washington
STATE LEARNING STANDARDS

kindergarten – 12th grade

Computer Science

K-12 Standards

Impacts of Computing

Revised 2018

License

Attribution

The CSTA K–12 Computer Science Standards are created and maintained by members of the Computer Science Teachers Association (CSTA).

The Association for Computing Machinery (ACM) founded CSTA as part of its commitment to K–12 computer science education. This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

Suggested citation: Computer Science Teachers Association (2017). CSTA K–12 Computer Science Standards, Revised 2017. Retrieved from http://www.csteachers.org/standards.

The K–12 Computer Science Framework, led by the Association for Computing Machinery, Code.org, Computer Science Teachers Association, Cyber Innovation Center, and National Math and Science Initiative in partnership with states and districts, informed the development of this work.

The CSTA Standards Revision Task Force crafted standards by combining concept statements and practices from the Framework. The Task Force also used descriptive material from the Framework when writing examples and clarifying statements to accompany the standards. The glossary referenced in the navigation header links directly to the Framework's glossary.

For more information about the Framework, please visit k12cs.org.

Legend for Identifiers

Unique Numbering System for the Washington Computer Science K–12 Learning Standards

To help organize and track each individual standard, a unique identifier was developed. An example appears below:

Level	Framework Concept	Number	Computer Science K–12 Learning Standard
Grades 6-8	Algorithms and Programming	17	Systematically test and refine programs using a range of test cases.
2	**AP**	**17**	**Identifier: 2-AP-17**

Use the following legend to interpret the unique identifier for each Computer Science K–12 Learning Standard:

The identifier code corresponds to: **Level – Concept – Number**		
Identifier Code		**Key**
Levels	1A	Grades K–2
	1B	Grades 3–5
	2	Grades 6–8
	3A	Grades 9–10
	3B	Grades 11–12
Concepts	CS	Computing Systems
	NI	Networks and the Internet
	DA	Data and Analysis
	AP	Algorithms and Programming
	IC	Impacts of Computing

Integrated into classroom activities through practices:

Practices	1	Fostering an Inclusive Computing Culture
	2	Collaborating
	3	Recognizing and Defining Computational Problems
	4	Developing and Using Abstractions
	5	Creating Computational Artifacts
	6	Testing and Refining
	7	Communicating about Computing

Figure 1: Standards Identifier Code –
Computer Science Teachers Association K–12 Computer Science Standards (2017)
Retrieved from http://www.csteachers.org

K-12 Impacts of Computing Standards

Identifier	Level 1A: K–2
1A-IC-16	Compare how people live and work before and after the implementation or adoption of new computing technology.
1A-IC-17	Work respectfully and responsibly with others online.
1A-IC-18	Keep login information private, and log off of devices appropriately.
Identifier	**Level 1B: 3–5**
1B-IC-18	Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.
1B-IC-19	Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.
1B-IC-20	Seek diverse perspectives for the purpose of improving computational artifacts.
1B-IC-21	Use public domain or creative commons media, and refrain from copying or using material created by others without permission.
Identifier	**Level 2: 6–8**
2-IC-20	Compare tradeoffs associated with computing technologies that affect people's everyday activities and career options.
2-IC-21	Discuss issues of bias and accessibility in the design of existing technologies.
2-IC-22	Collaborate with many contributors through strategies such as crowdsourcing or surveys when creating a computational artifact.
2-IC-23	Describe tradeoffs between allowing information to be public and keeping information private and secure.
Identifier	**Level 3A: 9–10**
3A-IC-24	Evaluate the ways computing impacts personal, ethical, social, economic, and cultural practices.
3A-IC-25	Test and refine computational artifacts to reduce bias and equity deficits.
3A-IC-26	Demonstrate ways a given algorithm applies to problems across disciplines.
3A-IC-27	Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields.
3A-IC-28	Explain the beneficial and harmful effects that intellectual property laws can have on innovation.
3A-IC-29	Explain the privacy concerns related to the collection and generation of data through automated processes that may not be evident to users.
3A-IC-30	Evaluate the social and economic implications of privacy in the context of safety, law, or ethics.

Identifier	Level 3B: 11–12
3B-IC-25	Evaluate computational artifacts to maximize their beneficial effects and minimize harmful effects on society.
3B-IC-26	Evaluate the impact of equity, access, and influence on the distribution of computing resources in a global society.
3B-IC-27	Predict how computational innovations that have revolutionized aspects of our culture might evolve.
3B-IC-28	Debate laws and regulations that impact the development and use of software.

Download this material in PDF at http://www.k12.wa.us/CurriculumInstruct/learningstandards.aspx.

Please refer to this document number for quicker service: 16-0075.

Chris Reykdal • State Superintendent
Office of Superintendent of Public Instruction
Old Capitol Building • P.O. Box 47200
Olympia, WA 98504-7200