

CompuScholar, Inc.
Support for **CSTA Computer Science Standards**

CSTA Standards:

Name:	Computer Science Teachers Association (2017). CSTA K-12 Computer Science Standards, Revised 2017.
Grade Level:	11 - 12
Standards Link:	http://www.csteachers.org/standards

CompuScholar Courses in this Grade Band:

Course Title:	Digital Savvy , ISBN 978-0-9887070-8-5 Course Description and Syllabus
Course Title:	Web Design , ISBN 978-0-9887070-3-0 Course Description and Syllabus
Course Title:	Java Programming (Abridged) , ISBN 978-0-9887070-4-7 Course Description and Syllabus
Course Title:	Java Programming (AP) , ISBN 978-0-9887070-2-3 Course Description and Syllabus
Course Title:	Windows Programming with C# , ISBN 978-0-9887070-0-9 Course Description and Syllabus
Course Title:	Unity Game Programming , ISBN 978-0-9887070-7-8 Course Description and Syllabus
Course Title:	Python Programming , ISBN 978-1-946113-00-9 Course Description and Syllabus

Note 1: The CSTA is not currently conducting crosswalks for specific courses against CSTA standards. Therefore, per CSTA terms of use, CompuScholar does not publish alignments to specific courses, but has broad support for CSTA goals.

CSTA Standards, 11 - 12th Grade

IDENTIFIER	STANDARD	COMPUSCHOLAR STATEMENT OF SUPPORT
3B-CS-01	Categorize the roles of operating system software.	Our courses contain appropriate discussion of the different types of software.
3B-CS-02	Illustrate ways computing systems implement logic, input, and output through hardware components.	Our courses contain appropriate discussion of binary numbering and Boolean logic.
3B-NI-03	Describe the issues that impact network functionality (e.g., bandwidth, load, delay, topology).	Our courses contain appropriate discussion of network components and functionality.

3B-NI-04	Compare ways software developers protect devices and information from unauthorized access.	Our courses contain appropriate discussion of security concepts and software validation.
3B-DA-05	Use data analysis tools and techniques to identify patterns in data representing complex systems.	Our courses contain appropriate generation, collection or use of data sets for specific problems.
3B-DA-06	Select data collection tools and techniques to generate data sets that support a claim or communicate information.	Our courses contain appropriate generation, collection or use of data sets for specific problems.
3B-DA-07	Evaluate the ability of models and simulations to test and support the refinement of hypotheses.	Our courses contain appropriate use of simulations to represent real-world phenomena.
3B-AP-08	Describe how artificial intelligence drives many software and physical systems.	Our courses contain appropriate discussion of AI concepts, limitations and applications.
3B-AP-09	Implement an artificial intelligence algorithm to play a game against a human opponent or solve a problem.	Our courses contain opportunities for students to create AI algorithms to handle specific tasks.
3B-AP-10	Use and adapt classic algorithms to solve computational problems.	Our courses contain appropriate review and application of common algorithms.
3B-AP-11	Evaluate algorithms in terms of their efficiency, correctness, and clarity.	Our courses contain appropriate discussion of algorithm design and efficiency.
3B-AP-12	Compare and contrast fundamental data structures and their uses.	Our courses discuss appropriate data structures and applications.
3B-AP-13	Illustrate the flow of execution of a recursive algorithm.	Our courses contain appropriate discussion and application of recursive algorithms.
3B-AP-14	Construct solutions to problems using student-created components, such as procedures, modules and/or objects.	Our courses contain opportunities for creative student design and implementation of coding tasks.
3B-AP-15	Analyze a large-scale computational problem and identify generalizable patterns that can be applied to a solution.	Our courses contain appropriate opportunities for computational analysis.
3B-AP-16	Demonstrate code reuse by creating programming solutions using libraries and APIs.	Our courses contain appropriate opportunities for use of existing libraries and SDKs.
3B-AP-17	Plan and develop programs for broad audiences using a software life cycle process.	Our courses contain appropriate SDLC descriptions and opportunities for implementation.
3B-AP-18	Explain security issues that might lead to compromised computer programs.	Our courses contain appropriate discussion of security issues and considerations.

3B-AP-19	Develop programs for multiple computing platforms.	Our courses contain appropriate opportunities for cross-platform deployments.
3B-AP-20	Use version control systems, integrated development environments (IDEs), and collaborative tools and practices (code documentation) in a group software project.	Our courses contain appropriate use of IDEs and collaborative tools for team projects.
3B-AP-21	Develop and use a series of test cases to verify that a program performs according to its design specifications.	Our courses contain opportunities for students to write test plans and conduct program testing.
3B-AP-22	Modify an existing program to add additional functionality and discuss intended and unintended implications (e.g., breaking other functionality).	Our courses contain opportunities for iterative development and regression testing.
3B-AP-23	Evaluate key qualities of a program through a process such as a code review.	Our courses contain opportunities for debugging and quality analysis through code review.
3B-AP-24	Compare multiple programming languages and discuss how their features make them suitable for solving different types of problems.	Our courses contain appropriate descriptions of programming languages and features.
3B-IC-25	Evaluate computational artifacts to maximize their beneficial effects and minimize harmful effects on society.	Our courses contain discussions about computing ethics and the impact of computing on society.
3B-IC-26	Evaluate the impact of equity, access, and influence on the distribution of computing resources in a global society	Our courses contain appropriate discussions about the global distribution of computing resources.
3B-IC-27	Predict how computational innovations that have revolutionized aspects of our culture might evolve.	Our courses contain appropriate discussions of current and future technical trends.
3B-IC-28	Debate laws and regulations that impact the development and use of software.	Our courses contain appropriate discussion of software licensing and related laws.