

Skill Struck's alignment to

Tennessee K-12 Computer Science State Standards

Legend



= Standard aligned



= Not currently aligned









= Partially aligned (Parts of the standard we align with are highlighted in yellow)

Standard	Status
K.FC: Foundational Concepts 1) Locate letters and numbers on the keyboard. 2) Ask questions to conduct investigations, solve problems, and test solutions.	✓
K.AT: Algorithmic Thinking 1) Construct sequential events step-by-step in a logical order.	✓
K.DA: Data Analysis 1) Collect and organize data.	✓
K.NI: Networking and the Internet 1) Demonstrate age-appropriate methods for keeping personal information private.	✓
I.FC: Foundational Concepts 1) Navigate to applications and documents by using desktop icons, windows, and menus (e.g., open and close the browser window, find/use bookmark to store the website, recognize and use app on tablet). 2) Demonstrate use of input devices (e.g., mouse, keyboard).	✓



1.AT: Algorithmic Thinking 1) Identify and revise problem-solving strategies to solve a simple problem. 2) Classify and sort information into logical order with and/or without a computer. 3) Utilize digital tools to illustrate potential solutions to a problem.	✓
1.DA: Data Analysis 1) Interpret data displayed in a chart. 2) Organize data using similarities and differences.	✓
1.NI: Networking and the Internet 1) Advocate, demonstrate, and routinely practice safe, legal, and responsible use of information and technology.	✓
2.FC: Foundational Concepts 1) Use the menu and tool bar to navigate editing functions. 2) Use a variety of digital tools collaboratively to connect with other learners. 3) Ask questions to conduct investigations, solve problems, and test solutions. 4) Select technology or tools to solve a problem or design a solution.	✓
2.AT: Algorithmic Thinking 1) Plan and create a design document to illustrate thoughts, ideas, and stories in a sequential (step by-step) manner (e.g., story map, storyboard, sequential graphic organizer). 2) Compare and evaluate multiple ways to get a solution. 3) Categorize a group of items based on the attributes of actions of each item, with or without a computing device.	✓
2.DA: Data Analysis 1) Use data to make decisions, identify solutions, or determine relationships. 10 2) Use if/then reasoning to understand relationships with data.	✓

3) Collect, create, and organize data in a digital chart or graph.	
2.NI: Networking and the Internet 1) Identify appropriate and inappropriate behaviors for communicating in a digital environment. 2) Cite media and/or owners of digital content. 3) Create a research-based product using online digital tools.	⚠️
3.FC: Foundational Concepts 1) Locate and use appropriate online tools and resources to explore, research, and collect data on specific topics (e.g., applications, web browsers, and online tutorials). 2) Communicate key ideas and details collaboratively in a way that informs, persuades, and/or entertains, using digital tools. 3) Use basic features of digital tools to communicate key ideas and details in a way that informs and/or persuades.	✓
3.AT: Algorithmic Thinking 1) Discuss the design process and use digital tools to illustrate potential solutions. 2) Create an algorithm to solve a problem as a collaborative team. 3) Identify problems to solve and generate questions for investigations.	✓
3.DA: Data Analysis 1) Use data to highlight or propose cause-and-effect relationships, predict outcomes, or communicate an idea. 2) Describe examples of data sets or databases from everyday life.	⚠️
3.NI: Networking and the Internet 1) Advocate, demonstrate, and routinely practice safe, legal, and responsible use of information and technology. 2) Conduct basic keyword searches to produce valid, appropriate results, and evaluate results for accuracy, relevance, and appropriateness.	✓
3.PC: Programming Concepts	✓



