Washington Computer Science

Level 3B: 11-12

Computing Systems	3B-CS-01	Categorize the roles of operating system software. P.7.2
	3B-CS-02	Illustrate ways computing systems implement logic, input, and output through hardware components. P.7.2
Networks and the Internet	3B-NI-03	Describe the issues that impact network functionality (e.g., bandwidth, load, delay, topology). P.7.2
	3B-NI-04	Compare ways software developers protect devices and information from unauthorized access. P.7.2
Data and Analysis	3B-DA-05	Use data analysis tools and techniques to identify patterns in data representing complex systems. P.4.1
	3B-DA-06	Select data collection tools and techniques to generate data sets that support a claim or communicate information. P.7.2
	3B-DA-07	Evaluate the ability of models and simulations to test and support the refinement of hypotheses. P.4.4
Algorithms and Programming	3B-AP-08	Describe how artificial intelligence drives many software and physical systems. P.7.2
	3B-AP-09	Implement an artificial intelligence algorithm to play a game against a human opponent or solve a problem. P.5.3
	3B-AP-10	Use and adapt classic algorithms to solve computational problems. P.4.2
	3B-AP-11	Evaluate algorithms in terms of their efficiency, correctness, and clarity. P.4.2
	3B-AP-12	Compare and contrast fundamental data structures and their uses. P.4.2
	3B-AP-13	Illustrate the flow of execution of a recursive algorithm. P.3.2
	3B-AP-14	Construct solutions to problems using student-created components, such as procedures, modules and/or objects. P.5.2
	3B-AP-15	Analyze a large-scale computational problem and identify generalizable patterns that can be applied to a solution. P.4.1

	3B-AP-16	**Demonstrate code reuse by creating programming solutions using libraries and APIs.** P.5.3
	3B-AP-17	**Plan and develop programs for broad audiences using a software lifecycle process.** P.5.1
	3B-AP-18	**Explain security issues that might lead to compromised computer programs.** P.7.2
	3B-AP-19	**Develop programs for multiple computing platforms.** P.5.2
	3B-AP-20	**Use version control systems, integrated development environments (IDEs), and collaborative tools and practices (code documentation) in a group software project.** P.2.4
	3B-AP-21	**Develop and use a series of test cases to verify that a program performs according to its design specifications.** P.6.1
	3B-AP-22	**Modify an existing program to add additional functionality and discuss intended and unintended implications (e.g., breaking other functionality).** P.5.3
	3B-AP-23	**Evaluate key qualities of a program through a process such as a code review.** P.6.3
	3B-AP-24	**Compare multiple programming languages and discuss how their features make them suitable for solving different types of problems.** P.7.2
Impacts of Computing	**3B-IC-25**	**Evaluate computational artifacts to maximize their beneficial effects and minimize harmful effects on society.** P.6.1, P.1.2
	3B-IC-26	**Evaluate the impact of equity, access, and influence on the distribution of computing resources in a global society.** P.1.2
	3B-IC-27	**Predict how computational innovations that have revolutionized aspects of our culture might evolve.** P.7.2
	3B-IC-28	**Debate laws and regulations that impact the development and use of software.** P.3.3, P.7.3