Public Schools of North Carolina
State Board of Education | Department of Public Instruction

Crosswalk for the 2020 North Carolina K12 Computer Science Standards with other NC Standard Course of Studies.

This document is designed to help North Carolina educators teach the NC Standard Course of Study for Computer Science. The 2020 NC K12 Computer Science Standards which are based on the 2017 Computer Science Teachers Association Computer Science Standards.

This document is a crosswalk that shows where the NC K-8 CS Standards are closely related to equivalent grand band standards for Mathematics, ELA, and Digital Learning Standards.

Kindergarten through Second Grade

K2-CS-01	**Choose appropriate devices to perform a variety of classroom tasks.**		**Computing Systems** Devices
	English Language Arts		
	Mathematics	SMP 5	
	Digital Learning	1D, 6A	
K2-CS-02	**Describe the function of common physical components of computing systems (hardware) with appropriate terminology.**		**Computing Systems** Hardware & Software
	English Language Arts	W.K.6, L.K.6, SL.K.5, SL.1.4, SL.1.5, SL.2.4, SL.2.5	
	Mathematics	SMP 2, 3, & 5	
	Digital Learning		
K2-CS-03	**Operate appropriate software to perform a variety of tasks.**		**Computing Systems** Hardware & Software
	English Language Arts	W.K.4, W.1.4, W.2.4, SL.K.5, SL.1.5, SL.2.5	
	Mathematics	SMP 5	
	Digital Learning	1D, 6A	
K2-CS-04	**Describe basic hardware and software problems with accurate terminology.**		**Computing Systems** Troubleshooting
	English Language Arts	SL.K.5, SL.1.4, SL.1.5, SL.2.4, SL.2.5	
	Mathematics	SMP 2 & 6	
	Digital Learning		

K2-NI-01	**Illustrate how information is broken down into smaller pieces and can be reassembled.**		**Networks & the Internet** Network Communication & Organization
	English Language Arts	W.K.2, W.1.2, W.2.2	
	Mathematics		
	Digital Learning		
K2-NI-02	**Apply knowledge of what passwords are and why we use strong passwords to protect devices and information from unauthorized access.**		**Networks & the Internet** Cybersecurity
	English Language Arts	W.K.2, W.1.2, W.2.2, SL.K.5, SL.1.4, SL.1.5, SL.2.4, SL.2.5	
	Mathematics	SMP 3 & 4	
	Digital Learning	2B	
K2-NI-03	**Discover your digital footprint and how personal information can be protected.**		**Networks & the Internet** Cybersecurity
	English Language Arts	SL.3.4, SL.4.4, SL.5.4	
	Mathematics		
	Digital Learning	2B, 2C	
K2-DA-01	**Store, copy, search, retrieve, modify, and delete information using a computing device.**		**Data & Analysis** Storage
	English Language Arts	W.K.1, W.K.4, W.1.1, W.1.4, W.2.5, W.2.4	
	Mathematics		
	Digital Learning		

K2-DA-02	**Define information stored on a computing device as data.**		**Data & Analysis** Storage
	English Language Arts		
	Mathematics		
	Digital Learning		
K2-DA-03	**Collect and present the same data in various visual formats.**		**Data & Analysis** Collection Visualization & Transformation
	English Language Arts		
	Mathematics	K.MD.3, 1.MD.4,2.MD.4, 2.MD.10	
	Digital Learning	5B, 6C	
K2-DA-04	**Make predictions with patterns in data visualizations.**		**Data & Analysis** Inference & Models
	English Language Arts		
	Mathematics	K.MD.3, K.G.4, 1.MD.4, 2.MD.10	
	Digital Learning		
K2-AP-01	**Model daily processes with algorithms to complete tasks.**		**Algorithms & Programming** Algorithms
	English Language Arts	W.K.3, W.1.3, W.2.3, RI.K.7	
	Mathematics	SMP 6, 7, & 8	
	Digital Learning		

