

California K–8 Computer Science Standards and BTE Curriculum Alignment

v.11.3.19

	CA K-8 Co	mputer Science Standards		BTE K-8 Curriculum				
Grade	Standard Identifier	Standard	Framework Alignment: Concept	Grade Level	Unit 1	Unit 2	Unit 3	Unit 4
		Select and operate computing devices		K	~	✓	~	✓
K-2	K-2.CS.1	that perform a variety of tasks	Computing Systems	1st	*	✓	✓	✓
K Z	K 2.03.1	accurately and quickly based on user needs and preferences.	computing systems	2nd	*	✓	*	✓
		Explain the functions of common		K	*	~	~	✓
K-2	K-2.CS.2	hardware and software components of	Computing Systems	1st	~	~	~	✓
		computing systems.		2nd	~	~	~	✓
				К	~	~	~	✓
K-2	K-2.CS.3	Describe basic hardware and software problems using accurate terminology.	Computing Systems	1st	~	✓	Y Y	
				2nd	✓	~	✓	✓
	K-2.NI.4	Model and describe how people connect to other people, places, information and ideas through a network.		K	>	✓	*	✓
K-2			Networks & the	1st	>	✓	✓	✓
			Internet	2nd	~	✓	~	✓
	K-2.NI.5	Explain why people use passwords.	Networks & the Internet	K	<u> </u>			
K-2				1st	✓			
				2nd K			✓	✓
K-2	K-2.NI.6	Create patterns to communicate a	Networks & the Internet	1st				~
K Z	K-2.IVI.0	message.		2nd				*
		Store, copy, search, retrieve, modify,		K	~	~	~	~
K-2	K-2.DA.7	and delete information using a computing device, and define the information stored as data.	Data & Analysis	1st	>	✓	~	✓
Ν.2	K-2.DA./		Data & Allalysis	2nd	~	~	~	✓
		Collect and present data in various		K			✓	
K-2	K-2.DA.8	visual formats.	Data & Analysis	1st			<u> </u>	
				2nd			*	
νэ	K 3 DA 0	Identify and describe patterns in data	Data & Analysis	K			*	
K-2	K-2.DA.9	visualizations, such as charts or graphs,	Data & Analysis	1st 2nd			~	
		to make predictions.		ZIIU			•	

