

CompuScholar, Inc.

Alignment to the Tennessee K-8 Computer Science Standards

Tennessee Course Details:

Course Name:	K-8 Computer Science Standards
Primary Cluster:	Digital Readiness
Course Code:	N/A
Credit:	1
Grade Level:	7 - 8
Standards Link:	Digital Readiness / K-8 Computer Science Standards (March 2018)

CompuScholar Course Details:

Course Title:	Digital Savvy
Course ISBN:	978-0-9887070-8-5
Course Year:	2020

Course Title:	Python Programming
Course ISBN:	978-1-946113-00-9
Course Year:	2020

Description

The Tennessee K-8 Computer Science standards are organized into 6 major strands. The first 5 strands deal with Digital Readiness, while the 6th strand covers Coding and Computer Programming (CCP). Elements from our **Digital Savvy** and **Python Programming** courses can be used to meet these Digital Readiness and CCP requirements. In some cases, both courses support overlapping skills, and teachers can select the most appropriate chapters to use in their environment.

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.

Syllabus and Pacing Guide to Meet State Requirements

In order to meet "K-8 Computer Science" requirements for 7th and 8th grades, CompuScholar recommends using the following chapters of our "**Digital Savvy**" course over during the 7th and 8th grade middle school experience. Schools desiring a more formal coding experience with a text-based language can additionally or alternatively use up to a full semester of material from our "**Python Programming**" course.

Digital Savvy**Python Programming**

Chapter 1	Chapter 1
Chapter 3	Chapter 2
Chapter 4	Chapter 3
Chapter 5	Chapter 4
Chapter 6	Chapter 5
Chapter 7	Chapter 6
Chapter 8	Chapter 7
Chapter 9	Chapter 8
Chapter 10	Chapter 9
Chapter 11	Chapter 10 (advanced)
Chapter 12	Chapter 11 (advanced)
Chapter 13	Chapter 12 (advanced)
Chapter 14	Chapter 13 (advanced)
Chapter 16	Suppl. Chapter 2
Chapter 17	Suppl. Chapter 3
Chapter 18	Suppl. Chapter 4
Chapter 22	
Chapter 23	
Suppl. Chapter 1	
Suppl. Chapter 2	
Suppl. Ch 3, Lessons 1, 3	

Computer Science Standards

Foundational Concepts and Operations (FCO)	DIGITAL SAVVY CITATION(S)	PYTHON PROGRAMMING CITATION(S)
FCO.1 Demonstrate fundamental technology skills (e.g., turn on and login to device).	Logins performed daily to access online course material	
FCO.2 Interact with a device using a pointing tool such as a mouse, tactile sensor, or other input.	Interaction with computing devices performed daily to access online courses	
FCO.3 Navigate to applications and documents by using desktop icons, windows, and menus.	Chapter 3, Lesson 3 Chapter 4, Lessons 1,2	
FCO.4 Use age-appropriate online tools and resources (e.g., tutorial, assessment, web browser).	Online course elements (videos, web pages, quizzes) accessed daily through a web browser	
FCO.5 Demonstrate fundamental keyboarding skills.	Suppl. Ch 3, Lesson 1	
FCO.6 Select and use appropriate word processing, spreadsheets, and multimedia applications.	Chapters 9, 10, 11	
FCO.7 Use menu, tool bar, and editing functions (e.g., font/size/style/line spacing, margins, spell check) to format, edit, save, and print a document.	Chapter 9, Lessons 2-4	
FCO.8 Identify and solve routine hardware and software problems that occur during routine usage.	Chapter 5	

Communication and Collaboration (CC)	DIGITAL SAVVY CITATION(S)	PYTHON PROGRAMMING CITATION(S)
CC.1 Interact with peers, experts, and others using a variety of digital tools and devices.	Chapters 16 - 18 Chapters 14, 25	Chapter 13 Suppl. Ch. 3, Lesson 5
CC.2 Communicate information and ideas effectively to multiple audiences using a variety of media and formats. (e.g., reports, research papers, presentations, newsletters, Web sites, podcasts, blogs), citing sources.	Chapter 7, Lesson 3 Chapters 9, 10, 11 Chapter 14	
CC.3 Contribute, individually or as part of a team, to work to identify and solve authentic problems or produce original works using a variety of digital tools and devices.	Chapters 14, 25	Chapter 13

