Illinois Computer Science

Grades 6-8

Computing Systems	1	Devices: Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. 6-8.CS.01
	2	Hardware and Software: Design projects that combine hardware and software components to collect and exchange data. 6-8.CS.02
	3	Troubleshooting: Systematically identify and fix problems with computing devices and their components. 6-8.CS.03
Networks and the Internet	4	Network Communication and Organization: Model the role of protocols in transmitting data across networks and the internet. 6-8.NI.04
	5	Cybersecurity: Explain how physical and digital security measures protect electronic information 6-8.NI.05
	6	Cybersecurity: Apply multiple methods of encryption to model the secure transmission of information 6-8.NI.06
Data and Analysis	7	Storage: Represent data using multiple encoding schemes. 6-8.DA.07
	8	Collection Visualization and Transformation: Collect data using computational tools and transform the data to make it more useful and reliable. 6-8.DA.08
	9	Interference and Models: Refine computational models based on the data they have generated. 6-8.DA.09
	10	Interference and Models: Evaluate the misuse of data and impact of distorted outcomes. 6-8.DA.10
Algorithms and Programming	11	Algorithms: Use flowcharts or pseudocode to address complex problems as algorithms 6-8.AP.11
	12	Variables: Perform operations on student-created variables that possess descriptive names and represent different data types. 6-8.AP.12
	13	Control: Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals. 6-8.AP.13
	14	Modularity: Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs. 6-8.AP.14

	15 Modularity: Create procedures with parameters to organize code and make it easier to reuse. 6-8.AP.15
	16 Program Development: Seek and incorporate feedback from team members and users to refine a solution that meets user needs. 6-8.AP.16
	17 Program Development: Incorporate existing code, media, and libraries into original programs and give attribution. 6-8.AP.17
	18 Program Development: Systematically test and refine programs using a range of test cases. 6-8.AP.18
	19 Program Development: Distribute tasks and maintain a project timeline when collaboratively developing computational artifacts. 6-8.AP.19
	20 Program Development:Document programs to make them easier to follow, test, and debug. 6-8.AP.20
Impacts of Computing	**21** Culture: Compare tradeoffs associated with computing technologies that affect people's everyday activities and career options. 6-8.IC.21
	22 Culture: Discuss issues of bias and accessibility in the design of existing technologies. 6-8.IC.22
	23 Social Interactions: Collaborate with many contributors through strategies such as crowdsourcing or surveys when creating a computational artifact. 6-8.IC.23
	24 Safety Law and Ethics: Describe tradeoffs between allowing information to be public and keeping information private and secure. 6-8.IC.24
Emerging and Future Technologies	**A** Explain that the field of emerging technologies will be evolving and rapidly growing 6-8.ET.A
	B Compare existing and emerging technologies, ideas, and concepts. 6-8.ET.B
	C Describe how emerging technologies are influencing current events at a local and global scale. 6-8.ET.C
	D Predict the positive and negative societal, cultural, and economic impacts that emerging and future technologies may generate. 6-8.ET.D
	E Create new or original work by applying emerging technologies 6-8.ET.E