K2-AP-02	Demonstrate how programs store and manipulate data by using numbers or other symbols to represent information.		**Algorithms & Programming** Variables
	English Language Arts	SL.K.5, SL.1.5	
	Mathematics		
	Digital Learning		
K2-AP-03	Develop programs with sequences and simple loops to express ideas or address a problem.		**Algorithms & Programming** Control
	English Language Arts	RI.2.3	
	Mathematics		
	Digital Learning	5D	
K2-AP-04	Decompose the steps needed to solve a problem into a precise sequence of instructions.		**Algorithms & Programming** Modularity
	English Language Arts		
	Mathematics	K.G.5, 1.G.2	
	Digital Learning	5C	
K2-AP-05	Develop plans that describe a program's sequence of events, goals, and expected outcomes.		**Algorithms & Programming** Program Development
	English Language Arts	W.K.3, W.1.3, W.2.3, RI.2.3	
	Mathematics	SMP 6, 7, & 8	
	Digital Learning	5D	
K2-AP-06	Give attribution when using the ideas and creations of others while developing programs.		**Algorithms & Programming** Program Development

	English Language Arts	
	Mathematics	
	Digital Learning	2C
K2-AP-07	**Identify and debug errors in an algorithm or program that includes sequences and simple loops.**	**Algorithms & Programming** Program Development
	English Language Arts	W.K.6
	Mathematics	SMP 6, 7, & 8
	Digital Learning	1D
K2-AP-08	**Using correct terminology, describe steps taken and choices made during the iterative process of program development.**	**Algorithms & Programming** Program Development
	English Language Arts	W.1.2, W.1.3, SL.K.5, SL.1.4, SL.1.5, SL.2.4, SL.2.5
	Mathematics	1.MD.4; SMP 2, 3, & 4
	Digital Learning	4A, 4B, 4C
K2-IC-01	**Compare how people live and work before and after the implementation or adoption of new computing technology.**	**Impacts of Computing** Culture
	English Language Arts	RI.K.3, RI.1.9, RL.1.9, RI.2.9, RL.2.9, SL.K.5, SL.1.4, SL.1.5, SL.2.4, SL.2.5
	Mathematics	
	Digital Learning	
K2-IC-02	**Select software that meets the diverse needs and preferences for the technology individuals use in the classroom.**	**Computing Systems** Culture
	English Language Arts	
	Mathematics	

	Digital Learning	
K2-IC-03	**Work respectfully and responsibly with others online.**	**Impacts of Computing** Social Interactions
	English Language Arts	W.K.1, W.K.1, W.1.1, W.1.4, W.2.5, W.2.4, SL.K.1, SL.1.1, SL.2.1
	Mathematics	
	Digital Learning	7C
K2-IC-04	**Model responsible login and logoff procedures on all devices.**	**Impacts of Computing** Safety Law & Ethics
	English Language Arts	SL.K.5, SL.1.4, SL.1.5, SL.2.4, SL.2.5
	Mathematics	
	Digital Learning	2B, 2D

Third through Fifth Grade

35-CS-01	**Evaluate the features available on digital devices to perform a variety of classroom tasks.**		**Computing Systems** Devices
	English Language Arts		
	Mathematics		
	Digital Learning	1D, 6A	
35-CS-02	**Model how computer hardware and software work together as a system to accomplish tasks.**		**Computing Systems** Hardware & Software
	English Language Arts		
	Mathematics	SMP 4	
	Digital Learning		
35-CS-03	**Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies.**		**Computing Systems** Troubleshooting
	English Language Arts	W.5.5	
	Mathematics	SMP 1, 2, & 3	
	Digital Learning	1D	
35-NI-01	**Model how information is broken down into smaller pieces, transmitted as packets through multiple devices over networks and the Internet, and reassembled at the destination.**		**Networks & the Internet** Network Communication & Organization
	English Language Arts		
	Mathematics	SMP 4	
	Digital Learning		

