**Introduction to Indiana’s Academic Standards for Computer Science**

Indiana’s Academic Standards for Computer Science allows for students to be prepared in the ever-changing computer science areas providing inquiry-based, hands-on experiences based on two components: Concepts and Practices.  These standards are to be implemented in the 2016-2017 school year.  The expectation is for students to work through the standards in multi-subject areas.  As students move through grade levels, they will work with and experience the standards at those grade bands (K-2, 3-5, and 6-8).  The standards are based on the five core concepts: Computing Devices and Systems, Networking and Communication, Data and Information, Programs and Algorithms, Impact and Culture.

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|  | **Data and Information (DI)** |
| **3-5.DI.1** Understand and use the basic steps in algorithmic problem solving (e.g., problem statement and exploration, examination of sample instances, design, implementation, and testing). |
| **3-5.DI.2** Develop a simple understanding of an algorithm (e.g., search, sequence of events, or sorting) using computer-free exercises. |
| **3-5.DI.3** Demonstrate how a string of bits can be used to represent alphanumeric information and how 1's and 0's represent information. |
| **3-5.DI.4** Describe how a simulation can be used to solve a problem. |
| **3-5.DI.5** Understand the connections between computer science and other fields. |

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|  | **Computing Devices and Systems (CD)** |
| **3-5.CD.1** Demonstrate proficiency with keyboards and other input and output devices. |
| **3-5.CD.2** Understand the pervasiveness of computers and computing in daily life (e.g., voicemail, downloading videos and audio files, microwave ovens, thermostats, wireless Internet, mobile computing devices, GPS systems). |
| **3-5.CD.3** Apply troubleshooting strategies for identifying simple hardware and software problems that may occur during use. |
| **3-5.CD.4** Recognize that computers model intelligent behavior (as found in robotics, speech and language recognition, and computer animation). |

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|  | **Programs and Algorithms (PA)** |
| **3-5.PA.1** Use technology resources (e.g., calculators, data collection probes, mobile devices, videos, educational software, and web tools) for problem-solving and self-directed learning, and general-purpose productivity tools and peripherals to support personal productivity, remediate skill deficits, facilitate learning, and individual/collaborative writing, communication, and publishing activities. |
| **3-5.PA.2** Use digital tools to gather, manipulate, and modify data for use by a program. |
| **3-5.PA.3** Implement problem solutions using a block-based visual programming language. |

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|  | **Networking and Communication (NC)** |
| **3-5.NC.1** Use online resources (e.g., email, online discussions, collaborative web environments) to participate in collaborative problem-solving activities for the purpose of developing solutions or products. |
| **3-5.NC.2** Use productivity technology tools (e.g., word processing, spreadsheet, presentation software) for individual and collaborative writing, communication, and publishing activities. |

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|  | **Impact and Culture (IC)** |
| **3-5.IC.1** Discuss basic issues related to responsible use of technology and information, and the consequences of inappropriate use. |
| **3-5.IC.2** Identify the impact of technology (e.g., social networking, cyber bullying, mobile computing and communication, web technologies, cyber security, and virtualization) on personal life and society. |
| **3-5.IC.3** Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and biases that occur in electronic information sources. |
| **3-5.IC.4** Understand ethical issues that relate to computers and networks (e.g., equity of access, security, privacy, copyright, and intellectual property). |