



CS Standards Crosswalk with CSTA K-12 Computer Science Standards for State/District/Course Standards

<http://csta.acm.org/Curriculum/sub/K12Standards.html>

CS Standards Name	Techie Club (TECH CORPS)
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Please indicate whether your standards are: State <input type="checkbox"/> District <input type="checkbox"/> School <input type="checkbox"/> or Institution <input checked="" type="checkbox"/>	

CSTA Standard Level/ Grade Level	Strand	CS Standard	Aligned Standard	Techie Club Lesson Name
Level 1 (recommended for grades K–6)				
Level 1/ K-3	Computational Thinking	Recognize that software is created to control computer operations.	Students will use, learn and discuss inputs/outputs and processing in computer systems and how software controls computer operations.	Computers Inside and Out
Level 1/ K-3	Computational Thinking	Demonstrate how 0s and 1s can be used to represent information.	Supplemental Activity: Students will use the CS Unplugged activity to develop an understanding of how to use numbers to represent information.	
Level 1/ 3-6	Computational Thinking	Understand and use the basic steps in algorithmic problem-solving (e.g., problem statement and exploration, examination of sample instances, design, implementation and testing).	Students will analyze problems and develop algorithms to solve those problems. They will test and repeat the process until the problems are successfully resolved.	Scratch My Head
Level 1/	Computational	Develop a simple understanding of an	Students will develop an understanding of algorithms	Peanut Butter

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Level 1 (recommended for grades K–6)				
3-6	Thinking	algorithm (e.g., search, sequence of events or sorting) using computer-free exercises.	using a peanut butter and jelly sandwich activity.	and Jelly
Level 1/ 3-6	Computational Thinking	Demonstrate how a string of bits can be used to represent alphanumeric information.	Supplemental Activity: Students will use CS Unplugged to develop an understanding of how to use numbers to represent information.	
Level 1/ 3-6	Computational Thinking	Describe how a simulation can be used to solve a problem.		
Level 1/ 3-6	Computational Thinking	Make a list of sub-problems to consider while addressing a larger problem.	Students will analyze problems and develop algorithms to solve those problems. They will test and repeat the process until the problems are successfully resolved.	Scratch My Head
Level 1/ 3-6	Computational Thinking	Understand the connections between computer science and other fields.	Students will discover how technology is part of everyone's life and increase their awareness of technology-related jobs in their community.	Jobs & Technology
Level 1/ K-3	Collaboration	Gather information and communicate electronically with others with support from teachers, family members or student partners.		
Level 1/ K-3	Collaboration	Work cooperatively and collaboratively with peers, teachers and others using technology.	Students will use TECH CORPS' social networking platform to communicate with their peers. They will work cooperatively and collaboratively to develop and implement their final projects for the <i>Techieloka</i> competition.	Techieloka, See What I Can Do
Level 1/ 3-6	Collaboration	Use productivity technology tools (e.g., word processing, spreadsheet, presentation software) for individual and collaborative writing, communication and publishing activities.	Students will record all of their experiences and learning in a single video using pictures and videos taken throughout the year.	Movie Maker
Level 1/ 3-6	Collaboration	Use online resources (e.g., email, online discussions, collaborative web environments)	Students will use TECH CORPS' social network throughout the school year to communicate, discuss	



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Level 1 (recommended for grades K–6)				
		to participate in collaborative problem-solving activities for the purpose of developing solutions or products.	and collaborate on projects they work on.	
Level 1/ 3-6	Collaboration	Identify ways that teamwork and collaboration can support problem solving and innovation.	Students will work collaboratively on teams to prepare their final project.	Techieloka, See What I Can Do
Level 1/ K-3	Computing Practice and Programming	Use technology resources to conduct age-appropriate research.	Students will learn how to use different online resources to find and evaluate credible sources to gather information.	Internet Searching
Level 1/ K-3	Computing Practice and Programming	Use developmentally appropriate multimedia resources (e.g., interactive books and educational software) to support learning across the curriculum.	Students will use Peter Packet to learn about how the internet works and the hardware that exists behind the technology. Students will also learn how data travels through the internet.	How The Internet Works
Level 1/ K-3	Computing Practice and Programming	Create developmentally appropriate multimedia products with support from teachers, family members or student partners.	Students will create videos, web pages and posters to share what they have learned and achieved in Techie Club. Students will present their projects to their family and school community.	See What I Can Do
Level 1/ K-3	Computing Practice and Programming	Construct a set of statements to be acted out to accomplish a simple task (e.g., turtle instructions).	Students will develop an understanding of algorithms using the peanut butter and jelly sandwich activity.	Peanut Butter and Jelly
Level 1/ K-3	Computing Practice and Programming	Identify jobs that use computing and technology.	Students will discover how technology is a part of everyone's life and increase their awareness of technology-related jobs in their community.	Jobs & Technology, Careers in Technology
Level 1/ K-3	Computing Practice and Programming	Gather and organize information using concept-mapping tools.	Students will use storyboards to gather and organize the objects and blocks they will use to create their programs.	Scratch My Head
Level 1/ 3-6	Computing Practice and	Use technology resources (e.g., calculators, data collection probes, mobile devices, videos,	Students will learn the basics of how storage needs are calculated. Students will then apply this	Math Bits & Bytes

