

DLCS Curriculum Evaluation Tool Grades 9-12

Name of Reviewer: _____ **School/District:** _____ **Date:** _____

Name of Curriculum Materials: _____ **Publication Date:** _____ **Grade Level(s):** _____

Scale:

Not Found	N	The digital literacy and computer science content was not found.
Low	L	Major gaps in the digital literacy and computer science content were found.
Marginal	M	Gaps in the digital literacy and computer science content, as described in the Standards, were found and these gaps may
Acceptable	A	Few gaps in the digital literacy and computer science content, as described in the Standards, were found and these gaps
High	H	The digital literacy and computer science content was fully formed as described in the Standards.

Overarching Considerations:

To what extent do the materials:	N-L-M-A-H	Comments:
Provide a multitude of avenues to meet standards (unplugged, online, visual, auditory, kinesthetic)		
Meet accessibility standards (physically and digitally)		
Address a variety of comprehension levels (Blooms, DOK)		
Guidance for teachers in effectively teaching the standards (clear procedures are provided to assist in implementation of the materials; essential learning material such as handouts, student text, and other instructional tools provided)		
Provide varied assessment strategies that include:		
Basic response items (e.g., multiple choice, matching, true and false)		
Performance Assessments		
Reflect, over time, on what and how they have learned		
Project-based Tasks		
Provide opportunities for cross-curricular integration		
The resource provides guidance to the student regarding practicing and applying the skill using real life scenarios/ experiences		
Glossaries, bibliographies, indices, appendices, and tables of content are included, comprehensive, and easy to use		

DLCS Grade 9-12	Chapter, Pages, Resource	N-L-M-A-H	Comments:
Recurring Standards			
Safety, Privacy, and Security			
R1. Identify, demonstrate, and apply personal safe use of digital devices.			
Legal and Ethical Behavior			
R2. Recognize and demonstrate age-appropriate responsible use of digital devices and resources as outlined in school/district rules.			
Impact of Computing			
R3. Assess the validity and identify the purpose of digital content.			
Systems			
R4. Identify and employ appropriate troubleshooting techniques used to solve computing or connectivity issues.			
Collaborative Research			

R5. Locate and curate information from digital sources to answer research questions.			
Digital Tools			
R6. Produce, review, and revise authentic artifacts that include multimedia using appropriate digital tools.			
Computational Thinker			
Abstraction			
1. Decompose problems into component parts, extract key information, and develop descriptive models to understand the levels of abstractions in complex systems.			
2. Explain how computing systems are often integrated with other systems and embedded in ways that may not be apparent to the user. Examples: Millions of lines of code control the subsystems within an automobile (e.g., antilock braking systems, lane detection, and self-parking).			
Algorithms			
3. Differentiate between a generalized expression of an algorithm in pseudocode and its concrete implementation in a programming language.			
a. Explain that some algorithms do not lead to exact solutions in a reasonable amount of time and thus approximations are acceptable.			
b. Compare and contrast the difference between specific control structures such as sequential statements, conditional, iteration, and explain the benefits and drawbacks of choices made. Examples: Tradeoffs involving implementation, readability, and program performance.			
c. Distinguish when a problem solution requires decisions to be made among alternatives, such as selection constructs, or when a solution needs to be iteratively processed to arrive at a result, such as iterative "loop" constructs or recursion.			
d. Evaluate and select algorithms based on performance, reusability, and ease of implementation.			
e. Explain how more than one algorithm may solve the same problem and yet be characterized with different priorities. Examples: All self-driving cars have a common goal of taking a passenger to a designation but may have different priorities such as safety, speed, or conservation; web search engines have their own algorithms for search with their own priorities.			