35-NI-02	**Explain your digital footprint and how personal information can be protected.**	**Networks & the Internet** Cybersecurity
	English Language Arts	
	Mathematics	
	Digital Learning	2A, 2D
35-DA-01	**Identify the type of data encoded in a file based on file extension.**	**Data & Analysis** Storage
	English Language Arts	W.3.4, W.4.4, W.5.4, SL.3.4, SL.4.4, SL.5.4
	Mathematics	
	Digital Learning	
35-DA-02	**Illustrate the process of file management and version control.**	**Data & Analysis** Storage
	English Language Arts	
	Mathematics	
	Digital Learning	
35-DA-03	**Organize and present collected data visually to highlight relationships and support a claim.**	**Data & Analysis** Collection Visualization & Transformation
	English Language Arts	W.3.6, W.3.2, SL.3.2, SL.3.4, SL.3.5
	Mathematics	3.MD.3, 4.MD.4, 5.MD.2; SMP 2 & 4
	Digital Learning	5B
35-DA-04	**Communicate using data to highlight or predict outcomes.**	**Data & Analysis**

			Inference & Models
	English Language Arts		
	Mathematics	3.MD.3, 4.MD.4, 5.MD.2	
	Digital Learning	5B	
35-AP-01	**Create multiple algorithms for the same task to determine which is the most accurate and efficient.**		**Algorithms & Programming** Algorithms
	English Language Arts	RI.4.6, RI.5.6, W.4.5, W.5.5	
	Mathematics	SMP 2 & 6	
	Digital Learning	4A, 5A	
35-AP-02	**Create programs that use variables to store and modify data.**		**Algorithms & Programming** Variables
	English Language Arts		
	Mathematics		
	Digital Learning		
35-AP-03	**Construct programs that include sequences.**		**Algorithms & Programming** Control
	English Language Arts		
	Mathematics	SMP 2	
	Digital Learning		
35-AP-04	**Construct programs using simple loops.**		**Algorithms & Programming** Control
	English Language Arts		

	Mathematics	SMP 2 & 8
	Digital Learning	
35-AP-05	**Construct programs that implement conditionals.**	**Algorithms & Programming** Control
	English Language Arts	
	Mathematics	SMP 2
	Digital Learning	
35-AP-06	**Decompose problems into smaller, manageable, subproblems to facilitate the program development process.**	**Algorithms & Programming** Modularity
	English Language Arts	RL.4.5, RL.5.5, RL.5.9
	Mathematics	SMP 2
	Digital Learning	5C
35-AP-07	**Modify, remix, or incorporate portions of an existing program into one's own work.**	**Algorithms & Programming** Modularity
	English Language Arts	
	Mathematics	
	Digital Learning	6B
35-AP-08	**Apply an iterative process to the development of a program by including diverse perspectives and considering user preferences.**	**Algorithms & Programming** Program Development
	English Language Arts	
	Mathematics	SMP 2 & 3
	Digital Learning	1C, 4A, 7B

35-AP-09	Give appropriate attribution when creating or remixing programs while respecting intellectual property rights.		**Algorithms & Programming** Program Development
	English Language Arts		
	Mathematics		
	Digital Learning	2C, 6B	
35-AP-10	Identify and debug errors in an algorithm or program to ensure it runs as intended.		**Algorithms & Programming** Program Development
	English Language Arts		
	Mathematics	SMP 2, 3, & 6	
	Digital Learning	4C	
35-AP-11	Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.		**Algorithms & Programming** Program Development
	English Language Arts	W.3.5	
	Mathematics	SMP 3	
	Digital Learning	7C	
35-AP-12	Describe choices made during program development using code comments, presentations, and demonstrations.		**Algorithms & Programming** Program Development
	English Language Arts	SL.3.4, SL.4.4, SL.5.4	
	Mathematics	SMP 2 & 3	
	Digital Learning	6C	

35-IC-01	Compare computing technologies that have changed the world and how they both influence and are influenced by cultural practices.		Impacts of Computing Culture
	English Language Arts	W.3.6, SL.3.1, SL.4.1, SL.5.1	
	Mathematics		
	Digital Learning	3D, 7B	
35-IC-02	Explore the tools that can be used to improve accessibility and usability of technology products for the diverse needs and wants of users.		Impacts of Computing Culture
	English Language Arts	W.3.5, W.4.5, W.5.5	
	Mathematics	SMP 5	
	Digital Learning	7A	
35-IC-03	Seek diverse perspectives with collaboration for the purpose of improving computational artifacts.		Impacts of Computing Social Interactions
	English Language Arts	SL.3.1, SL.4.1, SL.5.1	
	Mathematics		
	Digital Learning	7B	
35-IC-04	Exhibit positive digital citizenship and social responsibility.		Impacts of Computing Social Interactions
	English Language Arts		
	Mathematics		
	Digital Learning	2B	
35-IC-05	Utilize public domain or creative commons media, and refrain from copying or using material created by others without permission.		Impacts of Computing Safety Law & Ethics