K-2	K-2.AP.10	Model daily processes by creating and following algorithms to complete tasks.	Algorithms & Programming	K 1st				*
		, , , , , , , , , , , , , , , , , , ,	-01	2nd				✓
			Algorithms &	K				
K-2	K-2.AP.11	Model the way programs store data.	Programming	1st				
				2nd				
		Create programs with sequences of	Algorithms &	K				✓
K-2	K-2.AP.12	commands and simple loops, to	Programming	1st				✓
		express ideas or address a problem.	Frogramming	2nd				✓
		Decompose the steps needed to solve	Algorithms &	K				✓
K-2	K-2.AP.13	a problem into a sequence of		1st				~
		instructions.	Programming	2nd				~
		Develop plans that describe a		K	✓	✓	✓	✓
K-2	K-2.AP.14	program's sequence of events, goals,	Algorithms &	1st	✓	✓	~	✓
		and expected outcomes.	Programming	2nd	~	*	~	✓
		Give attribution when using the ideas		K	~	~	~	~
K-2	K-2.AP.15	and creations of others while	Algorithms &	1st	~	~	~	~
N 2	K 2.7 (1.13	developing programs.	Programming	2nd	✓	~	✓	✓
		Debug errors in an algorithm or		K	·	•	•	·
K-2	K-2.AP.16	program that includes sequences and	Algorithms &	1st				~
K-Z	K-2.AF.10	simple loops.	Programming	2nd				~
		simple loops.						~
	K-2.AP.17	Describe the steps taken and choices made during the iterative process of	Algorithms & Programming	K 1st				~
K-2				151				
		program development.	Programming	2nd				✓
		Compare how people lived and worked	Impacts of	K				
K-2	K-2.IC.18	before and after the adoption of new	Computing	1st				
		computing technologies.	Compating	2nd				
		Work respectfully and responsibly with	Impacts of	K	✓	>	*	✓
K-2	K-2.IC.19	others when communicating	Computing	1st	~	*	*	✓
		electronically.		2nd	✓	>	*	✓
		Describe approaches and rationales for		K	~			
K-2	K 3 IC 30	* *	Impacts of	Impacts of 1st				
K-2	K-2.IC.20	keeping login information private, and for logging off of devices appropriately.	Computing	2nd	~			
		Describe how computing devices		3rd	✓			
3-5	3-5.CS.1	connect to other components to form	Computing Systems	4th	~			
		a system.		5th	~			
		Demonstrate how computer hardware		3rd	~			
3-5	3-5.CS.2	and software work together as a	Computing Systems	4th	*			
		system to accomplish tasks.	0.7	5th	*			
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	3-5.CS.3	Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies.		3rd	✓			
3-5			Computing Systems	4th	✓			
				5th	✓			
		Model how information is broken		3rd				
		down into smaller pieces, transmitted		4th				
3-5	3-5.NI.4	as packets through multiple devices over networks and the Internet, and reassembled at the destination.	Networks & the Internet	5th				
		Describe physical and digital security	Networks & the	3rd			*	
3-5	3-5.NI.5	measures for protecting personal	Internet	4th			>	
		information.	internet	5th			>	
		Create patterns to protect information	Networks & the	3rd				
3-5	3-5.NI.6	Create patterns to protect information from unauthorized access.	Internet	4th				
			internet	5th				
		Explain that the amount of space		3rd	✓			
3-5	3-5.DA.7	required to store data differs based on the type of data and/or level of detail.	Data & Analysis	4th	✓			
3-3			· ·	5th	~			
	3-5.DA.8	Organize and present collected data visually to highlight relationships and support a claim.		3rd			*	
3-5			Data & Analysis	4th		~		
				5th			>	
	3-5.DA.9	Use data to highlight and/or propose relationships, predict outcomes, or communicate ideas.	Data & Analysis	3rd			>	
3-5				4th			>	
				5th			>	
		Compare and refine multiple	Algorithms &	3rd	✓	>	~	✓
3-5	3-5.AP.10	algorithms for the same task and determine which is the most	Programming -	4th	✓	>	*	✓
				5th	✓	>	~	✓
		Croate programs that use variables to	Algorithms &	3rd				✓
3-5	3-5.AP.11	Create programs that use variables to store and modify data.	Programming	4th				✓
			Programming	5th				✓
		Create programs that include averte	Algorithms 0	3rd				✓
3-5	3-5.AP.12	Create programs that include events,	Algorithms &	4th				~
		loops, and conditionals.	Programming	5th				✓
		Decompose problems into smaller,	Algorithms 0	3rd	✓	✓	✓	~
3-5	3-5.AP.13	manageable tasks which may themselves be decomposed.	Algorithms &	4th	~	~	✓	✓
			Programming	5th	✓	>	✓	✓
		Create programs by incorporating		3rd	✓	>	✓	~
3-5	3-5.AP.14	smaller portions of existing programs,	Algorithms &	4th	✓	>	~	✓
3 - 3		to develop something new or add more advanced features.	Programming	5th	~	*	~	~