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Level 1 (recommended for grades K–6)				
	Programming	educational software and web tools) for problem-solving and self-directed learning.	knowledge to other aspects of computer storage.	
Level 1/ 3-6	Computing Practice and Programming	Use general-purpose productivity tools and peripherals to support personal productivity, remediate skill deficits and facilitate learning.	This lesson allows students to create simple worlds using a word processor. Students will manipulate images to create their worlds.	My World
Level 1/ 3-6	Computing Practice and Programming	Use technology tools (e.g., multimedia and text authoring, presentation, web tools, digital cameras and scanners) for individual and collaborative writing, communication and publishing activities.	Students will record all of their experiences and learning in a single video using pictures and videos taken throughout the year.	See What I Can Do
Level 1/ 3-6	Computing Practice and Programming	Gather and manipulate data using a variety of digital tools.	Students will record all of their experiences and learning in a single video using pictures and videos taken throughout the year.	See What I Can Do
Level 1/ 3-6	Computing Practice and Programming	Construct a program as a set of step-by-step instructions to be acted out (e.g., make peanut butter and jelly sandwich activity).	The peanut butter and jelly sandwich (or tie your shoe laces) activity exercises the students' thought processes in detail and introduces the concept of an algorithm.	Peanut Butter and Jelly
Level 1/ 3-6	Computing Practice and Programming	Implement problem solutions using a block based visual programming language.	Students will learn the basics of object-oriented programming using a highly user-friendly interface, in which program constructs are represented as puzzle pieces that only fit together when correct. There are animation, interactive art and gaming activities.	Scratch My Head
Level 1/ 3-6	Computing Practice and Programming	Use computing devices to access remote information, communicate with others in support of direct and independent learning and pursue personal interests.	Students will use TECH CORPS' social network throughout the school year to communicate, discuss and collaborate on projects. They will also use TECH CORPS' blogging platform to publish blogs on a variety of topics.	
Level 1/ 3-6	Computing Practice and	Navigate between webpages using hyperlinks and conduct simple searches using search	Students will learn proper search techniques and gain an understanding of the logic behind advance	Internet Searching

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	Programming	engines.	search functions. The students will also be able to practice their newfound skills.	
Level 1/ 3-6	Computing Practice and Programming	Identify a wide range of jobs that require knowledge or use of computing.	Jobs & Technology - Students will explore and learn about jobs in computing then create career posters following presentations by TECH CORPS volunteers/technology professionals.	Jobs & Technology, Careers in Technology, Making a Scientific Poster
Level 1/ 3-6	Computing Practice and Programming	Gather and manipulate data using a variety of digital tools.		
Level 1/ K-3	Computers and Communication Devices	Use standard input and output devices to successfully operate computers and related technologies.	Students will learn the differences between input, output and processing as it relates to computer systems, components and peripherals. Students will also learn how to identify different computer components.	Computers Inside & Out, Getting to know my computer, Inside of Computers – How They Function
Level 1/ 3-6	Computers and Communication Devices	Demonstrate an appropriate level of proficiency with keyboards and other input and output devices.	Students will learn the differences between input, output and processing as it relates to computer systems, components and peripherals. Students will also learn how to identify different computer components.	Computers Inside & Out, Getting to know my computer, Inside of

