Skill Struck

Skill Struck's Alignment to

New York Computer Science and Digital Fluency Standards

Our computer science curriculum for grades K–12 aligns with **164/164** New York Computer Science and Digital Fluency Standards.

100%

164 of 164 standards aligned



Impacts of Computing — 34 of 34 aligned



Computational Thinking — 50 of 50 aligned



Networks and Systems Design — 25 of 25 aligned



Cybersecurity — 24 of 24 aligned



Digital Literacy — 31 of 31 aligned

Standard	Status

Impacts of Computing

IC 34 of 34 aligned

Grades K–1		
K-1.IC.1	Identify and discuss how tasks are accomplished with and without computing technology.	✓
K-1.IC.2	Identify and explain classroom and home rules related to computing technologies.	✓
K-1.IC.3	Identify computing technologies in the classroom, home, and community.	✓
K-1.IC.4	Identify public and private spaces in our daily lives.	✓
K-1.IC.6	With teacher support, identify different ways people interact with computers and computing devices.	✓
K-1.IC.7	Identify multiple jobs that use computing technologies.	✓

Grades 2–3		
2-3.IC.1	Identify and analyze how computing technology has changed the way people live & work.	✓
2-3.IC.2	Compare and explain rules related to computing technologies and digital information.	✓
2-3.IC.3	Discuss and explain how computing technology can be used in society and the world.	✓
2-3.IC.4	Identify public and private digital spaces.	✓
2-3.IC.5	Identify and discuss how computers are programmed to make decisions without direct human input in daily life.	✓
2-3.IC.6	Identify and discuss factors that make a computing device or software application easier or more difficult to use.	✓
2-3.IC.7	Identify a diverse range of roles and skills in computer science.	✓

Grades 4–6		
4-6.IC.1	Describe computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.	✓
4-6.IC.2	Explain how laws impact the use of computing technologies and digital information.	✓
4-6.IC.3	Explain current events that involve computing technologies.	✓
4-6.IC.4	Explain who has access to data in different digital spaces.	✓
4-6.IC.5	Explain how computer systems play a role in human decision-making.	✓
4-6.IC.6	Identify and explain ways to improve the accessibility and usability of a computing device or software application for the diverse needs and wants of users.	✓
4-6.IC.7	Identify a diverse range of role models in computer science.	✓

Grades 7–8		
7-8.IC.1	Compare and contrast tradeoffs associated with computing technologies that affect individuals and society.	✓
7-8.IC.2	Evaluate the impact of laws or regulations on the development and use of computing technologies and digital information.	✓
7-8.IC.3	Identify and discuss issues of ethics surrounding computing technologies & current events.	✓
7-8.IC.4	Identify and discuss issues related to the collection and use of public and private data.	✓

Standard		Status

Impacts of Computing (Continued)

Grades 7–8 (Continued)

7-8.IC.5	Analyze potential sources of bias that could be introduced to complex computer systems and the potential impact of these biases on individuals.	✓
7-8.IC.6	Assess the accessibility of a computing device or software application in terms of user needs.	✓
7-8.IC.7	Explore a range of computer science-related career paths.	✓

Grades 9–12

9-12.IC.1	Evaluate the impact of computing technologies on equity, access, and influence in a global society.	✓
9-12.IC.2	Debate laws and regulations that impact the development and use of computing technologies and digital information.	✓
9-12.IC.3	Debate issues of ethics related to real world computing technologies.	✓
9-12.IC.4	Assess personal and societal trade-offs related to computing technologies and data privacy.	✓
9-12.IC.5	Describe ways that complex computer systems can be designed for inclusivity and to mitigate unintended consequences.	✓
9-12.IC.6	Create accessible computational artifacts that meet standard compliance requirements or otherwise meet the needs of users with disabilities.	✓
9-12.IC.7	Investigate the use of computer science in multiple fields.	✓

Computational Thinking

CT 50 of 50 aligned

Grades K–1

K-1.CT.1	Identify and describe one or more patterns (found in nature or designed), and examine the patterns to find similarities and make predictions.	✓
K-1.CT.2	Identify different kinds of data that can be collected from everyday life.	✓
K-1.CT.3	Identify ways to visualize data, and collaboratively create a visualization of data.	✓
K-1.CT.4	Identify a problem or task and discuss ways to break it into multiple smaller steps.	✓
K-1.CT.5	Recognize that the same task can be described at different levels of detail.	✓
K-1.CT.6	Follow an algorithm to complete a task.	✓
K-1.CT.7	Identify terms that refer to different concrete values over time.	✓
K-1.CT.8	Identify a task consisting of steps that are repeated, and recognize which steps are repeated.	✓
K-1.CT.9	Identify and fix (debug) errors within a simple algorithm.	✓
K-1.CT.10	Collaboratively create a plan that outlines the steps needed to complete a task.	✓

