

CompuScholar, Inc.

Correlations to the Texas Essential Knowledge and Skills (TEKS): Fundamentals of Computer Science

Texas Course Details:

Chapter	Chapter 127. Texas Essential Knowledge and Skills for CTE
Subchapter	Subchapter O. STEM
Course	§127.761. Fundamentals of Computer Science (One Credit)
Standards Link	Subchapter O (STEM)
TEKS Coverage	100%

CompuScholar Course Details:

Course Title:	Computer Science Foundations
Course ISBN:	978-1-946113-02-3
Course Year:	2023

2-Semester Scheduling

Texas districts can opt to meet 100% of TEKS for "**Fundamentals of Computer Science**" in 1 or 2 semesters. Districts on a **2-semester schedule** can simply follow the **Introductory Computer Science** syllabus, including the core chapters and optional units listed below.

Chapters 1-20 (Core Content)
 Chapters 23-25 (Web Design Unit)
 Chapters 26, 28 (Computer Skills Unit)
 Chapter 29 (Computer Careers Unit)

1-Semester Scheduling

Districts on a **1-semester (90-hour) schedule** can meet 100% of TEKS by covering the resources listed below. Where specific lessons are cited, complete only those lessons and quizzes but skip the chapter tests and activities. Where chapters are cited, all chapter lessons, quizzes, tests, and activities are included.

Chapter 1, Lessons 2, 3, Activity	Chapter 18, Lessons 1, 2
Chapters 3, 4, 5, 6, 7, 8	Chapter 19, Lessons 1, 2, 3
Chapter 9, Lessons 1, 2, Activity	Chapter 20, Lesson 1
Chapter 10, Lessons 2, 3, 4, Activity	Chapters 23, 24, 25, 26
Chapter 14	Chapter 28, Lesson 1
Chapter 15, Lesson 3, Activity	Chapter 29, Lesson 1, Activity

Course Standards

Note 1: Citation(s) listed may represent a subset of the instances where objectives are met throughout the course.

Note 2: Citation(s) for a "Lesson" refer to the "Lesson Text" elements and associated "Activities" within the course unless otherwise noted. The "Instructional Video" components are supplements designed to introduce or re-enforce the main lesson concepts, and the Lesson Text contains full details.

Knowledge and Skills Statement: (1) Employability. The student identifies various employment opportunities in the computer science field. The student is expected to:	
Student Expectation	CITATION(S)
(1.A) identify job opportunities and accompanying job duties and tasks;	Chapter 29, Lesson 1
(1.B) examine the role of certifications, resumes, and portfolios in the computer science profession;	Chapter 29, Lesson 1
(1.C) employ effective technical reading and writing skills;	Chapter 1 Activity Chapter 14, Lesson 3 & Activity 1
(1.D) employ effective verbal and non-verbal communication skills;	Chapter 14, Lesson 1, 2, 3 Chapter 14, Activity 1
(1.E) solve problems and think critically;	Chapter 7, Lessons 2, 3 Chapter 14, Lesson & Activity 4
(1.F) demonstrate leadership skills and function effectively as a team member;	Chapter 14, Lessons 1, 2 Chapter 14, All Activities
(1.G) demonstrate an understanding of legal and ethical responsibilities in relation to the field of computer science;	Chapter 19, Lessons 1, 2, 3
(1.H) demonstrate planning and time-management skills; and	Chapter 14, Lesson 2 Chapter 14, All Activities
(1.I) compare university computer science programs	Chapter 29, Lesson 1

Knowledge and Skills Statement: (2) Creativity and innovation. The student develops products and generates new knowledge, understanding, and skills. The student is expected to:	
Student Expectation	CITATION(S)
(2.A) investigate and explore various career opportunities within the computer science field and report findings through various media;	Chapter 29, Lesson 1 Chapter 29 Activity
(B) create algorithms for the solution of various problems;	Chapter 15, Lesson 1 Chapter 15 Activity
(2.C) discuss methods and create and publish web pages using a web-based language such as HTML, Java Script, or XML; and	Chapters 23-25
(2.D) use generally accepted design standards for spacing, fonts, and color schemes to create functional user interfaces, including static and interactive	Chapters 23-25

Knowledge and Skills Statement: (3) 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:	
Student Expectation	CITATION(S)
(3.A) seek and respond to advice or feedback from peers, educators, or professionals when evaluating problem solutions;	Chapter 7, Lesson 2
(3.B) debug and solve problems using reference materials and effective strategies;	Chapter 7, Lessons 1 - 3 Chapter 7 Activity
(3.C) publish information in a variety of ways such as print, monitor display, web pages, or video.	Activities in Python Chapters Chapters 23-25

Knowledge and Skills Statement: (4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:	
Student Expectation	CITATION(S)
(4.A) demonstrate the ability to insert external standalone objects such as scripts or widgets into web pages;	Chapter 25, Lesson 4
(4.C) communicate an understanding of binary representation of data in computer systems, perform conversions between decimal and binary number systems, and count in binary number systems;	Chapter 10, Lesson 4
(4.D) identify a problem's description, purpose, and goals;	Chapter 14, Lesson 2-3 Chapter 14, Act #1
(4.E) demonstrate coding proficiency in a programming language by developing solutions that create stories, games, and animations;	Chapter 5, Lesson 2 Chapter 10 Activity Chapter 25 Activity
(4.F) identify and use the appropriate data type to properly represent the data in a program problem solution;	Chapter 4, Lesson 2-4 Chapter 4 Activity
(4.G) communicate an understanding of and use variables within a programmed story, game, or animation;	Chapter 7 Chapter 10
(4.H) use arithmetic operators to create mathematical expressions, including addition, subtraction, multiplication, real division, integer division, and modulus division;	Chapter 4, Lesson 3
(4.I) communicate an understanding of and use sequence within a programmed story, game, or animation;	Chapter 7 Chapter 10
(4.J) communicate an understanding of and use conditional statements within a programmed story, game, or animation;	Chapter 6 Chapter 6 Activity
(4.K) communicate an understanding of and use iteration within a programmed story, game, or animation;	Chapter 8 Chapter 8 Activity
(4.M) use random numbers within a programmed story, game, or animation; and	Chapter 10 Activity
(4.N) test program solutions by investigating intended outcomes.	Chapter 14, Lesson 4 Chapter 7

Knowledge and Skills Statement: (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:	
Student Expectation	CITATION(S)
(5.A) discuss privacy and copyright laws and model ethical acquisition of digital information by citing sources using established methods;	Chapter 19, Lesson 2
(5.B) compare various non-copyright asset sharing options such as open source, freeware, and public domain;	Chapter 19, Lesson 3
(5.C) demonstrate proper digital etiquette and knowledge of acceptable use policies when using networks;	Chapter 19, Lesson 1
(5.D) explain the value of strong passwords and virus detection and prevention for privacy and security;	Chapter 20, Lesson 1
(5.E) discuss and give examples of the impact of computing and computing-related advancements on society; and	Chapter 18, Lesson 1-2
(5.F) analyze how electronic media can affect reliability of information.	Chapter 28, Lesson 3

Knowledge and Skills Statement: (6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:	
Student Expectation	CITATION(S)
(6.A) identify and explain the function of basic computer components, including a central processing unit (CPU), storage, and peripheral devices;	Chapter 1, Lesson 2
(6.B) use system tools, including appropriate file management;	Chapter 26
(6.C) compare different operating systems;	Chapter 26
(6.E) describe the differences between an application and an operating system; and	Chapter 1, Lesson 3
(6.F) use various input, processing, output, and primary/secondary storage devices.	Chapter 1, Lesson 2 Chapter 1 Activity