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Level 1 (recommended for grades K–6)				
				Computers – How They Function
Level 1/ 3-6	Computers and Communication Devices	Understand the pervasiveness of computers and computing in daily life (e.g., voicemail, downloading videos and audio files, microwave ovens, thermostats, wireless Internet, mobile computing devices, GPS systems).	Students will discover how technology is a part of everyone’s life and increase their awareness of technology-related jobs in their community.	Jobs & Technology
Level 1/ 3-6	Computers and Communication Devices	Apply strategies for identifying simple hardware and software problems that may occur during use.		
Level 1/ 3-6	Computers and Communication Devices	Identify that information is coming to the computer from many sources over a network.	Students will use Peter Packet to learn about how the internet works and the hardware that exists behind the technology. Students will also learn how data travels through the internet.	How The Internet Works
Level 1/ 3-6	Computers and Communication Devices	Identify factors that distinguish humans from machines.	Students will differentiate how a computer understands instructions relative to humans who can fill in missing information.	Peanut Butter and Jelly
Level 1/ 3-6	Computers and Communication Devices	Recognize that computers model intelligent behavior (as found in robotics, speech and language recognition and computer animation).	Students will differentiate how a computer understands instructions relative to humans who can fill in missing information.	Peanut Butter and Jelly
Level 1/ K-3	Community, Global, and Ethical Impacts	Practice responsible digital citizenship (legal and ethical behaviors) in the use of technology systems and software.	Students will learn to become responsible digital citizens using TECH CORPS’ social network. They will post useful information to the site and alert the Administrator about inappropriate comments and posts.	
Level 1/	Community,	Identify positive and negative social and		



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Level 1 (recommended for grades K–6)				
K-3	Global, and Ethical Impacts	ethical behaviors for using technology.		
Level 1/ 3-6	Community, Global, and Ethical Impacts	Discuss basic issues related to responsible use of technology and information and the consequences of inappropriate use.	Students will discuss and find agreement on self-imposed behavioral norms for their Club.	Naming our Club
Level 1/ 3-6	Community, Global, and Ethical Impacts	Identify the impact of technology (e.g., social networking, cyber bullying, mobile computing and communication, web technologies, cyber security and virtualization) on personal life and society.	Students will learn the difference between open and closed social networking systems and develop an understanding of personal and public privacy.	Getting to know the Portal
Level 1/ 3-6	Community, Global, and Ethical Impacts	Evaluate the accuracy, relevance, appropriateness, comprehensiveness and biases that occur in electronic information sources.	Students learn how to use different online resources to find and evaluate credible sources to gather information on different research topics.	Internet Searching
Level 1/ 3-6	Community, Global, and Ethical Impacts	Understand ethical issues that relate to computers and networks (e.g., equity of access, security, privacy, copyright and intellectual property).	Students will learn the difference between open and closed social networking systems and develop an understanding of personal and public privacy. They will also learn about intellectual property and how to cite content taken from someone else's work.	Getting to know the Portal, See What I Can Do, TechieLoka

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<p>Level 2 (recommended for grades 6–9) Computer Science and Community Middle school/junior high school students begin using computational thinking as a problem-solving tool. They begin to appreciate the ubiquity of computing and the ways in which computer science facilitates communication and collaboration. Students begin to experience computational Thinking as a means of addressing issues relevant, not just to them, but to the world around them.</p>				
Level 2/ 6-9	Computational Thinking	Use the basic steps in algorithmic problem-solving to design solutions (e.g., problem statement and exploration, examination of sample instances, design, implementing a solution, testing and evaluation).	Students will learn the basics of object-oriented programming where they will develop problem statements and explore ways to solve them by breaking down the problem and implementing solutions. They will also test the solutions to ensure that they are viable solutions.	Scratch My Head
Level 2/ 6-9	Computational Thinking	Describe the process of parallelization as it relates to problem solving.	Supplemental Activity: Threads Activity - Students will learn about threads and reasons for their use as well as parallel processing.	
Level 2/ 6-9	Computational Thinking	Define an algorithm as a sequence of instructions that can be processed by a computer.	Students will use storyboarding for Scratch programs to develop algorithms to solve their programming problems.	Scratch My Head
Level 2/ 6-9	Computational Thinking	Evaluate ways that different algorithms may be used to solve the same problem.		
Level 2/ 6-9	Computational Thinking	Act out searching and sorting algorithms.	Supplemental Activity: Searching and sorting algorithms (CS Unplugged)	
Level 2/ 6-9	Computational Thinking	Describe and analyze a sequence of instructions being followed (e.g., describe a character’s behavior in a video game as driven by rules and algorithms).	Students will use “Single Stepping” and “Live” features of Scratch to analyze how the sequence of instructions is followed in testing situations.	Scratch My Head
Level 2/ 6-9	Computational Thinking	Represent data in a variety of ways including text, sounds, pictures and numbers.		
Level 2/ 6-9	Computational Thinking	Use visual representations of problem states, structures and data (e.g., graphs, charts, network diagrams, flowcharts).	Students will use storyboarding and other planning tools to visually represent problems in programming and robotics.	Scratch My Head, Mindstorm NXT
Level 2/ 6-9	Computational Thinking	Interact with content-specific models and simulations (e.g., ecosystems, epidemics, molecular dynamics) to support learning and research.	Students will interact with the simulation of how data moves from one point to another through the Internet.	How the Internet Works
Level 2/ 6-9	Computational Thinking	Evaluate what kinds of problems can be solved using modeling and simulation.	Students will develop miniature models to solve everyday problems in their lives, such as taking out trash.	Mindstorm NXT
Level 2/ 6-9	Computational Thinking	Analyze the degree to which a computer model accurately represents the real world.		