Grades 2–3

2-3.CT.1	Create a model of an object or computational process in order to identify patterns and essential elements of the object or process.	✓
2-3.CT.2	Identify and describe data collection tools from everyday life.	✓

Standard		Status

Computational Thinking (Continued)

Grades 2–3 (Continued)

2-3.CT.3	Present the same data in multiple visual formats in order to tell a story about the data.	✓
2-3.CT.4	Identify multiple ways that the same problem could be decomposed into smaller steps.	✓
2-3.CT.5	Identify the essential details needed to perform a general task in different settings or situations.	✓
2-3.CT.6	Create two or more algorithms for the same task.	✓
2-3.CT.7	Name/label key pieces of information in a set of instructions, noting whether each name/label refers to a fixed or changing value.	✓
2-3.CT.8	Identify steps within a task that should only be carried out under certain precise conditions.	✓
2-3.CT.9	Identify and debug errors within an algorithm or program that includes sequencing or repetition.	✓
2-3.CT.10	Develop and document a plan that outlines specific steps taken to complete a project.	✓

Grades 4–6

4-6.CT.1	Develop a computational model of a system that shows changes in output when there are changes in inputs.	✓
4-6.CT.2	Collect digital data related to a real-life question or need.	✓
4-6.CT.3	Visualize a simple data set in order to highlight relationships and persuade an audience.	✓
4-6.CT.4	Decompose a problem into smaller named tasks, some of which can themselves be decomposed into smaller steps.	✓
4-6.CT.5	Identify and name a task within a problem that gets performed multiple times while solving that problem, but with slightly different concrete details each time.	✓
4-6.CT.6	Compare two or more algorithms and discuss the advantages and disadvantages of each for a specific task.	✓
4-6.CT.7	Identify pieces of information that might change as a program or process runs.	✓
4-6.CT.8	Develop algorithms or programs that use repetition and conditionals for creative expression or to solve a problem.	✓
4-6.CT.9	Explain each step of an algorithm or program that includes repetition and conditionals for the purposes of debugging.	✓
4-6.CT.10	Describe the steps taken and choices made to design and develop a solution using an iterative design process.	✓

Grades 7–8

7-8.CT.1	Compare the results of alternative models or simulations to determine and evaluate how the input data and assumptions change the results.	✓
7-8.CT.2	Collect and use digital data in a computational artifact.	✓
7-8.CT.3	Refine and visualize a data set in order to persuade an audience.	✓
7-8.CT.4	Write a program using functions or procedures whose names or other documentation convey their purpose within the larger task.	✓
7-8.CT.5	Identify multiple similar concrete computations in a program, then create a function to generalize over them using parameters to accommodate their differences.	✓
7-8.CT.6	Design, compare and refine algorithms for a specific task or within a program.	✓

Standard		Status

Computational Thinking (Continued)

Grades 7–8 (Continued)

7-8.CT.7	Design or remix a program that uses a variable to maintain the current value of a key piece of information.	✓
7-8.CT.8	Develop or remix a program that effectively combines one or more control structures for creative expression or to solve a problem.	✓
7-8.CT.9	Read and interpret code to predict the outcome of various programs that involve conditionals and repetition for the purposes of debugging.	✓
7-8.CT.10	Document the iterative design process of developing a computational artifact that incorporates user feedback and preferences.	✓

Grades 9–12

9-12.CT.1	Create a simple digital model that makes predictions of outcomes.	✓
9-12.CT.2	Collect and evaluate data from multiple sources for use in a computational artifact.	✓
9-12.CT.3	Refine and visualize complex data sets to tell different stories with the same data set.	✓
9-12.CT.4	Implement a program using a combination of student-defined and third-party functions to organize the computation.	✓
9-12.CT.5	Modify a function or procedure in a program to perform its computation in a different way over the same inputs, while preserving the result of the overall program.	✓
9-12.CT.6	Demonstrate how at least two classic algorithms work, and analyze the trade-offs related to two or more algorithms for completing the same task.	✓
9-12.CT.7	Design or remix a program that utilizes a data structure to maintain changes to related pieces of data.	✓
9-12.CT.8	Develop a program that effectively uses control structures in order to create a computer program for practical intent, personal expression, or to address a societal issue.	✓
9-12.CT.9	Systematically test and refine programs using a range of test cases, based on anticipating common errors and user behavior.	✓
9-12.CT.10	Collaboratively design and develop a program or computational artifact for a specific audience and create documentation outlining implementation features to inform collaborators and users.	✓

