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

Crosswalk for the 2020 North Carolina K12 Computer Science Standards aligned with Code.org *CS Principles*.

This document is designed to help North Carolina educators teach the NC Standard Course of Study for Computer Science.

This document is a general alignment of the 2020 NC K12 Computer Science Standards which are based on the 2017 Computer Science Teachers Association Computer Science Standards to a common national curriculum.

High School Introductory Computer Science Mapped to *Code.org CS Principles*

	Code.org CS Principles Unit									
NC Standard	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
ICS-CS-01 Explain how abstractions hide the underlying implementation details of computing systems embedded in everyday objects.										
ICS-CS-02 Compare levels of abstraction and interactions between application software, system software, and hardware layers.	✓									
ICS-CS-03 Explain the roles of operating systems including memory management, data storage/retrieval, process management, and access control.										
ICS-CS-04 Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors.			✓							
ICS-NI-01 Evaluate the relationship between routers, switches, servers, and topology with regard to networks.		✓								
ICS-NI-02 Identify examples to illustrate how sensitive data can be affected by malware and other attacks.										✓
ICS-NI-03 Recommend cybersecurity measures to address various scenarios based on factors such as efficiency, feasibility, and ethical impacts.										✓
ICS-NI-04 Compare various security measures and consider tradeoffs between the usability and security of a computing system.										✓

ICS-DA-01 Compare different binary representations of data, including text, sound, images, and numbers.	✓									
ICS-DA-02 Evaluate the tradeoffs in how data elements are organized and where data is stored.	✓								✓	
ICS-DA-03 Create interactive data visualizations using software tools to help others better understand real-world phenomena.									✓	
ICS-DA-04 Create computational models that represent the relationships among different elements of data collected.					✓					
ICS-AP-01 Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests.			✓							
ICS-AP-02 Explain the use of artificial intelligence within computing systems.										
ICS-AP-03 Utilize lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.					✓					
ICS-AP-04 Justify the selection of specific control structures, considering implementation, readability, and program performance.				✓	✓					
ICS-AP-05 Iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions.			✓	✓	✓			✓		
ICS-AP-06 Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects.				✓						
ICS-AP-07 Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs.							✓	✓		

ICS-AP-08 Systematically design programs for broad audiences.			✓					✓		
ICS-AP-09 Refine programs by incorporating feedback from users.			✓					✓		
ICS-AP-10 Evaluate licenses that limit or restrict use of computational artifacts when using resources such as software libraries.										
ICS-AP-11 Evaluate computational artifacts for usability.	✓		✓					✓		
ICS-AP-12 Modify computational artifacts to increase usability and accessibility.	✓		✓					✓		
ICS-AP-13 Develop computational artifacts working in team roles using collaborative tools.			✓		✓					
ICS-AP-14 Explain design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.			✓		✓			✓		
ICS-IC-01 Evaluate the ways computing impacts personal, ethical, social, economic, and cultural practices.	✓	✓								✓
ICS-IC-02 Elaborate how computational innovations have and may continue to impact society.										
ICS-IC-03 Evaluate how equity, access, and influence impact distribution of computing resources in a global society.		✓								
ICS-IC-04 Test computational artifacts to reduce bias and equity deficits.										
ICS-IC-05 Demonstrate ways a given algorithm applies to problems across disciplines.										
ICS-IC-06 Utilize tools and methods for collaboration on a project to increase connectivity of peers.										✓

ICS-IC-07 Explain the beneficial and harmful effects that intellectual property laws can have on innovation.	✓	✓								
ICS-IC-08 Explain privacy concerns related to the collection and generation of data through automated processes that may not be evident to users.										✓
ICS-IC-09 Evaluate the social and economic implications of privacy in the context of safety, law, and ethics.		✓								✓