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Level 2/ 6-9	Computational Thinking	Use abstraction to decompose a problem into sub problems.	Students will analyze problems and develop algorithms to solve those problems. They will test and repeat the process until the problems are successfully resolved.	Scratch My Head
Level 2/ 6-9	Computational Thinking	Understand the notion of hierarchy and abstraction in computing including high level languages, translation, instruction set and logic circuits.		
Level 2/ 6-9	Computational Thinking	Examine connections between elements of mathematics and computer science including binary numbers, logic, sets and functions.	Students will learn about coordinate geometry and degrees (angles) in Scratch as well as binary numbers in relation to decimal numbers.	Scratch My Head, Math Bytes and Bits
Level 2/ 6-9	Computational Thinking	Provide examples of interdisciplinary applications of computational thinking.	Students will learn how to apply computational thinking in programming, robotics and when arguing with their siblings.	
Level 2/ 6-9	Collaboration	Apply productivity/ multimedia tools and peripherals to group collaboration and support learning throughout the curriculum.	Students will use TECH CORPS' social network throughout the school year to communicate, discuss and collaborate on projects they work on. They will also use TECH CORPS' blogging platform to publish blogs, including topics on their interest.	
Level 2/ 6-9	Collaboration	Collaboratively design, develop, publish and present products (e.g., videos, podcasts, websites) using technology resources that demonstrate and communicate curriculum concepts.	Students will work cooperatively and collaboratively to develop and implement their final projects for the <i>Techieloka</i> competition. They will design, develop, test and present their products (programs, robots, websites, etc).	Techieloka
Level 2/ 6-9	Collaboration	Collaborate with peers, experts and others using collaborative practices such as pair programming, working in project teams and participating in-group active learning activities.	Students will work cooperatively and collaboratively to develop and implement their final projects for the <i>Techieloka</i> competition. They will design, develop, test and present their products (programs, robots,	Techieloka



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			websites, etc.).	
Level 2/ 6-9	Collaboration	Exhibit dispositions necessary for collaboration: providing useful feedback, integrating feedback, understanding and accepting multiple perspectives, socialization.	Students will use peer assessment and repurposing of solutions prior to submitting their final projects for <i>Techieloka</i> .	Techieloka
Level 2/ 6-9	Computing Practice and Programming	Select appropriate tools and technology resources to accomplish a variety of tasks and solve problems.	Students will learn how to use different blocks in Scratch to implement solutions to different problems. They will also learn how to use different pieces and sensors in their robotics projects.	Scratch My Head, Mindstorm NXT
Level 2/ 6-9	Computing Practice and Programming	Use a variety of multimedia tools and peripherals to support personal productivity and learning throughout the curriculum.	Students will use TECH CORPS' social network throughout the school year to communicate, discuss and collaborate on projects they work on. They will also use TECH CORPS' blogging platform to publish blogs, with images and videos, including topics of interest.	
Level 2/ 6-9	Computing Practice and Programming	Design, develop, publish and present products (e.g., web pages, mobile applications, animations) using technology resources that demonstrate and communicate curriculum concepts.	Students will work cooperatively and collaboratively to develop and implement their final projects for the <i>Techieloka</i> competition. They will design, develop, test and present their products (programs, robots, websites, etc).	Techieloka
Level 2/ 6-9	Computing Practice and Programming	Demonstrate an understanding of algorithms and their practical application.	Students will use algorithms to program their games and animations as well as learn to apply them in other basic aspects of providing instructions in their lives.	Peanut Butter and Jelly, Scratch My Head
Level 2/ 6-9	Computing Practice and Programming	Implement problem solutions using a programming language, including: looping behavior, conditional statements, logic, expressions, variables and functions.	Students will use loops, conditional statements, logic, expressions, variables and functions in developing their games and interactive arts in Scratch.	Scratch My Head
Level 2/	Computing	Demonstrate good practices in personal	Students will learn about privacy and developing	Getting to