Networks and Systems Design

NSD 25 of 25 aligned

Grades K–1

K-1.NSD.1	Identify ways people provide input and get output from computing devices.	✓
K-1.NSD.2	Identify basic hardware components that are found in computing devices.	✓
K-1.NSD.3	Identify basic hardware and/or software problems.	✓
K-1.NSD.4	Identify how protocols/rules help people share information over long distances.	✓
K-1.NSD.5	Identify physical devices that can store information.	✓

Standard		Status

Networks and Systems Design (Continued)

Grades 2–3

2-3.NSD.1	Describe and demonstrate several ways a computer program can receive data and instructions (input) and can present results (output).	✓
2-3.NSD.2	Explain the function of software in computing systems, using descriptive/precise language.	✓
2-3.NSD.3	Describe and attempt troubleshooting steps to solve a simple technology problem.	✓
2-3.NSD.4	Recognize that information can be communicated using different representations that satisfy different rules.	✓
2-3.NSD.5	Describe and navigate to various locations where digital information can be stored.	✓

Grades 4–6

4-6.NSD.1	Propose improvements to the design of a computing technology based on an analysis of user interactions with that technology.	✓
4-6.NSD.2	Model how computer hardware and software work together as a system to accomplish tasks.	✓
4-6.NSD.3	Determine potential solutions to solve hardware and software problems using common troubleshooting strategies.	✓
4-6.NSD.4	Model how data is structured to transmit through a network.	✓
4-6.NSD.5	Describe that data can be stored locally or remotely in a network.	✓

Grades 7–8

7-8.NSD.1	Design a user interface for a computing technology that considers usability, accessibility, and desirability.	✓
7-8.NSD.2	Design a project that combines hardware and software components.	✓
7-8.NSD.3	Identify and fix problems with computing devices and their components using a systematic troubleshooting method or guide.	✓
7-8.NSD.4	Design a protocol for transmitting data through a multi-point network.	✓
7-8.NSD.5	Summarize how remote data is stored and accessed in a network.	✓

Grades 9–12

9-12.NSD.1	Design a solution to a problem that utilizes embedded systems to automatically gather input from the environment.	✓
9-12.NSD.2	Explain the levels of interaction existing between the application software, system software, and hardware of a computing system.	✓
9-12.NSD.3	Develop and communicate multi-step troubleshooting strategies others can use to identify and fix problems with computing devices and their components.	✓
9-12.NSD.4	Describe the components and design characteristics that allow data and information to be moved, stored and referenced over the Internet.	✓
9-12.NSD.5	Describe how emerging technologies are impacting networks and how they are used.	✓

Standard	Status

Cybersecurity

CY 24 of 24 aligned

Grades K–1		
K-1.CY.1	Identify reasons for keeping information private.	✓
K-1.CY.2	Identify simple ways to help keep accounts secure.	✓
K-1.CY.4	Decode a word or short message using a simple code.	✓
K-1.CY.5	Identify when it is appropriate to open and/or click on links or files.	✓
Grades 2–3		
2-3.CY.1	Compare reasons why an individual should keep information private or make information public.	✓
2-3.CY.2	Compare and contrast behaviors that do and do not keep information secure.	✓
2-3.CY.3	Identify why someone might choose to share an account, app access, or devices.	✓
2-3.CY.4	Encode and decode a short message or phrase.	✓
2-3.CY.5	Identify unusual activity of applications and devices that should be reported to a responsible adult.	✓
Grades 4–6		
4-6.CY.1	Explain why different types of information might need to be protected.	✓
4-6.CY.2	Describe common safeguards for protecting personal information.	✓
4-6.CY.3	Describe trade-offs between allowing information to be public and keeping information private and secure.	✓
4-6.CY.4	Model and explain the purpose of simple cryptographic methods.	✓
4-6.CY.5	Explain suspicious activity of applications and devices.	✓
Grades 7–8		
7-8.CY.1	Determine the types of personal information and digital resources that an individual may have access to that needs to be protected.	✓
7-8.CY.2	Describe physical, digital, and behavioral safeguards that can be employed in different situations.	✓
7-8.CY.3	Describe trade-offs of implementing specific security safeguards.	✓
7-8.CY.4	Describe the limitations of cryptographic methods.	✓
7-8.CY.5	Describe actions to be taken before and after an application or device reports a security problem or performs unexpectedly.	✓
Grades 9–12		
9-12.CY.1	Determine the types of personal and organizational information and digital resources that an individual may have access to that needs to be protected.	✓
9-12.CY.2	Describe physical, digital, and behavioral safeguards that can be employed to protect the confidentiality, integrity, and accessibility of information.	✓
9-12.CY.3	Explain specific trade-offs when selecting and implementing security recommendations.	✓