	English Language Arts	
	Mathematics	
	Digital Learning	2C

Sixth through Eighth Grade

68-CS-01	**Understand the design of computing devices based on an analysis of how users interact with the devices.**	**Computing Systems** Devices
	English Language Arts	
	Mathematics	7.SP.8; SMP 3
	Digital Learning	
68-CS-02	**Design projects that combine hardware and software components to collect and exchange data.**	**Computing Systems** Hardware & Software
	English Language Arts	
	Mathematics	8.F.5; SMP 2 & 3
	Digital Learning	
68-CS-03	**Systematically identify and fix problems with computing devices and components.**	**Computing Systems** Troubleshooting
	English Language Arts	W.6.5,W.7.5, W.8.5
	Mathematics	SMP 1, 2, & 8
	Digital Learning	1D
68-NI-01	**Analyze different ways that data is transferred across a network and the role of protocols in transmitting data.**	**Networks & the Internet** Network Communication & Organization
	English Language Arts	
	Mathematics	
	Digital Learning	

68-NI-02	Explain how physical and digital security measures protect electronic information.		Networks & the Internet Cybersecurity
	English Language Arts	W.6.1, W.7.1, W.8.1	
	Mathematics		
	Digital Learning	2C	
68-NI-03	Explain permission and authorizations to access resources to computer systems online.		Networks & the Internet Cybersecurity
	English Language Arts	W.6.2, W.7.2, W.8.2	
	Mathematics		
	Digital Learning	2C	
68-NI-04	Apply multiple methods of encryption to model the secure transmission of information.		Networks & the Internet Cybersecurity
	English Language Arts		
	Mathematics		
	Digital Learning		
68-DA-01	Represent data using multiple encoding schemes.		Data & Analysis Storage
	English Language Arts		
	Mathematics	6.RP.3, 6.EE.9, 6.NS.1, 6.SP.4, 8.F.2, 8.F.4, 8.F.5, 8.SP.1; SMP 4	
	Digital Learning		
68-DA-02	Collect data using computational tools.		Data & Analysis Collection Visualization &

		Transformation
	English Language Arts	
	Mathematics	7.SP.3, 8.SP.1, 8.SP.4, 7.SP.4, 8.F.4, 8.F.5, 8.SP.1, 6.SP.5, 7.SP.2, 7.SP.6; SMP 1 & 5
	Digital Learning	5B
68-DA-03	**Transform the collected data to make it more useful and reliable.**	**Data & Analysis** Collection Visualization & Transformation
	English Language Arts	
	Mathematics	
	Digital Learning	5B
68-DA-04	**Refine computational models based on the data they have generated and/or data collected.**	**Data & Analysis** Inference & Models
	English Language Arts	
	Mathematics	7EE.4, 7.SP.7, 8.SP.1, 8.SP.3, 8.SP.4, 8.G.9; SMP 1 & 4
	Digital Learning	
68-AP-01	**Implement flowcharts and/or pseudocode to address complex problems as algorithms.**	**Algorithms & Programming** Algorithms
	English Language Arts	RI.6.5, RI.7.5, RI.8.5
	Mathematics	SMP 2
	Digital Learning	
68-AP-02	**Create clearly named variables that represent different data types.**	**Algorithms & Programming** Variables

	English Language Arts	
	Mathematics	6.EE.2, 6.EE.6, 7.EE.4, 8.EE.8, 8.F.1; SMP 6
	Digital Learning	
68-AP-03	**Design and iteratively develop programs that combine control structures including nested loops and compound conditionals.**	**Algorithms & Programming** Control
	English Language Arts	
	Mathematics	7.SP.8, 8.F.4, 8.SP.4; SMP 1, 2,7, 8
	Digital Learning	4C
68-AP-04	**Construct programs that include events.**	**Algorithms & Programming** Control
	English Language Arts	
	Mathematics	SMP 2 & 7
	Digital Learning	
68-AP-05	**Organize problems and subproblems into parts.**	**Algorithms & Programming** Modularity
	English Language Arts	
	Mathematics	6.EE.6, 7.G.2, 8.EE.8; SMP 7
	Digital Learning	5C
68-AP-06	**Explain the design, implementation, and review of programs.**	**Algorithms & Programming** Modularity
	English Language Arts	
	Mathematics	