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6-9	Practice and Programming	information security, using passwords, encryption and secure transactions.	effective passwords as part of their social networking training.	Know the Portal
Level 2/ 6-9	Computing Practice and Programming	Identify interdisciplinary careers that are enhanced by computer science.	Students will learn about technology and computing jobs. Students will also create career posters following presentations by TECH CORPS volunteers/technology professionals.	Jobs & Technology, Careers in Technology, Making a Scientific Poster
Level 2/ 6-9	Computing Practice and Programming	Demonstrate dispositions amenable to open-ended problem solving and programming (e.g., comfort with complexity, persistence, brainstorming, adaptability, patience, propensity to tinker, creativity, accepting challenge).	Students will work cooperatively and collaboratively to develop and implement their final projects for the <i>Techieloka</i> competition. They will design, develop, test and present their products (programs, robots, websites and etc	Techieloka
Level 2/ 6-9	Computing Practice and Programming	Collect and analyze data that is output from multiple runs of a computer program.		
Level 2/ 6-9	Computers and Communication Devices	Recognize that computers are devices that execute programs.	Students will differentiate how a computer understands instructions relative to humans who can fill in missing information. Students will realize that computers are devices that can only execute programs/instructions.	Peanut Butter and Jelly
Level 2/ 6-9	Computers and Communication Devices	Identify a variety of electronic devices that contain computational processors.		
Level 2/ 6-9	Computers and Communication Devices	Demonstrate an understanding of the relationship between hardware and software.	Students will learn how each component works and how they connect to each other. They will also learn how hardware and software work together to provide	Computers Inside and Out

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			computer users' experiences.	
Level 2/ 6-9	Computers and Communication Devices	Use developmentally appropriate, accurate terminology when communicating about technology.	In every Techie Club lesson, students will learn about a variety of technology terms and concepts. Students will incorporate these terms/concepts into their blogs.	
Level 2/ 6-9	Computers and Communication Devices	Apply strategies for identifying and solving routine hardware problems that occur during everyday computer use.		
Level 2/ 6-9	Computers and Communication Devices	Describe the major components and functions of computer systems and networks.	Student will use, learn and discuss inputs/outputs and processing in computer systems and how each computer component and peripheral belongs in each category.	Computers Inside and Out
Level 2/ 6-9	Computers and Communication Devices	Describe what distinguishes humans from machines, focusing on human intelligence versus machine intelligence and ways we can communicate.	Students will differentiate how a computer understands instructions relative to humans who can fill in missing information. Students will realize that computers are devices that can only execute programs/instructions.	Peanut Butter and Jelly
Level 2/6-9	Computers and Communication Devices	Describe ways in which computers use models of intelligent behavior (e.g., robot motion, speech and language understanding, and computer vision).	When developing robots, students will use the intelligent behavior of humans and animals as models to complete designated tasks.	Mindstorm NXT
Level 2/ 6-9	Community, Global, and Ethical Impacts	Exhibit legal and ethical behaviors when using information and technology and discuss the consequences of misuse.	Students will discuss and find agreement on self-imposed behavioral norms for the club.	Naming our Club
Level 2/ 6-9	Community, Global, and Ethical Impacts	Demonstrate knowledge of changes in information technologies over time and the effects those changes have on education, the workplace and society.		
Level 2/ 6-9	Community, Global, and Ethical Impacts	Analyze the positive and negative impacts of		

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6-9	Global, and Ethical Impacts	computing on human culture.		
Level 2/ 6-9	Community, Global, and Ethical Impacts	Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information sources concerning real-world problems.	Students will learn how to use different online resources to find and evaluate credible sources to gather information on different research topics.	Internet Searching
Level 2/ 6-9	Community, Global, and Ethical Impacts	Describe ethical issues that relate to computers and networks (e.g., security, privacy, ownership and information sharing).	Students will learn the difference between open and closed social networking systems and develop an understanding of personal and public privacy. They will also learn about intellectual property and how to cite content taken from someone else's work.	Getting to Know the Portal
Level 2/ 6-9	Community, Global, and Ethical Impacts	Discuss how the unequal distribution of computing resources in a global economy raises issues of equity, access and power.		