Analytical and Innovative Thinking (AIT)	DIGITAL SAVVY CITATION(S)	PYTHON PROGRAMMING CITATION(S)
AIT.1 Identify and define problems and form significant questions for investigation.	Chapter 13, Lesson 2 Chapters 14, 25	Chapter 13 Suppl. Ch. 3, Lesson 3
AIT.2 Develop a plan to use technology to find a solution and create projects.	Chapter 13, Lesson 2 Chapters 14, 25	Chapter 13
AIT.3 Determine the best technology and appropriate tool to address a variety of tasks and problems.	Chapters 9, 10, 11 Chapters 14, 25	Chapter 1, Lessons 1-2
AIT.4 Use multiple processes and diverse perspectives to explore alternative solutions.	Chapters 14, 25	Chapter 13
AIT.5 Evaluate the accuracy, relevance, appropriateness, and bias of electronic information sources.	Chapter 7, Lesson 3	
AIT.6 Collect, organize, analyze, and interpret data to identify solutions and/or make informed decisions.	Chapter 7 Chapters 14, 25 Suppl. Ch 2, Lesson 5	Chapter 13 Suppl. Chapter 4
AIT.7 Infer and predict or propose relationships with data.	Suppl. Ch 2, Lesson 1 Suppl. Ch 2, Lesson 3 Suppl. Ch 2, Lesson 5	Suppl. Ch. 3, Lessons 1-2
AIT.8 Identify that various algorithms can achieve the same result and determine the most efficient sequence.	Chapter 22, Lesson 3 Suppl. Ch 2, Lesson 2	Suppl. Ch. 3, Lesson 3

Digital Citizenship (DC)	DIGITAL SAVVY CITATION(S)	PYTHON PROGRAMMING CITATION(S)
DC.1 Advocate, demonstrate and routinely practice safe, legal, and responsible use of information and technology.	Chapter 8	Suppl. Chapter 2
DC.2 Exhibit a positive mindset toward using technology that supports collaboration, learning, and productivity.	Positive use of technology demonstrated throughout each course	
DC.3 Exhibit leadership for digital citizenship.	Chapter 8, Lesson 4 Suppl. Chapter 1	Suppl. Chapter 2 Suppl. Chapter 4

DC.4 Recognize and describe the potential risks and dangers associated with various forms of online communications (e.g., cell phones, social media, digital photos).	Chapter 8, Lesson 1 Chapters 17 - 18	
DC.5 Explain responsible uses of technology and digital information; describe possible consequences of inappropriate use such as copyright infringement and piracy.	Chapter 8, Lessons 4-5	Suppl. Ch. 2, Lessons 1-2

Information Storage and Access (ISA)	DIGITAL SAVVY CITATION(S)	PYTHON PROGRAMMING CITATION(S)
ISA.1 Enter, organize, and synthesize information in a variety of platforms. (e.g., saving, organizing, and storing word documents and spreadsheets)	Chapters 9, 10, 11, 12 Chapters 14, 25	
ISA.2 Identify and use a variety of storage media and demonstrate an understanding of the rationale for using a certain medium for a specific purpose.	Chapter 4	
ISA.3 Plan and use strategies to access information and guide inquiry.	Chapter 7 Chapters 14, 25	
ISA.4 Locate information from a variety of sources.	Chapter 7 Chapters 14, 25	
ISA.5 Perform basic searches on databases to locate information.	Chapter 12	
ISA.6 Select appropriate information sources and digital tools.	Chapter 7 Chapters 9, 10, 11, 12	Chapter 13
ISA.7 Use age appropriate technologies to locate, collect, organize content from media collection(s) for specific purposes, such as citing sources.	Chapter 7 Chapters 14, 25	
ISA.8 Describe the rationale for various security measures when using technology.	Chapter 8, Lessons 2-3	Suppl. Ch. 2, Lesson 3

Coding and Computer Programming (CCP) – Grade 6-8	DIGITAL SAVVY CITATION(S)	PYTHON PROGRAMMING CITATION(S)
CCP.1 Identify the advantages, disadvantages and unintended consequences of computing devices.	Chapter 1 Suppl. Chapter 1 Suppl. Ch. 3, Lesson 3	
CCP.2 Analyze the relationship between human and computer interactions to improve the device. For example, student A watches student B use a simple communication device. Student A updates the tool for improved use.	Chapter 14, Activity 3 Chapter 25, Activity 3	Chapter 13, Activity 4
CCP.3 Identify and describe multiple considerations and tradeoffs when designing or selecting computing system, such as functionality, cost, size, speed, accessibility, and aesthetics.	Chapter 1, Lesson 2	