Standard	Status

Cybersecurity (Continued)

Grades 9–12 (Continued)

9-12.CY.4	Evaluate applications of cryptographic methods.	✓
9-12.CY.5	Recommend multiple actions to take prior and in response to various types of digital security breaches.	✓

Digital Literacy

DL 31 of 31 aligned

Grades K–1

K-1.DL.1	Identify and explore the keys on a keyboard.	✓
K-1.DL.2	Communicate and work with others using digital tools.	✓
K-1.DL.3	Conduct a basic search based on a provided keyword.	✓
K-1.DL.4	Use at least one digital tool to create a digital artifact.	✓
K-1.DL.7	Identify actions that promote good digital citizenship, and those that do not.	✓

Grades 2–3

2-3.DL.1	Locate and use the main keys on a keyboard to enter text independently.	✓
2-3.DL.2	Communicate and work with others using digital tools to share knowledge and convey ideas.	✓
2-3.DL.3	Conduct basic searches based on student-identified keywords.	✓
2-3.DL.4	Use a variety of digital tools and resources to create digital artifacts.	✓
2-3.DL.6	Describe ways that information may be shared online.	✓
2-3.DL.7	Understand what it means to be part of a digital community and describe ways to keep it a safe, respectful space.	✓

Grades 4–6

4-6.DL.1	Type on a keyboard while demonstrating proper keyboarding technique.	✓
4-6.DL.2	Select appropriate digital tools to communicate and collaborate while learning with others.	✓
4-6.DL.3	Conduct and refine advanced multi-criteria digital searches to locate content relevant to varied learning goals.	✓
4-6.DL.4	Use a variety of digital tools and resources to create and revise digital artifacts.	✓
4-6.DL.5	Identify common features of digital technologies.	✓
4-6.DL.6	Describe persistence of digital information and explain how actions in online spaces can have consequences.	✓
4-6.DL.7	Identify and describe actions in online spaces that could potentially be unsafe or harmful.	✓

Standard		Status
Digital Literacy (Continued)		
Grades 7–8		
7-8.DL.1	Type on a keyboard while demonstrating proper keyboarding technique, with increased speed and accuracy.	✓
7-8.DL.2	Communicate and collaborate with others using a variety of digital tools to create and revise a collaborative product.	✓
7-8.DL.3	Compare types of search tools, choose a search tool for effectiveness and efficiency, and evaluate the quality of search tools based on returned results.	✓
7-8.DL.4	Select and use digital tools to create, revise, and publish digital artifacts.	✓
7-8.DL.5	Transfer knowledge of technology in order to explore new technologies.	✓
7-8.DL.6	Explain the connection between the persistence of data on the Internet, personal online identity, and personal privacy.	✓
7-8.DL.7	Describe safe, appropriate, positive, and responsible online behavior and identify strategies to combat negative online behavior.	✓
Grades 9–12		
9-12.DL.1	Type proficiently on a keyboard.	✓
9-12.DL.2	Communicate and work collaboratively with others using digital tools to support individual learning and contribute to the learning of others.	✓
9-12.DL.4	Independently select advanced digital tools and resources to create, revise, and publish complex digital artifacts or collection of artifacts.	✓
9-12.DL.5	Transfer knowledge of technology in order to use new and emerging technologies on multiple platforms.	✓
9-12.DL.6	Actively manage digital presence and footprint to reflect an understanding of the permanence and potential consequences of actions in online spaces.	✓
9-12.DL.7	Design and implement strategies that support safety and security of digital information, personal identity, property, and physical and mental health when operating in the digital world.	✓

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tierrehobson@skillstruck.com

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