Grades 6-8 Computer Science

This document provides correlations between the 2023 Indiana Academic Standards and the 2022 Indiana Academic Standards for easy reference.

The 2023 Indiana Academic Standards resulted from the standards streamlining process required by Indiana Code 20-31-3-1(c-d) and were adopted by the Indiana State Board of Education in June 2023. Standards designated as essential (E) are shaded in gray and all standards were renumbered to avoid gaps in sequencing.

2023 Indiana Academic Standard		2022 Indiana Academic Standard	
Core Concept: Data & Information		**Core Concept: Data & Information**	
Number	**Text**	**Number**	**Text**
6-8.DI.1	Decompose (i.e., break down) problems into smaller, more manageable subsets by applying the algorithmic problem-solving steps to make the possible solutions easier to follow, test, and debug. (E)	**6-8.DI.1**	Decompose (i.e., break down) problems into smaller, more manageable subsets by applying the algorithmic problem-solving steps to make the possible solutions easier to follow, test, and debug.
6-8.DI.2	Collect data using computational tools (e.g., sensors, inputs like microphones) and transform the data to make it more useful and reliable.	**6-8.DI.2**	Collect data using computational tools (e.g., sensors, inputs like microphones) and transform the data to make it more useful and reliable.
6-8.DI.3	Describe that data can be represented in multiple encoding schemes such as binary, RGB values (e.g., red, green, and blue intensity), and hexadecimal codes.	**6-8.DI.4**	Describe that data can be represented in multiple encoding schemes such as binary, RGB values (e.g., red, green, and blue intensity), and hexadecimal codes.
6-8.DI.4	Create visuals such as flowcharts, diagrams, and pseudocode to represent complex problems as algorithms. (E)	**6-8.DI.5**	Create visuals such as flowcharts, diagrams, and pseudocode to represent complex problems as algorithms.

		6-8.DI.3	Examine the data represented by different program variables to ensure consistent format and remove errors.
2023 Indiana Academic Standard		**2022 Indiana Academic Standard**	
Core Concept: Computing Devices & Systems		**Core Concept: Computing Devices & Systems**	
Number	**Text**	**Number**	**Text**
6-8.CD.1	Design projects that combine hardware and software components to collect and exchange data. (E)	**6-8.CD.1**	Design projects that combine hardware and software components to collect and exchange data.
6-8.CD.2	Systematically identify and fix problems (i.e., troubleshoot) with computing devices and their components (e.g., checklist, decision tree, flowchart).	**6-8.CD.2**	Systematically identify and fix problems (i.e., troubleshoot) with computing devices and their components (e.g., checklist, decision tree, flowchart).
6-8.CD.3	Recommend improvements to the design of computing devices based on analysis of how users interact with the devices. (E)	**6-8.CD.3**	Recommend improvements to the design of computing devices based on analysis of how users interact with the devices.
6-8.CD.4	Describe what distinguishes humans from machines, focusing on ways we can communicate, as well as ways in which computers use models of intelligent behavior (e.g., robot motion, speech and language understanding, computer vision).	**6-8.CD.4**	Describe what distinguishes humans from machines, focusing on ways we can communicate, as well as ways in which computers use models of intelligent behavior (e.g., robot motion, speech and language understanding, computer vision).

2023 Indiana Academic Standard		2022 Indiana Academic Standard	
Core Concept: Programs & Algorithms		**Core Concept: Programs & Algorithms**	
Number	**Text**	**Number**	**Text**
6-8.PA.1	Design and iteratively develop programs that combine the following: sequencing, looping (including nested loops), conditionals (including compound conditionals), expressions, variables, functions, and parameters. (E)	6-8.PA.3	Design and iteratively develop programs that combine the following: sequencing, looping (including nested loops), conditionals (including compound conditionals), expressions, variables, functions, and parameters.
6-8.PA.2	Systematically test and refine programs using a range of test cases. (E)	6-8.PA.4	Systematically test and refine programs using a range of test cases.
6-8.PA.3	Incorporate existing code, media, and libraries into original programs and give attribution.	6-8.PA.6	Incorporate existing code, media, and libraries into original programs and give attribution.
6-8.PA.4	Document programs in order to make them easier to follow, test, and debug.	6-8.PA.7	Document programs in order to make them easier to follow, test, and debug.
		6-8.PA.1	Demonstrate dispositions to open-ended problem solving within programming (e.g., persistence, brainstorming, creativity, debugging, iterating).
		6-8.PA.2	Modify, remix, or incorporate portions of an existing program into one's own work to develop something new or add more advanced features.
		6-8.PA.5	Use the basic steps in the algorithmic problem-solving process to evaluate and revise solutions using a range of test cases.

2023 Indiana Academic Standard		2022 Indiana Academic Standard	
Core Concept: Networking & the Internet		**Core Concept: Networking & the Internet**	
Number	**Text**	**Number**	**Text**
6-8.NI.1	Explain how physical and cybersecurity measures protect electronic information. (E)	**6-8.NI.1**	Explain how physical and cybersecurity measures protect electronic information.
6-8.NI.2	Model the role of protocols in transmitting data across networks and the internet. (E)	**6-8.NI.2**	Model the role of protocols in transmitting data across networks and the internet.
6-8.NI.3	Apply multiple methods of encryption to model the secure transmission of information.	**6-8.NI.3**	Apply multiple methods of encryption to model the secure transmission of information.
2023 Indiana Academic Standard		**2022 Indiana Academic Standard**	
Core Concept: Impact & Culture		**Core Concept: Impact & Culture**	
Number	**Text**	**Number**	**Text**
6-8.IC.1	Exhibit legal and ethical behaviors when using technology and information and discuss the consequences of misuse. (E)	**6-8.IC.1**	Exhibit legal and ethical behaviors when using technology and information and discuss the consequences of misuse.
6-8.IC.2	Discuss issues of bias and accessibility in the design of existing technologies.	**6-8.IC.2**	Discuss issues of bias and accessibility in the design of existing technologies.
6-8.IC.3	Collaborate with many contributors through strategies such as crowdsourcing or surveys when creating a computational artifact.	**6-8.IC.3**	Collaborate with many contributors through strategies such as crowdsourcing or surveys when creating a computational artifact.
6-8.IC.4	Describe tradeoffs between allowing information to be public and keeping information private and secure.	**6-8.IC.4**	Describe tradeoffs between allowing information to be public and keeping information private and secure.

6-8.IC.5	Discuss how unequal distribution and participation in technology and computer science disadvantages marginalized populations.	6-8.IC.5	Discuss how unequal distribution and participation in technology and computer science disadvantages marginalized populations.
2023 Indiana Academic Standard		**2022 Indiana Academic Standard**	
Core Concept: Digital Literacy		**Core Concept: Digital Literacy**	
Number	**Text**	**Number**	**Text**
		6-8.DL.1	Select appropriate tools and technology resources to support learning and personal productivity, publish individual products, and design, develop, and publish data, accomplish a variety of tasks, and solve problems.
		6-8.DL.2	Distribute tasks and maintain a project timeline when collaboratively developing computational artifacts.
		6-8.DL.3	Demonstrate an understanding of the relationship between hardware and software.