CCP.4 Construct optimized models of computing systems.	Chapter 1, Lesson 2	
CCP.5 Create structured processes to troubleshoot problems with computing systems.	Chapter 5, Lesson 3	Chapter 5
CCP.6 Define protocols in relation to a set of rules.	Chapter 6, Lesson 6 Suppl. Ch. 2, Lesson 3	Suppl. Ch. 3, Lesson 2
CCP.7 Construct protocols that can be used to share information between people or devices. For example, a binary communication protocol using lights.	Chapter 6, Lesson 6 Suppl. Ch. 2, Lesson 3	Suppl. Ch. 3, Lesson 2
CCP.8 Compare the relative strengths and weaknesses of unique protocols considering security, speed, and reliability.	Chapter 6, Lesson 6 Chapter 16	
CCP.9 Create models of networks that include packets and domain name server (DNS).	Chapter 6	
CCP.10 Identify steps to ensure security measures are in place to safeguard online information.	Chapter 8, Lesson 1 Chapter 18, Lesson 4	
CCP.11 Create cyphers to encrypt data that can be transferred between users.	Suppl. Ch. 2, Lesson 3	Suppl. Ch. 3, Lesson 2
CCP.12 Explain how encryption can be used to safeguard data that is sent across a network.	Chapter 8, Lessons 2-3 Suppl. Ch. 2, Lesson 3	Suppl. Ch. 3, Lesson 2
CCP.13 Evaluate the accuracy and precision of various forms of data collection.	Chapter 7, Lesson 3 Chapters 14, 25 Suppl. Ch. 2, Lesson 5	
CCP.14 Identify and define the limiting factors to specific forms of data collection.	Suppl. Ch. 2, Lesson 5	
CCP.15 Describe how different formats of stored data represent tradeoffs between quality and size.	Suppl. Ch. 2, Lesson 3	Chapter 2, Lesson 1
CCP.16 Represent data using different encoding schemes, such as binary, Unicode, Morse code, shorthand, student-created codes.	Suppl. Ch. 2, Lesson 3	Suppl. Ch. 3, Lesson 2
CCP.17 Explain the processes used to collect, transform, and analyze data to solve a problem using computational tools.	Chapter 10	
CCP.18 Revise variables and constants in computational models to more accurately reflect real-world systems. For example in an ecosystem model, introducing predators as a new variable.	Suppl. Ch. 2, Lesson 5	
CCP.19 Solicit and integrate peer feedback as appropriate to develop or refine a program.	Chapter 14, Activity 3 Chapter 25, Activity 3	Chapter 13, Activity 4
CCP.20 Compare different algorithms that may be used to solve the same problem in terms of their speed, clarity, and size.	Suppl. Ch. 2, Lesson 2	Suppl. Ch. 3, Lesson 3
CCP.21 Provide proper attribution when code is borrowed or built upon.	Chapter 8, Lesson 5	Suppl. Ch. 2, Lesson 2
CCP.22 Interpret the flow of execution of algorithms and predict their outcomes.	Chapter 22, Lesson 3 Suppl. Ch 2, Lesson 2	Suppl. Ch. 3, Lesson 3

CCP.23 Design, develop, and present computational artifacts such as mobile applications that address social problems both independently and collaboratively.	Chapter 25	Chapter 13
CCP.24 Develop programs, both independently and collaboratively, that include sequences with nested loops and multiple branches. (Clarification: At this level, students may use block- based and/or text-based programming languages.)	Chapter 22, Lesson 3 Chapter 23, Lessons 2-3	Chapters 4, 6, 13
CCP.25 Identify the purpose of variables in relation to programming	Chapter 23, Lesson 1	Chapter 2
CCP.26 Create variables that represent different types of data and manipulate their values.	Chapter 23, Lesson 1	Chapter 2
CCP.27 Define and use procedures that hide the complexity of a task and can be reused to solve similar tasks. (Clarification: Students use and modify, but do not necessarily create, procedures with parameters.)		Chapter 9
CCP.28 Decompose a problem into parts and create solutions for each part.	Chapter 22, Lesson 3 Suppl. Ch 2, Lesson 2	Chapter 9 Suppl. Ch. 3, Lesson 3
CCP.29 Use an iterative design process (e.g., define the problem, generate ideas, build, test, and improve solutions) to solve problems, both independently and collaboratively.	Chapters 22, 23, 25	Chapter 13
CCP.30 Analyze the positive and negative impacts of computing technology.	Suppl. Chapter 1	
CCP.31 Recognize there are tradeoffs in computing.	Suppl. Chapter 1	
CCP.32 Explain how social interactions can allow for multiple viewpoints.	Suppl. Ch 1, Lesson 1	
CCP.33 Demonstrate an understanding of digital security.	Chapter 8 Suppl. Ch. 1, Lesson 2	Suppl. Ch. 2, Lessons 3-4