Use an intentive process to plan and develop a program by considering the perspectives and preferences of others. 3.5 3.5 AP.16 Observe intellectual property rights and give appropriate attribution when creating, remixing, or combining programs. 3.5 3.5 AP.17 Test and debug a program or algorithm to ensure it accomplishes the intended task. Perform different roles when collaborating with peers utining the design, implementation, and review stages of program developments using code comments, and evelopment using code comments, presentations, and demonstrations. 3.5 3.5 AP.19 Describe choices made during program developments using code comments, have changed the world, and express how those technologies influence, and are influenced by, cultural practices. Propose ways to improve the world, and express for perspectives for the purpose of improving computational artifacts. Seek and explain the limpact of diverse perspectives for the purpose of improving computational artifacts. Design a project that combines hardware and software components to collect and exchanged that ways users interactive with the device. The program of the lives of their work. Design a project that combines hardware and software components to collect and exchanged that ways users interactive with the device. The propose of improving computational artifacts. Design a project that combines hardware and software components to collect and exchanged that years are supposed to their work. Design a project that combines hardware and software components to collect and exchanged that years are supposed to their work. Social exchanged the components to computing devices in order to improve the ways users interact with the device. The propose of their work. Social exchanged the components to computing devices in order to improve the ways users interact with the device. The propose of their work of their work. Social exchanged the propose of their work. Design a project that combines hardware and software components to collect a									
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3-5.IC.21 products for the diverse needs and wants of users. Seek and explain the impact of diverse perspectives for the purpose of improving computational artifacts. Describe reasons creators might limit the use of their work. Design modifications to computing devices in order to improve the ways users interact with the devices. Design a project that combines hardware and software components to collect and exchange data. Systematically apply troubleshooting strategies to identify and resolve		2 E IC 21		/ Impacts of	3rd				>
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3-5 3-5.IC.23 Describe reasons creators might limit the use of their work. Impacts of Computing Sth V V V V V V V V V	3-5	3-5.IC.22	perspectives for the purpose of	•	701		<u> </u>		
3-5.IC.23 Describe reasons creators might limit the use of their work. Design modifications to computing devices in order to improve the ways users interact with the devices. Design a project that combines hardware and software components to collect and exchange data. Systematically apply troubleshooting strategies to identify and resolve.			improving computational artifacts.	Computing	5th		✓		
3-5.IC.23 Describe reasons creators might limit the use of their work. Design modifications to computing devices in order to improve the ways users interact with the devices. Design a project that combines hardware and software components to collect and exchange data. Systematically apply troubleshooting strategies to identify and resolve.					3rd	✓	~	~	~
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Design modifications to computing devices in order to improve the ways users interact with the devices. Design a project that combines hardware and software components to collect and exchange data. Design a project that combines hardware and software components to collect and exchange data. Systematically apply troubleshooting strategies to identify and resolve.	5 5	5 5.16.25	the use of their work.	Computing				7	<u>,</u>
6-8 6-8.CS.1 devices in order to improve the ways users interact with the devices. Design a project that combines hardware and software components to collect and exchange data. Systematically apply troubleshooting strategies to identify and resolve			Design modifications to computing			•	*	•	•
users interact with the devices. Design a project that combines 6-8. CS.2 Design a project that combines 6-8. CS.2 hardware and software components to collect and exchange data. Systematically apply troubleshooting strategies to identify and resolve	6-8	6-8 CS 1		Computing Systems					
Design a project that combines hardware and software components to collect and exchange data. Design a project that combines components to computing Systems 7th	0-0	0-0.03.1		Computing Systems					
6-8 6-8.CS.2 hardware and software components to collect and exchange data. Computing Systems 7th] 					. 4		
collect and exchange data. 8th Systematically apply troubleshooting strategies to identify and resolve	6.0	6.0.66.3	3 , ,	C				·	·
Systematically apply troubleshooting Systematically apply troubleshooting Strategies to identify and resolve	6-8	6-8.CS.2	-	Computing Systems		<u> </u>	·	·	·
strategies to identify and resolve							✓	✓	✓
6-8 CS 3 strategies to identify and resolve Computing Systems 7th			, , , , ,						
	6-8	6-8 CS 3	strategies to identify and resolve	Computing Systems	7th	~			