1) Analyze a given list of sub-problems while addressing a larger problem. 2) Define a problem or task, decompose it into smaller sub-problems. 3) Use numbers or letters to represent information in another form.	
4.FC: Foundational Concepts 1) Demonstrate an appropriate level of proficiency in performing tasks using a range of digital devices. 2) Use age-appropriate online tools and resources (e.g., learning management systems, grade and assignment record, tutorial, assessment, web browser). 3) Create a simple digital model of a system and explain what the model shows and does not show.	✓
4.AT: Algorithmic Thinking 1) Examine logical reasoning to predict outcomes of an algorithm. 2) Use flowcharts to create a plan or algorithm. 3) Construct a basic system of numbers, letters, or symbols to represent information as a cipher.	✓
4.DA: Data Analysis 1) Collect, organize, analyze, and interpret data to identify solutions and/or make informed decisions. 2) Gather data to answer a question using a variety of computing and data visualization methods.	✓
4.NI: Networking and the Internet 1) Identify appropriate and inappropriate uses of communication technology and discuss the permanence of actions in the digital world. 2) Conduct advanced keyword searches to produce valid, appropriate results and evaluate results for accuracy, relevance, and appropriateness.	✓
4.PC: Programming Concepts 1) Test and debug a given program in a block-based visual programming environment using arithmetic operators, conditionals, and repetition in programs, in collaboration with others.	✓

4.IC: Impacts of Computing 1) Identify laws and tools which help ensure that users of varying abilities can access electronic and information technology. 2) Explain how hardware and applications can enable everyone, including people with disabilities, to do things they could not do otherwise.	
5.FC: Foundational Concepts 1) Use advanced features of digital tools and media-rich resources to communicate key ideas and details in a way that informs, persuades, and/or entertains.	
5.AT: Algorithmic Thinking 1) Analyze and improve an algorithm that includes sequencing and simple patterns with or without a computing device. 2) Create an algorithm to solve a problem while detecting and debugging logical errors within the algorithm. 3) Develop and recommend solutions to a given problem and explain the process to an audience.	
5.DA: Data Analysis 1) Manipulate data to answer a question using a variety of computing methods and tools to collect, organize, graph, analyze, and publish the resulting information. 2) Connect data from a simulation to real-life events.	
5.NI: Networking and the Internet 1) Explain responsible uses of technology and digital information; describe possible consequences of inappropriate use such as copyright infringement and piracy. 2) Apply copyright principles to real life scenarios.	
5.PC: Programming Concepts 1) Create simple animated stories or solve pre-existing problems using a precise sequence of instructions and simple loops, collaboratively or individually.	

2) Identify bugs (errors) in basic programming.	
5.IC: Impacts of Computing 1) Analyze the impact of social media on individuals, families, and society.	♦
MS.FC: Foundational Concepts 1) Analyze the advantages and limitations of existing computing devices to improve user experience. 2) Demonstrate skills in identifying and solving hardware and software problems that can occur during regular usage. 3) Apply computational thinking to a variety of problems across multiple disciplines. 4) Understand how collaboration is essential to computer science and apply collaborative skills to develop computational solutions.	✓
MS.AT: Algorithmic Thinking 1) Use clearly named variables of various data types to create generalized algorithms. 2) Create algorithms which include methods of controlling the flow of computation using “if...then... else” type conditional statements to perform different operations depending on the values of inputs. 3) Identify algorithms that make use of sequencing, selection, or iteration. 4) Describe how algorithmic processes and automation increase efficiency	✓
MS.DA: Data Analysis 1) Represent data using multiple encoding schemes, such as decimal, binary, Unicode, Morse code, Shorthand, student-created codes. 2) Refine computational models based on the data they have generated. 3) Collect, analyze, transform, and refine computational data to make it more useful and reliable.	✓
MS.NI: Networking and the Internet 1) Identify and employ appropriate troubleshooting techniques used to solve computing or connectivity issues. 19	✓