	Digital Learning	6C
68-AP-07	**Create procedures with parameters to organize code and make it easier to reuse groups of instructions.**	**Algorithms & Programming** Modularity
	English Language Arts	
	Mathematics	7.EE.4; SMP 2 & 7
	Digital Learning	
68-AP-08	**Assess feedback from team members and users to refine a solution that meets user needs.**	**Algorithms & Programming** Program Development
	English Language Arts	SL.6.1, SL.7.1, SL.8.1
	Mathematics	SMP 1
	Digital Learning	7B
68-AP-09	**Incorporate existing code and media into original programs and give attribution.**	**Algorithms & Programming** Program Development
	English Language Arts	RI.6.7, W.6.6, W.7.6, W.8.6
	Mathematics	SMP 7
	Digital Learning	2C, 6B
68-AP-10	**Systematically test and refine programs using a range of test cases.**	**Algorithms & Programming** Program Development
	English Language Arts	
	Mathematics	6.EE.5, 7.SP.5, 7.SP.6, 7.SP.7, 7.SP.8; SMP 1, 2, 4& 6
	Digital Learning	4C

68-AP-11	**Distribute tasks and maintain a project timeline when collaboratively developing computational artifacts.**	**Algorithms & Programming** Program Development
	English Language Arts	
	Mathematics	
	Digital Learning	7B
68-AP-12	**Document programs in order to make them easier to follow, test, and debug.**	**Algorithms & Programming** Program Development
	English Language Arts	
	Mathematics	SMP 3
	Digital Learning	
68-IC-01	**Compare tradeoffs associated with computing technologies that affect everyday activities and career options.**	**Impacts of Computing** Culture
	English Language Arts	SL.6.1, Sl.7.1, SL.8.1
	Mathematics	
	Digital Learning	
68-IC-02	**Describe how equity, access, and influence impact the distribution of computing resources in a global society.**	**Impacts of Computing** Culture
	English Language Arts	W.6.2, W.7.2, W.8.2, SL.6.1, Sl.7.1, SL.8.1
	Mathematics	
	Digital Learning	
68-IC-03	**Discuss issues of bias and accessibility in the design of existing technologies.**	**Impacts of Computing** Culture

	English Language Arts	RI.6.7, RI.7.7, RI.8.7, SL.6.1, SL.7.1, SL.8.1
	Mathematics	
	Digital Learning	
68-IC-04	**Collaborate, model, and promote effective research strategies for assessing and evaluating innovative resources.**	**Impacts of Computing** Culture
	English Language Arts	
	Mathematics	
	Digital Learning	3A, 3B
68-IC-05	**Collaborate with many contributors to create a computational artifact.**	**Impacts of Computing** Social Interactions
	English Language Arts	SL.6.1, Sl.7.1, SL.8.1
	Mathematics	
	Digital Learning	7C
68-IC-06	**Utilize tools and methods for collaboration on a project to increase connectivity of peers.**	**Impacts of Computing** Social Interactions
	English Language Arts	
	Mathematics	
	Digital Learning	7B
68-IC-07	**Examine the benefits and drawbacks of a digital footprint and online identity.**	**Impacts of Computing** Social Interactions
	English Language Arts	
	Mathematics	

	Digital Learning	2C
68-IC-08	**Understand how online interactions make an impact on the social, emotional, and physical aspect of others.**	**Impacts of Computing** Social Interactions
	English Language Arts	
	Mathematics	
	Digital Learning	2C
68-IC-09	**Compare tradeoffs between allowing information to be public and keeping information private and secure.**	**Impacts of Computing** Safety Law & Ethics
	English Language Arts	
	Mathematics	
	Digital Learning	2D