CompuScholar, Inc.

Alignment to South Carolina Fundamentals of Computing (5023) Standards

South Carolina Course Details:

Course Title:	5023 - Fundamentals of Computing
Grade Level:	9 - 12
Standards Link:	Fundamentals of Computing (March 2023 Version)

CompuScholar Course Details:

Course Title:	Digital Savvy
Course ISBN:	978-0-9887070-8-5
Course Year:	2024

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 reinforce the main lesson concepts, and the Lesson Text contains full details.

Note 3: "Supplemental" or "Suppl." citation(s) refer to Supplemental chapters included at the end of the course.

South Carolina Course Description

Fundamentals of Computing is designed to introduce students to the field of computer science through an exploration of a variety of computing topics. [See Standards Link above for more...]

South Carolina Course Standards

A. SAFETY	CITATION(S)
1. Review school safety policies and procedures.	Chapter 8, Lesson 1
	Chapter 18, Lesson 4
	Chapter 24, Lesson 3
2. Review classroom safety rules and procedures.	Chapter 8, Lesson 1
	Chapter 18, Lesson 4
	Chapter 24, Lesson 3
3. Review safety procedures for using equipment in the classroom.	Chapter 8, Lesson 1
	Chapter 18, Lesson 4
	Chapter 24, Lesson 3
 Identify major causes of work-related accidents in office environments. 	Chapter 24, Lesson 3
5. Demonstrate safety skills in an office/work environment.	Chapter 24, Lesson 3
	Suppl. Chapter 1, Lesson 2

6. Discuss computer crimes, terms of use, and legal issues such as copyright laws, fair use laws, and ethics pertaining to scanned and downloaded clip art images, Creative Commons, photographs, documents, video, recorded sounds and music, trademarks, and other elements for use in Web publications.	Chapter 8, Lessons 2, 4, 5
 Identify netiquette including the use of email, social networking, blogs, texting, and chatting. 	Chapter 8, Lesson 4 Chapter 16, Lessons 1, 2 Chapters 17, 18
8. Describe ethical and legal practices in business professions such as safeguarding the confidentiality of business-related information.	Chapter 8, Lessons 2, 3, 4
9. Discuss the importance of cyber safety and the impact of cyber bullying.	Chapter 8, Lessons 1, 4 Chapter 17, Lesson 1 Chapter 18, Lesson 4

B. STUDENT ORGANIZATIONS	CITATION(S)
1. Identify the purpose and goals of a Career and Technology Student	Suppl. Chapter 3, Lesson 2
Organization (CTSO).	
2. Explain how CTSOs are integral parts of specific clusters, majors, and/or	Suppl. Chapter 3, Lesson 2
courses.	
3. Explain the benefits and responsibilities of being a member of a CTSO.	Suppl. Chapter 3, Lesson 2
4. List leadership opportunities that are available to students through	Suppl. Chapter 3, Lesson 2
participation in CTSO conferences, competitions, community service,	
philanthropy, and other activities.	
5. Explain how participation in CTSOs can promote lifelong benefits in other	Suppl. Chapter 3, Lesson 2
professional and civic organizations.	

C. TECHNOLOGY KNOWLEDGE	CITATION(S)
1. Demonstrate proficiency and skills associated with the use of technologies	Chapters 7, 9, 10, 11, 15, 16
that are common to a specific occupation (e.g. keying speed).	(Common workplace apps)
2. Identify proper netiquette when using e-mail, social media, and other	Chapter 8, Lesson 4
technologies for communication purposes.	Chapter 16, Lessons 1, 2
	Chapters 17, 18
3. Identify potential abuse and unethical uses of laptops, tablets, computers,	Chapter 8, Lessons 1 - 4
and/or networks.	Chapter 18, Lesson 4
	Suppl. Chapter 1, Lesson 2
4. Explain the consequences of social, illegal, and unethical uses of	Chapter 8
technology (e.g., cyberbullying, piracy; illegal downloading; licensing	Chapter 18, Lesson 4
infringement; inappropriate uses of software, hardware, and mobile devices	Suppl. Chapter 1, Lesson 2
in the work environment).	

5. Discuss legal issues and the terms of use related to copyright laws, fair use laws, and ethics pertaining to downloading of images, photographs, Creative Commons, documents, video, sounds, music, trademarks, and other elements for personal and professional use.	Chapter 8, Lessons 2, 4, 5
6. Describe ethical and legal practices of safeguarding the confidentiality of business-related information.	Chapter 8, Lessons 2, 3, 4
7. Describe possible threats to a laptop, tablet, computer, and/or network and methods of avoiding attacks.	Chapter 8, Lessons 1 - 4 Chapter 18, Lesson 4 Suppl. Chapter 1, Lesson 2
8. Evaluate various solutions to common hardware and software problems.	Chapter 5, Lesson 3