	0 0.00.0	hardware and software problems in computing systems.	Computing Systems	8th	✓			
6-8	6-8.NI.4	Model the role of protocols in transmitting data across networks and the Internet.	Networks & the Internet	6th 7th 8th				
6-8	6-8.NI.5	Explain potential security threats and security measures to mitigate threats.	Networks & the Internet	6th 7th 8th			*	
6-8	6-8.NI.6	Apply multiple methods of information protection to model the secure transmission of information.	Networks & the Internet	6th 7th 8th	-			
6-8	6-8.DA.7	Represent data in multiple ways.	Data & Analysis	6th 7th 8th			· · · · · · · · · · · · · · · · · · ·	
6-8	6-8.DA.8	Collect data using computational tools and transform the data to make it more useful.	Data & Analysis	6th 7th 8th			· · · · · · · · · · · · · · · · · · ·	
6-8	6-8.DA.9	Test and analyze the effects of changing variables while using computational models.	Data & Analysis	6th 7th 8th			· · · · · · · · · · · · · · · · · · ·	
6-8	6-8.AP.10	Use flowcharts and/or pseudocode to design and illustrate algorithms that solve complex problems.	Algorithms & Programming	6th 7th 8th			·	* * *
6-8	6-8.AP.11	Create clearly named variables that store data, and perform operations on their contents.	Algorithms & Programming	6th 7th 8th				Y Y Y
6-8	6-8.AP.12	Design and iteratively develop programs that combine control structures and use compound	Algorithms & Programming	6th 7th 8th				*
6-8	6-8.AP.13	conditions. Decompose problems and subproblems into parts to facilitate the	Algorithms &	6th 7th	Y Y	*	*	V
		design, implementation, and review of programs. Create procedures with parameters to	Programming Algorithms &	8th 6th	~	✓	✓	*
6-8	6-8.AP.14	organize code and make it easier to reuse. Seek and incorporate feedback from	Programming	7th 8th 6th			~	Y Y Y
6-8	6-8.AP.15	team members and users to refine a solution that meets user needs. Incorporate existing code, media, and	Algorithms & Programming	7th 8th 6th		•	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
6-8	6-8.AP.16	libraries into original programs, and	Algorithms &	7th	V	*	*	*

I		give attribution.	rıogranınıng	8th	~	✓	✓	✓
		Contamostically took and unfine and un	Algorithms & Programming	6th	~	✓	✓	~
6-8	6-8.AP.17	Systematically test and refine programs		7th	✓	~	~	✓
		using a range of test cases.		8th	✓	✓	✓	✓
		Distribute tasks and maintain a project	Algorithms &	6th	✓	~	~	✓
6-8	6-8.AP.18	timeline when collaboratively	Programming	7th	✓	~	>	✓
		developing computational artifacts.	Programming	8th	✓	*	>	✓
		Distribute tasks and maintain a project	Algorithms 9	6th				✓
6-8	6-8.AP.18	timeline when collaboratively	Algorithms & Programming	7th				✓
		developing computational artifacts.		8th				✓
	6-8.IC.20	Compare tradeoffs associated with		6th	✓	~	>	✓
6-8		computing technologies that affect	Impacts of Computing	7th				
0-8		people's everyday activities and career		8th				
		options.		Otii				
	6-8.IC.21	Discuss issues of bias and accessibility	Impacts of	6th				
6-8		in the design of existing technologies.	Computing	l 7th				
			Companing	8th				
	6-8.IC.22	Collaborate with many contributors	Impacts of Computing	6th			✓	
6-8		when creating a computational		7th			✓	
		artifact.		8th			✓	
		Compare tradeoffs associated with		6th		✓		
		licenses for computational artifacts to	Impacts of	7th		✓		
6-8	6-8.IC.23	balance the protection of the creators'	Computing					
		rights and the ability for others to use		8th		~		
		and modify the artifacts.						
6.0	6.016.34	Compare tradeoffs between allowing	Impacts of	6th			✓	
6-8	6-8.IC.24	information to be public and keeping	Computing	7th			✓	
		information private and secure.		8th			✓	