<p>2) Differentiate between secure and non-secure websites and applications including how they affect and use personal data.</p> <p>3) Describe the causes and effects of intellectual property as it relates to print and digital media, considering copyright, fair use, licensing, sharing, and attribution.</p> <p>4) Compare and contrast common methods of securing data and cybersecurity.</p> <p>5) Analyze different modes of social engineering and their effectiveness.</p>	
<p>MS.PC: Programming Concepts</p> <p>1) Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.</p> <p>2) Create procedures with parameters that hide the complexity of a task and can be reused to solve similar tasks.</p> <p>3) Seek and incorporate feedback from team members and users to refine a solution that meets user needs.</p> <p>4) Provide proper attribution when incorporating existing code, media, and libraries into original programs.</p> <p>5) Use the iterative design process to systematically test and refine programs to improve performance and eliminate errors.</p> <p>6) Document programs using comments and/or README files to make them easier to follow, test, and debug.</p> <p>7) Design a function using a programming language.</p>	
<p>MS.IC: Impacts of Computing</p> <p>1) Identify and evaluate the impacts computer science innovations have had on our society.</p> <p>2) Identify how computational systems are being used to collect and analyze information both public and private and understand the benefits and disadvantages of these systems for the user and developer.</p> <p>3) Cite evidence of the positive and negative effects of data permanence on personal and professional digital identity.</p> <p>4) Discuss digital globalization and Internet censorship.</p> <p>5) Investigate a variety of education pathways and career options that</p>	

utilize computational thinking and/or computer science skills across the state of Tennessee and the world.	
CS.AT: Algorithmic Thinking 1) Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables. 2) Systematically design and develop programs for broad audiences by incorporating feedback from users. 3) Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests. 4) Use effective communication and accurate computer science terminology to explain problem solving when completing a task.	✓
CS.DA: Data Analysis 1) Create computational models that represent the relationships among different elements of data collected from a phenomenon or process. 2) Utilize data to answer a question using a variety of computing and data visualization methods. 3) Use data analysis tools and techniques to identify patterns in data representing complex systems.	✓
CS.NI: Networking and the Internet 1) Explain the tradeoffs when selecting and implementing cybersecurity recommendations. 2) Identify laws regarding the use of technology and their consequences and implications. 3) Evaluate strategies to manage digital identity and reputation with awareness of the permanent impact of actions in a digital world. 4) Demonstrate how to apply techniques to mitigate effects of user tracking methods. 5) Show an understanding of the ramifications of end-user license agreements and terms of service associated with granting rights to personal data and media to other entities. 6) Recommend security measures to address various scenarios based on	✓

<p>factors such as efficiency, feasibility, and ethical impacts.</p> <p>7) Demonstrate a fundamental understanding of API (Application Programming Interface).</p>	
<p>CS.PC: Programming Concepts</p> <ol style="list-style-type: none"> 1) Choose and apply an appropriate iterative design process to systematically test and refine a program to increase performance. 2) Develop a plan to manage and assign data values of different types (strings, numeric, character, integer, and date) to a variable 3) Create and refine programs with Boolean conditionals to demonstrate the use of branches and logical operators. 4) Design and develop iterative programs that combine control structures, including nested loops and compound conditionals. 5) Create parameters to organize a program to make it easier to follow, test, and debug. 6) Incorporate existing code, media, and libraries into original programs, and give proper attribution. 7) Debug (identify and fix) errors in an algorithm or program that includes sequences and simple and complex loops following a two-step debugging process. 	
<p>CS.IC: Impacts of Computing</p> <ol style="list-style-type: none"> 1) Evaluate and debate the social and economic implications of computing in the context of safety, law, and ethics. <ol style="list-style-type: none"> a. Discuss the ethical ramifications of hacking and its impact on society. b. Explain the privacy concerns related to the collection and generation of data through automated processes that may not be evident to users (Bots, Chatbots, Spiders or Crawlers, Web Scraping, keyloggers etc.). c. Explain the positive and negative consequences that intellectual property laws can have on innovation. 2) Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields. 3) Research the impact of computing technology on possible education and career pathways. 	

4) Predict how computational innovations that have revolutionized aspects of our culture might evolve.	
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