<p>4. Use and adapt classic algorithms to solve computational problems. Examples: Sorting, searching, shortest path, and data compression.</p>			
Programming and Development			
<p>5. Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using current events.</p>			
<p>6. Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects, with parameters, and which return a result.</p>			
<p>7. Compare and contrast fundamental data structures and their uses. Examples: Strings, lists, arrays, stacks, queues.</p>			
<p>8. Demonstrate code reuse by creating programming solutions using libraries and Application Programming Interfaces.</p>			
<p>9. Demonstrate the ability to verify the correctness of a program.</p>			
<p>a. Develop and use a series of test cases to verify that a program performs according to its design specifications</p>			
<p>b. Collaborate in a code review process to identify correctness, efficiency, scalability and readability of program code.</p>			
<p>10. Resolve or debug errors encountered during testing using iterative design process. Examples: Test for infinite loops, check for bad input, check edge-cases.</p>			
Citizen of a Digital Culture			
Safety, Privacy, and Security			
<p>11. Model and demonstrate behaviors that are safe, legal, and ethical while living, learning, and working in an interconnected digital world.</p>			
<p>a. Recognize user tracking methods and hazards. Examples: Cookies, WiFi packet sniffing.</p>			
<p>b. Understand how to apply techniques to mitigate effects of user tracking methods.</p>			
<p>c. Understand the ramifications of end-user license agreements and terms of service associated with granting rights to personal data and media to other entities.</p>			
<p>d. Explain the relationship between online privacy and personal security. Examples: Convenience and accessibility, data mining, digital marketing, online wallets, theft of personal information.</p>			

e. Identify physical, legal, and ethical consequences of inappropriate digital behaviors. Examples: Cyberbullying/harassment, inappropriate sexual communications.			
f. Explain strategies to lessen the impact of negative digital behaviors and assess when to apply them.			
12. Describe how sensitive data can be affected by malware and other attacks.			
13. Compare various security measures of a computer system. Examples: Usability, security, portability, and scalability.			
14. Compare ways to protect devices, software, and data.			
Legal and Ethical Behavior			
15. Explain the necessity for the school's Acceptable Use Policy.			
16. Identify laws regarding the use of technology and their consequences and implications. Examples: Unmanned vehicles, net neutrality/common carriers, hacking, intellectual property, piracy, plagiarism.			
17. Discuss the ethical ramifications of malicious hacking and its impact on society. Examples: Dissemination of privileged information, ransomware.			
18. Explain the beneficial and harmful effects that intellectual property laws can have on innovation.			
Digital Identity			
19. Prove that digital identity is a reflection of persistent, publicly available artifacts.			
20. Evaluate strategies to manage digital identity and reputation with awareness of the permanent impact of actions in a digital world.			
Impact of Computing			
21. Explain how technology facilitates the disruption of traditional institutions and services. Examples: Digital currencies, ridesharing, autonomous vehicles, retail, Internet of Things.			
22. Research the impact of computing technology on possible career pathways. Examples: Government, business, medicine, entertainment, education, transportation.			
23. Debate the positive and negative effects of computing innovations in personal, ethical, social, economic, and cultural spheres. Examples: Artificial Intelligence/machine learning, mobile applications, automation of traditional occupational skills.			
Global Collaborator			
Creative Communication			

24. Compare and contrast Internet publishing platforms, including suitability for media types, target audience, and feedback mechanism.			
a. Apply version control capabilities within a digital tool to understand the importance of managing historical changes across suggestions made by a collaborative team.			
Digital Tools			
25. Utilize a variety of digital tools to create digital artifacts across content areas.			
Collaborative Research			
26. Use collaborative technologies to work with others including peers, experts, or community members to examine local, national, and global issues and problems from multiple viewpoints.			
Social Interaction			
27. Apply tools and methods for			
Computing Analyst			
Data			
28. Develop a model that reflects the			
29. Summarize the role of			
30. Evaluate the tradeoffs involved			
31. Create interactive data			
32. Use data analysis tools and			
Systems			
33. Evaluate the scalability and			
a. Explain the purpose of Internet			
b. Understand the need for			
34. Categorize the roles of operating			
35. Appraise the role of artificial			
36. Explain the tradeoffs when			
Innovative Designer			
Human/Computer Partnerships			
38. Systematically design and			
39. Identify a problem that cannot			
Design Thinking			
40. Use an iterative design process,			
Overall Impressions:	Comments:		
What are your overall impressions of the curriculum			
What are the strengths and weaknesses of the materials			
Have you identified gaps within this domain? What are			