriately use the various primary/secondary storage devices		