D. PERSONAL QUALITIES AND EMPLOYABILITY SKILLS	CITATION(S)
1. Demonstrate creativity and innovation.	Chapter 13, Lessons 1, 3
	Chapter 24, Lesson 2
	Chapters 14, 25 (Team Projects)
2. Demonstrate critical thinking and problem-solving skills.	Chapter 13, Lessons 1, 3
	Chapter 24, Lesson 2
	Chapters 14, 25 (Team Projects)
3. Demonstrate initiative and self-direction.	Chapter 13, Lessons 1, 3
	Chapter 24, Lesson 2
	Chapters 14, 25 (Team Projects)
4. Demonstrate integrity.	Chapter 13, Lessons 1, 3
	Chapter 24, Lesson 2
	Chapters 14, 25 (Team Projects)
5. Demonstrate work ethic.	Chapter 13, Lessons 1, 3
	Chapter 24, Lesson 2
	Chapters 14, 25 (Team Projects)
6. Demonstrate conflict resolution skills.	Chapter 13, Lessons 1, 3
	Chapter 24, Lesson 2
	Chapters 14, 25 (Team Projects)
7. Demonstrate listening and speaking skills.	Many opportunities throughout
	the course, e.g.:
	Chapter 11, Lesson 6
	Chapter 13, Lessons 1, 3
	Chapter 24, Lesson 2
	Chapters 14, 25 (Team Projects)
8. Demonstrate respect for diversity.	Chapter 13, Lessons 1, 3
	Chapter 24, Lesson 2
	Chapters 14, 25 (Team Projects)
	Suppl. Chapter 1, Lessons 1, 3
9. Demonstrate customer service orientation.	Chapter 24, Lesson 2

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10. Demonstrate teamwork.	Chapter 13, Lessons 1, 3
	Chapter 24, Lesson 2
	Chapters 14, 25 (Team Projects)

E. PROFESSIONAL KNOWLEDGE	CITATION(S)
1. Demonstrate global or "big picture" thinking.	Chapter 13, Lesson 2 Chapters 14 & 25, Activity 1 Suppl. Chapter 1, Lesson 1
2. Demonstrate career and life management skills and goal-making.	Chapter 13, Lesson 2 Chapter 14, Activity 1 Chapter 25, Activity 1 Chapter 24, Lesson 1 / Activity
 Demonstrate continuous learning and adaptability skills to changing job requirements. 	Chapter 13, Lessons 1, 3 Chapter 24, Lesson 1 Chapters 14, 25 (Team Projects)
4. Demonstrate time and resource management skills.	Chapter 13, Lesson 2 Chapter 24, Lesson 2 Chapters 14, 25
5. Demonstrates information literacy skills.	Chapters 7, 10, 12
6. Demonstrates information security skills.	Chapter 8, Lessons 1 - 4 Chapter 18, Lesson 4 Suppl. Chapter 1, Lesson 2
7. Demonstrates information technology skills.	Throughout the course, e.g. Chapters 3, 4, 5, 6
8. Demonstrates knowledge and use of job-specific tools and technologies.	Chapters 7, 9, 10, 11, 15, 16 (Common workplace apps)
9. Demonstrate job-specific mathematics skills.	Chapter 10, Lesson 6 Chapter 10, Activity 2 Chapter 23, Lessons 1, 2 Chapter 23 Activity Suppl. Chapter 2, Lessons 1, 3
10. Demonstrates professionalism in the workplace.	Chapter 13, Lessons 1, 3 Chapter 24, Lesson 2 Chapters 14, 25 (Team Projects)
11. Demonstrate reading and writing skills.	Many opportunities, e.g. Chapter 2, Lesson 5 Chapter 7 Activity Chapter 14, Activity 1
12. Demonstrates workplace safety.	Chapter 8, Lesson 1 Chapter 18, Lesson 4 Chapter 24, Lesson 3

F. ETHICAL, LEGAL & SOCIAL ISSUES OF COMPUTING	CITATION(S)
1. Examine the consequences resulting from issues involving ethics around	Chapters 8, 17, 18
security, privacy, copyright, fair use, intellectual property, social media and	
licensing.	
2. Explain the importance of Acceptable Use Policies.	Chapter 8, Lesson 4
3. Explain the importance of data security and physical security.	Chapter 8, Lessons 2, 3
4. Explain the concepts of confidentiality, integrity, and availability (CIA).	Chapter 8, Lesson 2
5. Identify computing threats (e.g., spyware, adware, malware, viruses,	Chapter 8, Lesson 1
ransomware, phishing, hacking, software piracy, identity theft, etc.) and their potential impacts on society.	Suppl. Chapter 1, Lesson 2
6. Explain the concept of encryption and how it is used on a daily basis.	Chapter 8, Lesson 3
	Suppl. Chapter 2, Lesson 3
7. Explain the social implications of constant data collection via Wi-Fi-	Chapter 8, Lesson 1
enabled devices (Internet of Things [IoT]).	Chapter 18, Lesson 4

G. PROBLEM SOLVING AND COMPUTING	CITATION(S)
1. Identify and define the functional components of a computing device	Chapter 1, Lessons 1, 2, 3
(input devices, output devices, processor, operating system, software	Chapter 2, Lessons 1, 2
applications, memory, storage, etc.)	
2. Describe how software and hardware interact.	Chapter 1, Lesson 2
	Chapter 2, Lesson 1
3. Describe how computer programs and apps can be used to solve various	Chapter 5, Lessons 2, 3
problems (e.g., desktop, mobile, enterprise).	Chapter 7, Lesson 1
	Chapters 9, 10, 11, 12, 16
4. Solve a problem by applying appropriate problem solving techniques	Chapter 5, Lesson 3
(understand the problem, plan the solution, carry out the plan, review and	Chapter 13, Lessons 2, 3
discuss).	Chapters 14, 25 / Activity 3

H. FUNDAMENTALS OF WEB DESIGN	CITATION(S)
1. Evaluate the results of Internet searches and the reliability of information found on Web sites.	Chapter 7, Lessons 2, 3
2. Describe how Web sites are used to communicate and exchange data.	Chapter 6, Lessons 4, 6 Chapters 16, 17, 18, 19, 20, 21
3. Plan a web page considering subject, devices, audience, layout, color, links and graphics.	Chapter 20, Lesson 3
 Create a web page that contains a variety of HTML elements (e.g., hyperlinks, ordered and unordered lists, images, headings, paragraph). 	Chapters 19, 20, 21

5. Create and attach a stylesheet that includes a variety of CSS rule sets to	Chapter 20, Lessons 2, 3
format HTML elements used to organize web page content.	(Style rules are inline and not
	external CSS)
6. Incorporate digital media in accordance with copyright and fair use laws,	Chapter 21, Lesson 2
and ethics pertaining to downloading of images, photographs, Creative	Chapter 21 Activity
Commons, documents, video, sounds, music, trademarks, and other	
elements for personal and professional use.	

I. FUNDAMENTALS OF PROGRAMMING	CITATION(S)
1. Classify application software according to its primary function (e.g.,	Chapter 2, Lessons 1, 2
operating systems, productivity, entertainment, system).	
2. Demonstrate an understanding of algorithms and their practical	Chapter 22, Lesson 3
applications.	Chapter 23, Lessons 2, 3, Activity
3. Create, evaluate, and adjust algorithms to solve a variety of problems	Chapter 22, Lesson 3
using flowcharts and/or pseudocode.	Chapter 23, Lessons 2, 3, Activity
4. Analyze and explain how a particular program functions.	Chapter 22, Lesson 3
	Chapter 23, Lessons 2, 3, Activity
5. Solve problems of increasing complexity using visual block-based	Chapters 22, 23, 25
programming individually and collaboratively.	
6. Write code that uses variables, events, functions, operators (i.e.	Chapter 23 (excluding functions,
arithmetic, relational, logical), conditional control structures (e.g., if, if-else)	events)
and repetition/iteration control structures (e.g., while, for).	
7. Differentiate between text, numerical and Boolean variables.	Chapter 23, Lesson 1
8. Implement pattern recognition to edit, compile/run, test, and debug a program.	Chapter 22, Lesson 3

J. FUNDAMENTALS OF COMPUTATIONAL DATA	CITATION(S)
1. Define and demonstrate how and why the binary system is used to	Chapter 1, Lesson 2 (RAM/ROM)
represent data in a computer (e.g., RAM, ROM, Peta-, Tera-, Giga-, Mega-	Suppl. Chapter 2, Lessons 1, 3
Kilo-, Hz, Bit, Byte, Binary, etc.)	
2. Describe how a picture, sound/song, and video are digitized and	Suppl. Chapter 2, Lesson 3
represented in a computer.	
3. Analyze the importance of data security and physical security.	Chapter 8, Lessons 1, 2, 3
4. Evaluate the concepts of confidentiality, integrity, and availability (CIA).	Chapter 8, Lesson 2
5. Apply the concept of encryption and decryption and how it is used on a	Chapter 8, Lessons 2, 3
daily basis.	Suppl. Chapter 2, Lesson 3
6. Collect data using various methods and transform it to make it more	Chapter 10, Lessons 5, 6, 7
useful and reliable.	Chapter 12, Lessons 4, 5
	Chapter 14, Activity 2

7. Develop a visual representation of data that assists in making a decision or	Chapter 10, Lesson 7
recommendation.	Chapter 14, Activity 2

L. COMPUTING CAREERS	CITATION(S)
1. Compare and contrast the five disciplines of computing: computer science,	Chapter 24, Lesson 1
software engineering, information technology, information systems, and	Chapter 24 Activity
computer engineering.	
2. Compare and contrast careers in computing along with their education,	Chapter 24, Lesson 1
training requirements, industry certifications and salary ranges.	Chapter 24 Activity
3. Identify gender, diversity and geographic related issues in computing.	Chapter 13, Lesson 1
	Suppl. Chapter 1, Lesson 1
4. Identify how computing is used in other career fields.	Chapter 24 Activity
	Suppl. Chapter 2, Lesson 5
	Suppl. Chapter 3, Lessons 3, 4
5. Identify key individuals and their impact on the field of computing.	Chapter 1, Lesson 4